IMPORTANT NOTICE

AVAILABLE ONLY TO INVESTORS WHO ARE OUTSIDE OF THE UNITED STATES.

IMPORTANT: You must read the following before continuing. The following applies to the offering circular (the "Offering Circular") following this page, and you are therefore advised to read this carefully before reading, accessing or making any other use of the Offering Circular. In accessing the Offering Circular, you agree to be bound by the following terms and conditions, including any modifications to them, any time you receive any information from the Issuer (as defined in the Offering Circular) as a result of such access.

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF THE BONDS (AS DEFINED IN THE OFFERING CIRCULAR) FOR SALE IN THE UNITED STATES OR ANY OTHER JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR WITH ANY SECURITIES REGULATORY AUTHORITY OF ANY STATE OR OTHER JURISDICTION OF THE UNITED STATES AND MAY NOT BE OFFERED, SOLD OR DELIVERED WITHIN THE UNITED STATES EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND APPLICABLE STATE SECURITIES LAWS. ACCORDINGLY, THE BONDS ARE BEING OFFERED, SOLD OR DELIVERED OUTSIDE THE UNITED STATES IN RELIANCE ON REGULATION S UNDER THE SECURITIES ACT ("REGULATION S").

THE FOLLOWING OFFERING CIRCULAR MAY NOT BE FORWARDED OR DISTRIBUTED TO ANY OTHER PERSON AND MAY NOT BE REPRODUCED IN ANY MANNER WHATSOEVER, AND IN PARTICULAR, MAY NOT BE FORWARDED TO ANY U.S. ADDRESS. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THIS DOCUMENT IN WHOLE OR IN PART IS UNAUTHORISED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS. IF YOU HAVE GAINED ACCESS TO THIS TRANSMISSION CONTRARY TO ANY OF THE FOREGOING RESTRICTIONS, YOU ARE NOT AUTHORISED AND WILL NOT BE ABLE TO PURCHASE ANY OF THE BONDS.

IMPORTANT-PROHIBITION OF SALES TO EEA AND UK RETAIL INVESTORS

The Bonds are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area (the "EEA") or the United Kingdom (the "UK"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II"); (ii) a customer within the meaning of Directive (EU) 2016/97, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Regulation (EU) 2017/1129. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the Bonds or otherwise making them available to retail investors in the EEA or in the UK has been prepared, and therefore offering or selling the Bonds or otherwise making them available to any retail investor in the EEA or in the UK may be unlawful under the PRIIPs Regulation.

MiFID II product governance/Professional investors and ECPs only target market – Solely for the purposes of the manufacturer's product approval process, the target market assessment in respect of the Bonds has led to the conclusion that: (i) the target market for the Bonds is eligible counterparties and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Bonds to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Bonds (a "distributor") should take into consideration the manufacturer's target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Bonds (by either adopting or refining the manufacturer's target market assessment) and determining appropriate distribution channels.

NOTICE TO UK INVESTORS

This communication is only being distributed to and is only directed at (a) persons who are outside the UK or (b) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (c) high net worth companies, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). The Bonds are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such Bonds will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

Confirmation of your representation: In order to be eligible to view the Offering Circular or make an investment decision with respect to the Bonds, investors must be outside the United States as defined in Regulation S under the Securities Act. The Offering Circular is being sent at your request and by accepting the e-mail and accessing the Offering Circular, you shall be deemed to have represented that (1) you and any customers you represent are outside of the United States, (2) the e-mail address that you provided and to which this e-mail has been delivered is not located in the United States and, to the extent you purchase the Bonds, you will be doing so pursuant to Regulation S and (3) you consent to delivery of the Offering Circular and any amendments and supplements thereto by electronic transmission.

You are reminded that the Offering Circular has been delivered to you on the basis that you are a person into whose possession the Offering Circular may be lawfully delivered in accordance with the laws of jurisdiction in which you are located and you may not, nor are you authorised to, deliver the Offering Circular to any other person.

The materials relating to the offering do not constitute, and may not be used in connection with, an offer or solicitation in any place where offers or solicitations are not permitted by law. If a jurisdiction requires that the offering be made by a licensed broker or dealer and Citigroup Global Markets Limited and J.P. Morgan Securities plc (the "Managers") or any affiliate of the Managers is a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by the Managers or such affiliate on behalf of the Issuer in such jurisdiction.

The Offering Circular has been sent to you in an electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of electronic transmission and consequently neither of the Managers nor any person who controls either Manager or any director, officer, employee or agent of it or affiliate of any such person accepts any liability or responsibility whatsoever in respect of any difference between the Offering Circular distributed to you in electronic format and the hard copy version available to you on request from either Manager.

Your use of this e-mail is at your own risk and it is your responsibility to take precautions to ensure that it is free from viruses and other items of a destructive nature.

Kakao Corp.

US$300,000,000
Zero Coupon Convertible Bonds due 2023



Convertible into common shares of Kakao Corp.
Issue Price: 100%

The US$300,000,000 Zero Coupon Convertible Bonds due 2023 (the "Bonds") are being issued by Kakao Corp., a corporation with limited liability incorporated under the laws of the Republic of Korea (the "Issuer"). The Bonds will not bear any interest. The Bonds will be redeemed at their aggregate principal amount at maturity unless otherwise previously redeemed, purchased or converted.

Each Bond will, at the option of the holder, be convertible (unless previously redeemed, converted or purchased and cancelled) any time during the Conversion Period (as defined in the terms and conditions of the Bonds (the "Conditions")) into fully paid common shares of the Issuer with a par value of Won 500 each (such common shares, the "Shares") at an initial conversion price of Won 477,225 per Share. The Conversion Price is subject to adjustment in the circumstances described under "Terms and Conditions of the Bonds – Conversion – Adjustments to Conversion Price."

The Bonds may be redeemed on October 28, 2022 at their principal amount at the option of the Bondholders. Each holder of the Bonds also has the right, at such holder's option, to require the Issuer to redeem all or a part of such holder's Bonds at their principal amount if the Issuer undergoes a Change of Control (as defined in the Conditions) or if the Shares officially cease to be listed or admitted for trading or are suspended for a period of at least 30 consecutive Trading Days (as defined in the Conditions) on the KRX KOSPI Market of the Korea Exchange (the "KRX KOSPI Market"). The Bonds may be redeemed on or after April 28, 2022 until the 30th business day prior to maturity, at the Issuer's option, in whole but not in part, at their principal amount, provided that the Bonds may not be so redeemed unless the Closing Price (as defined in the Conditions) per Share (translated into U.S. dollars at the Prevailing Rate (as defined in the Conditions)) has been at least 130% of the prevailing Conversion Price (translated into U.S. dollars at the Fixed Exchange Rate (as defined in the Conditions)). The Bonds may also be redeemed by the Issuer at their principal amount, in whole but not in part, in the event of certain changes relating to taxation or in the event that at least 90% of the initial principal amount of the Bonds has been redeemed, repurchased and cancelled, or converted.

The Shares are listed and admitted for trading on the KRX KOSPI Market. The closing price of the Shares on the KRX KOSPI Market was Won 352,500 per Share on October 20, 2020.

Approval in-principle has been received from the Singapore Exchange Securities Trading Limited (the "SGX-ST") for the listing and quotation of the Bonds on the SGX-ST. The SGX-ST assumes no responsibility for the correctness of any of the statements made, opinions expressed or reports contained herein. Approval in-principle from, admission to the Official List of, and listing and quotation of the Bonds on, the SGX-ST are not to be taken as an indication of the merits of the Issuer or the Bonds. There can be no assurance that such listing will be granted or, if granted, that such listing will be maintained.

The Bonds will initially be represented by beneficial interests in a global certificate (the "Global Bond") in registered form which will be registered in the name of a nominee of, and shall be deposited on or about October 28, 2020 (the "Issue Date") with a common depositary for, Euroclear Bank SA/NV ("Euroclear") and Clearstream Banking S.A. ("Clearstream"). Beneficial interests in the Global Bond will be shown on, and transfers thereof will be effected only through, records maintained by Euroclear and Clearstream. Except as described herein, certificates for Bonds will not be issued in exchange for interests in the Global Bond.

Investing in the Bonds involves risks. See "Risk Factors" beginning on page 10.

Joint Global Coordinators and Bookrunners

(in alphabetical order)

Citigroup **J.P. Morgan**

Offering Circular dated October 21, 2020

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You should rely only on the information contained in this offering circular or to which the Issuer has referred you. None of the Issuer nor the Managers (as defined in "Subscription and Sale") has authorised anyone to provide you with information that is different or make any representation other than as contained in this offering circular in connection with the offering of the Bonds. Neither the delivery of this offering circular nor any sale made hereunder shall, under any circumstances, constitute a representation or create any implication that there have been no changes in the affairs of the Issuer since the date hereof. You should assume the information in this offering circular is accurate only as of the date of this offering circular. The business, financial condition, results of operations and prospects of the Issuer may have changed since that date. Statements contained in this offering circular as to the contents of any contract or other document referred to in this offering circular may not set forth all of the terms and conditions of such contracts or other documents.

This offering circular has been prepared by the Issuer solely for use in connection with the proposed offering of the Bonds described in this offering circular. This offering circular is personal to each offeree and does not constitute an offer to any other person or to the public generally to subscribe for or otherwise acquire the Bonds. Distribution of this offering circular to any person other than the prospective investor and any person retained to advise such prospective investor with respect to its purchase is unauthorised and any disclosure of any of its contents, without the Issuer's prior written consent, is prohibited. Each prospective investor, by accepting delivery of this offering circular, agrees to the foregoing and further agrees not to make any photocopies of this offering circular or any documents referred to in this offering circular.

The Bonds and the Shares deliverable upon conversion of the Bonds have not been, and will not be, registered under the Securities Act. The Bonds are being offered in reliance on an exemption from registration under the Securities Act for offers and sales of securities outside the United States. Neither the Issuer nor the Managers are making an offer to sell the Bonds in any jurisdiction where the offer or sale is not permitted.

The Bonds and the Shares deliverable upon conversion of the Bonds have not been recommended by any United States federal or state or foreign securities commission or regulatory authority. Furthermore, the foregoing authorities have not reviewed or passed on the accuracy or adequacy of this offering circular, and any representation to the contrary may be a criminal offense.

As a prospective purchaser, you should be aware that you may be required to bear the financial risks of this investment for an indefinite period of time. The Bonds and the Shares deliverable upon conversion of the Bonds are subject to restrictions on transferability and may not be transferred or resold except as permitted under applicable U.S. federal or state securities laws pursuant to a registration statement or an exemption from registration. See "Subscription and Sale."

In making an investment decision, prospective investors must rely on their own examination of the Issuer and the terms of this offering, including the merits and risks involved. The Issuer does not make any representation to any purchaser of the Bonds regarding the legality of an investment in the Bonds by such purchaser under any legal investment or similar laws or regulations. Neither this offering circular nor any information supplied in connection with the issue of the Bonds should be considered as a recommendation or constituting an invitation or offer by the Issuer that any recipient of this offering circular should purchase any Bonds. The contents of this offering circular should not be construed as providing legal, business, accounting or tax advice.

No representation, undertaking or warranty, express or implied, is made by the Managers, the Trustee (as defined in "Terms and Conditions of the Bonds"), the Agents (as defined in "Terms and Conditions of the Bonds") or any of their respective affiliates or advisers as to the accuracy or completeness of the information contained in this offering circular, and nothing contained in this offering circular is, or shall be relied upon as, a promise or representation by the Managers or their affiliates or advisers. The Issuer has furnished the information contained in this offering circular. The Managers, the Trustee and the Agents assume no responsibility for the accuracy or completeness of any such information (financial, legal or otherwise) provided by the Issuer in connection with the issue of the Bonds or their distribution. Each person receiving this offering circular acknowledges that such person has not relied on the Managers, the Trustee, the Agents or any person affiliated with the Managers, the Trustee or the Agents in connection with investigation of the accuracy of such information or its investment decisions. To the fullest extent permitted by law, the Managers disclaim any and all liability in relation to the information contained in this offering circular or any other information provided by the Issuer in connection with the offering of the Bonds or their distribution.

The Issuer, having made all reasonable enquiries, confirms that this offering circular contains all information with respect to it and the Bonds which is material in the context of the issue and offering of the Bonds; such information is true and accurate in all material respects and is not misleading in any material respect; any opinions or intentions expressed in this offering circular with regard to the Issuer are honestly held or made, have been reached after considering all relevant circumstances and are based on reasonable assumptions; there are no other facts in relation to the Issuer or the Bonds the omission of which would, in the context of the issue and the offering of the Bonds, make any statement in this offering circular misleading in any material respect; and all reasonable enquiries have been made to ascertain and verify the foregoing. The Issuer accepts responsibility accordingly.

The Issuer reserves the right to withdraw this offering of the Bonds at any time. The Issuer and the Managers also reserve the right to reject any offer to purchase the Bonds in whole or in part for any reason and to allocate to any prospective investor less than the full amount of the Bonds sought by such investor.

The distribution of this offering circular and the offering of the Bonds (or the Shares deliverable upon conversion of the Bonds) in certain jurisdictions may be restricted by law. This offering circular may not be used for or in connection with any offer to, or solicitation by, anyone in any jurisdiction in which it is unlawful to make such an offer or solicitation. Persons into whose possession this offering circular may come are required to inform themselves about and to observe the relevant restrictions. No action is being taken to permit an offering to the general public of the Bonds or the Shares or the distribution of this offering circular in any jurisdiction where action would be required for those purposes.

The Bonds have not been registered under the Financial Investment Services and Capital Markets Act of the Republic of Korea ("Korea"). Accordingly, the Bonds may not be offered, sold or delivered, directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as such term is defined under the Foreign Exchange Transaction Law of Korea and its enforcement decree), for a period of one year from the date of issuance of the Bonds, except as otherwise permitted under applicable Korean laws and regulations. In addition, until the expiration of one year after the issuance of the Bonds, the Bonds may not be transferred to any resident of Korea.

Notification under Section 309B(1)(c) of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA") – the Issuer has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the Bonds are prescribed capital markets products (as defined in the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

In connection with this offering, the Managers may over-allot Bonds or effect transactions that stabilise or maintain the market price of the Bonds at a higher level than the Bonds might otherwise achieve in the open market for a limited period of time after the issue date. However, there is no assurance that the Managers will undertake stabilisation action. Such stabilising, if commenced, may be discontinued at any time and, if begun, must be brought to an end after a limited period. Any stabilisation action or over-allotment must be conducted by the Managers in accordance with all applicable laws and rules.

Any purchase or acquisition of the Bonds is in all respects conditional on the satisfaction of certain conditions set out in the Subscription Agreement (as defined herein) and the issue of the Bonds by the Issuer to the Managers pursuant to the Subscription Agreement. Any offer, invitation to offer or agreement made in connection with the purchase or acquisition of the Bonds pursuant to this offering circular shall (without liability or responsibility on the part of the Issuer, the Managers, the Trustee or the Agents) lapse and cease to have any effect if (for any reason whatsoever) the Bonds are not issued by the Issuer to the Managers pursuant to the Subscription Agreement.

CERTAIN DEFINED TERMS AND CONVENTIONS

Market data, industry forecasts and certain statistical information used throughout this offering circular were obtained from internal surveys, market research, publicly available information and industry publications published by third party sources that the Issuer believes are reliable, including the Korea Exchange. Such information has been accurately reproduced herein and, as far as the Issuer is aware and is able to ascertain from information published by such third parties, no facts have been omitted that would render the reproduced information inaccurate or misleading. Industry publications generally state that the information that they contain has been obtained from sources believed to be reliable but that the accuracy and completeness of that information is not guaranteed. Similarly, internal surveys, industry forecasts and market research, while believed to be reliable, have not been independently verified, and none of the Issuer, the Managers, the Trustee or the Agents makes any representation as to the accuracy or completeness of such information.

The consolidated financial statements of the Company included in this offering circular were prepared in accordance with International Financial Reporting Standards as adopted in Korea ("K-IFRS").

In this offering circular, unless otherwise specified or the context otherwise requires:

- references to the "Issuer" and the "Company" are to Kakao Corp. and (except for references to "the Issuer") its consolidated subsidiaries;
- references to the "Kakao Group" are to a group of companies affiliated with Kakao Corp. for the purposes of the Monopoly Regulation and Fair Trade Act of Korea;
- references to the "Bonds" are to the Issuer's US$300,000,000 Zero Coupon Convertible Bonds due 2023 described herein; and
- references to the "Shares" are to shares of the Issuer's common stock, par value Won 500 per share.

All references to "Korea" are to the Republic of Korea, and references to the "Government" are to the government of the Republic of Korea. All references to "U.S." or the "United States" are to the United States of America.

All references to "Won" and "₩" are to the lawful currency of the Republic of Korea and all references to "U.S. dollars" or "US$" are to the lawful currency of the United States of America. Solely for the reader's convenience, certain Won amounts in this offering circular have been translated into U.S. dollars at the market average exchange rate, announced by Seoul Money Brokerage Services, Ltd. in Seoul, between Won and U.S. dollars, rounded to the nearest tenth of one Won (the "Market Average Exchange Rate"). For a discussion of historical information regarding the rate of exchange between the Won and U.S. dollars, see "Exchange Rates." No representation is made that the Won or U.S. dollar amounts referred to in this offering circular could have been or could be converted into U.S. dollars or Won, as the case may be, at any particular rate or at all. On October 20, 2020, the Market Average Exchange Rate in effect was Won 1,142.2 to US$1.00.

Any discrepancies in the tables included herein between totals and sums of the amounts listed are due to rounding.

The information on the Company's website, http://www.kakaocorp.com or any website directly or indirectly linked to such website is not incorporated by reference into this offering circular and should not be relied upon.

SUMMARY

The following summary highlights information appearing elsewhere in this offering circular and does not contain all of the information you should consider in making your investment decision. You should read this summary together with the more detailed information, including the financial statements and related notes, appearing elsewhere in this offering circular. You should carefully consider, among other things, the matters discussed in "Risk Factors."

The Company

The Company operates Korea's leading mobile platform, Kakao Talk, as well as other leading online platforms in Korea, including the Daum portal and Melon online music platforms. The Company utilises these leading platforms, along with its other platforms developed using its major brands, such as Kakao T, Kakao Pay and Daum Webtoon, to provide users and advertisers with a diverse and expanding array of products and services. The Company provides such products and services through its platform and content operations.

The Company's platform operations allow users to engage in more aspects of their daily affairs using their mobile and other connected devices and PCs at their convenience, while enabling advertisers to access its large and growing user base across the Kakao ecosystem. The Company's platform-related products and services provide users with the ability to communicate, search content, shop and make payments online, as well as use innovative services such as mobile transportation applications, through the Company's platforms. The Company also offers advertisers advertising products and services through its platforms in a variety of online formats that allow advertisers to better target their marketing to their desired audiences among the Company's users. Such platform-based products and services are mainly offered through the Kakao Talk platform and the Daum portal platform as well as the Kakao T and Kakao Pay platforms.

The Company's content operations enable delivery of original and third party-produced content to users through the Company's platforms. Such content-related products and services include games, music, web-comics, web-novels, movies and television shows, and leveraging the success of its platform operations and recognition of major brands, including Kakao, Daum and Melon, the Company provides content through platforms that are specifically tailored to optimise the users' experience with such content, such as the Melon online music, Kakao Page, Daum Webtoon and Kakao Games platforms.

The integration of the Company's products and services through its platforms aims to provide its users with a smoother and richer connection experience that contributes to higher user loyalty and user base growth, which in turn may enhance the Company's ability to accumulate and analyse substantial amounts of user-related data to better understand user preferences and to improve its product and service offerings, including the effectiveness of online advertising through such platforms. Leveraging its content, its user base and their interconnectivity, the Company's platforms have evolved into diversified online gateways that are fundamentally changing social interactions and lifestyle patterns in Korea. The Company's platforms have become integrated into numerous aspects of its users' daily lives. Users add value to the overall Kakao ecosystem each time they engage with other users, advertisers or content or service providers. Increases in user engagement enable the Company to grow its scale by attracting more users, advertisers and content and service providers. In turn, growth in scale in terms of the number of users, advertisers and content and service providers and the interactions among them enhances the value the Company delivers to all of its constituencies and leads to greater monetisation opportunities.

The Company was formed on October 1, 2014, when the former Kakao Corp. (the "Former Kakao") merged with and into Daum Communications, its predecessor company. Founded in December 2006 as IWILAB Co., Ltd., the Former Kakao launched Kakao Talk and changed its name to Kakao Corp. in 2010. Daum Communications was established in February 1995 and introduced Korea's first free e-mail service in 1997. The Company acquired the Melon online music platform in March 2016 through the acquisition

of a controlling interest in LOEN Entertainment (the "Former Kakao M"), a leading music entertainment company in Korea and the former operator of such platform, which was merged with and into the Company in September 2018. Seoul Record, the predecessor company to LOEN Entertainment, was founded in 1978.

The Company generates revenue by leveraging the numerous affiliations and interests that connect the people and entities that constitute its user base and prompting its users to actively and repeatedly engage and interact with the wide variety of products, services and content the Company provides through its online platforms. Its revenue is primarily generated from advertising services, content offerings, and other services, including e-commerce and character merchandising. The Company's revenue amounted to Won 1,972 billion in 2017, Won 2,417 billion in 2018, Won 3,070 billion in 2019, Won 1,439 billion in the first six months of 2019 and Won 1,821 billion in the first six months of 2020. Its net profit (loss) for the period amounted to a net profit of Won 125 billion in 2017 and Won 16 billion in 2018, a net loss of Won 342 billion in 2019 and a net profit of Won 49 billion in the first six months of 2019 and Won 225 billion in the first six months of 2020. The Company had total assets of Won 10,043 billion and total equity of Won 6,701 billion as of June 30, 2020.

The Offering

Terms used in this summary and not otherwise defined shall have the meanings given to them in "Terms and Conditions of the Bonds."

Offering	The Bonds are being offered by the Managers in reliance on Regulation S.
Issuer	Kakao Corp.
Maturity	April 28, 2023 (the "Maturity Date").
Offering Price	100% of the principal amount of the Bonds.
Size of Offering	The aggregate principal amount of the Bonds to be issued in this offering is US$300,000,000.
Denomination	The Bonds will be issued in denominations of US$200,000 each or in integral multiples of US$100,000 in excess thereof.
Interest	The Bonds will not bear any interest (except as set out in the Conditions). See "Terms and Conditions of the Bonds – Interest."
Additional Amounts	All payments in respect of the Bonds by the Issuer will be made free from any restriction or condition and be made without deduction or withholding for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Korea or any authority thereof or therein having power to tax, unless deduction or withholding of such taxes, duties, assessments or governmental charges is compelled by law. If such withholding or deduction is so required, the Issuer will pay Additional Amounts (as defined in the Conditions), subject to certain exceptions, as set out in the Conditions, as may be necessary in order that the net amounts received by the Bondholders after such withholding or deduction shall equal the amounts which would have been receivable in respect of the Bonds in the absence of such withholding or deduction. See "Terms and Conditions of the Bonds – Taxation."
Redemption on Maturity	Unless previously redeemed, purchased or converted as provided in the Conditions, the Issuer will redeem the Bonds at their aggregate principal amount on the Maturity Date.
Conversion	Each Bondholder has the right to convert any of its Bonds or any portion thereof (being US$200,000 in principal amount or an integral multiple of US$100,000 in excess thereof) into the Shares (held by the Issuer as treasury shares) at any time during the Conversion Period referred to below, subject to compliance with certain restrictions and conversion procedures. The Shares deliverable upon conversion will rank *pari passu* in all respects with the Shares then outstanding.

Conversion Right	From and including January 1, 2021 up to and including April 18, 2023 (or, if the Bonds shall have been called for redemption prior to maturity, 10 calendar days prior to the redemption date or, if such date shall not be a business day at the place where the Certificate representing the Bond is to be delivered, the immediately preceding Trading Day). See "Terms and Conditions of the Bonds – Conversion – Conversion Right."
Conversion Price	Won 477,225 per Share which will be subject to adjustment in the manner provided in the Terms and Conditions of the Bonds. See "Terms and Conditions of the Bonds – Conversion – Adjustments to Conversion Price."
Conversion Price Adjustment	If the Issuer shall (a) make a free distribution of Shares (other than by way of a dividend in Shares), (b) make a bonus issue of its Shares, (c) sub-divide its outstanding Shares, (d) consolidate its outstanding Shares into a smaller number of Shares or (e) re-classify any of its Shares into other securities of the Issuer, then the Conversion Price shall be appropriately adjusted so that the holder of any Bond shall be entitled to receive the number of Shares and/or other securities of the Issuer which such holder would have held or have been entitled to receive after the occurrence of any of the events described above had such Bond been converted immediately prior to the occurrence of such event. See "Terms and Conditions of the Bonds – Conversion – Adjustments to Conversion Price."
Redemption by the Issuer	The Issuer may, at its option at any time on or after April 28, 2022, until the 30th business day prior to the Maturity Date, redeem the Bonds, in whole but not in part, at 100% of their principal amount, if the Closing Price of a Share (translated into U.S. dollars at the Prevailing Rate (as defined in the Conditions)) for each of 20 Trading Days in the period of 30 consecutive Trading Days ending on the Trading Day immediately prior to the date of the Issuer's redemption notice is at least 130% of the prevailing Conversion Price (translated into U.S. dollars at the Fixed Exchange Rate (as defined in the Conditions)). In addition, in the event that at least 90% of the initial principal amount of the Bonds has been redeemed, repurchased and cancelled, or converted, the Issuer may, prior to their maturity, redeem, in whole but not in part, the remaining outstanding Bonds at 100% of their principal amount. See "Terms and Conditions of the Bonds – Redemption, Purchase and Cancellation – Redemption at the Option of the Issuer."
Redemption for Taxation Reasons	The Issuer may, at any time, redeem the Bonds, in whole but not in part, at 100% of their principal amount in the event of certain changes relating to taxation in Korea that would require the Issuer to gross up for any payments on the Bonds. This redemption right is subject to the right of each Bondholder to forego such gross-up amounts and leave its respective Bonds outstanding. See "Terms and Conditions of the Bonds – Redemption, Purchase and Cancellation – Redemption for Taxation Reasons."

Redemption at the Option of the Bondholders	Until and unless previously redeemed, repurchased and cancelled, or converted, on October 28, 2022, each of the Bondholders has the right, at the option of such holder, to require the Issuer to redeem all or a portion (in an aggregate principal amount of at least US$200,000 or an integral multiple of US$100,000 in excess thereof) of such holder's Bonds at their principal amount. See "Terms and Conditions of the Bonds – Redemption, Purchase and Cancellation – Redemption at the Option of the Bondholders."
Redemption in the Event of Delisting	In the event that the Shares officially cease to be listed or admitted for trading or are suspended for a period of at least 30 consecutive Trading Days on the KRX KOSPI Market, each Bondholder shall have the right, at such Bondholder's option, to require the Issuer to redeem at 100% of their principal amount all or a portion of such holder's Bonds (in an aggregate principal amount of at least US$200,000 or an integral multiple of US$100,000 in excess thereof). See "Terms and Conditions of the Bonds – Redemption, Purchase and Cancellation – Delisting Put Right."
Redemption in the Event of Change of Control	If a Change of Control occurs with respect to the Issuer, each Bondholder shall have the right, at such Bondholder's option, to require the Issuer to redeem all or a portion of such holder's Bonds (in an aggregate principal amount of at least US$200,000 or an integral multiple of US$100,000 in excess thereof) on the date set by the Issuer for such redemption, which shall not be less than 30 nor more than 60 days after the occurrence of a Change of Control, at 100% of their principal amount. See "Terms and Conditions of the Bonds – Redemption, Purchase and Cancellation – Redemption for Change of Control."
Negative Pledge	Subject to certain exceptions, the Issuer will not, and will not permit any Principal Subsidiary to, create or permit to be outstanding any security interest in respect of International Investment Securities without equally and ratably securing the Bonds. See "Terms and Conditions of the Bonds – Negative Pledge."
Form of the Bonds	The Bonds will be issued in registered form without coupons and only in denominations of US$200,000 each and in integral multiples of US$100,000 in excess thereof. A Certificate will be issued to each Bondholder in respect of its registered holding of Bonds. See "Terms and Conditions of the Bonds – Form, Denomination and Title."
Governing Law	The Bonds, the Trust Deed and the Agency Agreement and any non-contractual obligations arising out of or in connection with them are governed by, and shall be construed in accordance with, English law.
Trustee	Citicorp International Limited.

Listings/Applications	Approval in-principle has been received from the SGX-ST for the listing and quotation of the Bonds on the SGX-ST. There can be no assurance that a listing of the Bonds on the SGX-ST will be obtained and the offering and settlement of the Bonds are not conditioned on obtaining this listing. The shares of Kakao Corp. are currently listed on the KRX KOSPI Market. For so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, the Bonds, if traded on the SGX-ST, will be traded in a minimum board lot size of S$200,000 (or its equivalent in foreign currencies). Accordingly, the Bonds, if traded on the SGX-ST, will be traded in a minimum board lot size of US$200,000.
Use of Proceeds	The net proceeds from the sale of the Bonds will be used by the Issuer primarily for general corporate purposes. See "Use of Proceeds."
Lock up Agreement	Subject to certain exceptions, the Issuer has undertaken to the Managers that neither it nor any person acting on its behalf will, beginning from the date of the Subscription Agreement up to 90 days after the Closing Date, without the prior written consent of the Managers, (a) issue, offer, sell, pledge, contract to sell or otherwise dispose of or grant options, issue warrants or offer rights entitling persons to subscribe for or purchase any interest in, or any securities convertible into, exchangeable for or which carry rights to subscribe for or purchase, the Shares or securities of the same class as the Shares or other instruments representing interests in the Shares or other securities of the same class as them, (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of the ownership of the Shares, whether any such transaction of the kind described in (a) or (b) is to be settled by delivery of Shares or other securities, in cash or otherwise or (c) announce or otherwise make public an intention to do any of the foregoing.
Security Identification	ISIN: XS2247556199 Common Code: 224755619 LEI: 988400FTKUBQXKVZP434

Summary Consolidated Financial Information

CONSOLIDATED FINANCIAL INFORMATION OF THE COMPANY

The following tables set forth summary financial information of the Company. Such information should be read in conjunction with the Company's consolidated financial statements and related notes and other financial information appearing elsewhere in this offering circular.

The Company's summary consolidated financial information as of June 30, 2020 and for the six months ended June 30, 2019 and 2020 set forth below has been derived from its unaudited condensed consolidated interim financial statements as of June 30, 2020 and for the six months ended June 30, 2020 and 2019 prepared in accordance with K-IFRS 1034, "Interim Financial Reporting," and included elsewhere in this offering circular. The Company's summary consolidated financial information as of December 31, 2017, 2018 and 2019 and for the years ended December 31, 2017, 2018 and 2019 set forth below has been derived from its audited consolidated financial statements as of such dates and for such periods prepared in accordance with K-IFRS and included elsewhere in this offering circular.

The Company's results of operations for the six months ended June 30, 2020 may not be indicative of its results of operations for the full year 2020.

Consolidated Statement of Comprehensive Income Information

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	2018[1]	2019[1][2]	2019[1][2]	2020[1][2]
			(In billions of Won)		
Revenue	₩ 1,972	₩ 2,417	₩ 3,070	₩ 1,439	₩ 1,821
Operating expenses	(1,806)	(2,341)	(2,862)	(1,372)	(1,636)
Reversal of allowance for bad debts (impairment loss on trade receivables)	(1)	(3)	(2)	1	(1)
Operating profit	165	73	207	68	186
Other non-operating income	36	75	74	22	122
Other non-operating expenses	(91)	(86)	(521)	(27)	(24)
Interest income	15	42	32	17	12
Other finance income	64	71	39	19	46
Finance costs	(46)	(50)	(44)	(19)	(18)
Share of income of associates and joint ventures	26	32	11	26	32
Share of loss of associates and joint ventures	(17)	(26)	(31)	(12)	(26)
Profit (loss) before income tax	153	131	(234)	94	331
Income tax expense	(28)	(115)	(108)	(46)	(106)
Profit (loss) for the period	₩ 125	₩ 16	₩ (342)	₩ 49	₩ 225

(1) The amounts for 2018, 2019 and the six months ended June 30, 2019 and 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(2) The amounts for 2019 and the six months ended June 30, 2019 and 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

Consolidated Statement of Financial Position Information

	As of December 31,			As of June 30,
	2017	2018[1]	2019[1][2]	2020[1][2]
		(In billions of Won)		
Total assets	₩6,349	₩7,960	₩8,737	₩10,043
Current assets	1,993	2,859	2,830	3,273
Cash and cash equivalents	1,117	1,247	1,918	1,813
Short-term financial instruments	394	924	208	477
Trade receivables	179	194	157	147
Other current financial assets	134	208	252	259
Other current assets	93	224	194	245
Non-current assets	4,356	5,101	5,908	6,302
Financial assets at fair value through profit or loss	–	105	127	179
Financial assets at fair value through other comprehensive income	–	329	419	414
Available-for-sale securities	160	–	–	–
Investments in associates and joint ventures	162	305	979	1,104
Property and equipment	271	315	350	368
Intangible assets	3,690	3,865	3,548	3,714
Total liabilities	₩1,887	₩2,332	₩2,997	₩ 3,342
Current liabilities	1,041	2,039	2,433	2,321
Trade and other payables	280	461	579	644
Short-term borrowings[3]	174	609	449	196
Deposits received	–	130	300	286
Other current liabilities	425	730	920	997
Non-current liabilities	846	293	564	635
Long-term borrowings[4]	621	45	72	39
Long-term lease liabilities	–	–	165	175
Deferred income tax liabilities	140	151	141	169
Total equity	₩4,463	₩5,627	₩5,740	₩ 6,701
Share capital	34	42	43	44
Share premium	3,604	4,648	5,043	5,631
Retained earnings	403	453	148	378

(1) The amounts as of December 31, 2018 and 2019 and June 30, 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(2) The amounts as of December 31, 2019 and June 30, 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

(3) Including redeemable convertible preferred shares issued by the Company's subsidiaries.

(4) Including corporate bonds.

Cash Flow and Other Financial Information

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	2018	2019	2019	2020
			(In billions of Won)		
Net cash inflow from operating activities	₩ 372	₩ 491	₩ 753	₩287	₩ 278
Net cash inflow (outflow) from investing activities	(355)	(1,261)	(414)	170	(749)
Net cash inflow (outflow) from financing activities	468	891	322	(98)	384
Adjusted EBITDA[(1)]	295	208	426	172	307

(1) Adjusted EBITDA is a metric used by the Company's management to measure operating performance. Adjusted EBITDA represents the Company's operating profit, excluding depreciation and amortisation, for the relevant period. Adjusted EBITDA is not a standard measure under K-IFRS and should not be considered in isolation or construed as an alternative to cash flows, operating profit, net income or any other measure of the Company's operating performance, liquidity, profitability or cash flows generated by operating, investing or financing activities. Adjusted EBITDA has been presented herein because the Company believes Adjusted EBITDA is a useful supplement to cash flow data as a measure of its performance and its ability to generate cash flows from operations to cover debt service and taxes. The Company's Adjusted EBITDA presented herein may not be comparable to similarly titled measures presented by other companies, because not all use the same definition of Adjusted EBITDA.

A reconciliation of the Company's operating profit to Adjusted EBITDA is as follows:

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	2018[(2)]	2019[(2)(3)]	2019[(2)(3)]	2020[(2)(3)]
			(In billions of Won)		
Operating profit	₩165	₩ 73	₩207	₩ 68	₩186
Depreciation	61	68	139	66	80
Amortisation	69	67	80	38	41
Adjusted EBITDA[(1)]	₩295	₩208	₩426	₩172	₩307

(2) The amounts for 2018, 2019 and the six months ended June 30, 2019 and 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(3) The amounts for 2019 and the six months ended June 30, 2019 and 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

Investing in the Bonds involves risks and uncertainties. Prospective purchasers of the Bonds are advised to review carefully all of the information contained elsewhere in this offering circular and should consider, in particular, the following risk factors before purchasing the Bonds. The risks described below are not the only ones that may be relevant to the Issuer, the trading price of the Bonds or the Shares.

RISKS RELATING TO THE COMPANY'S BUSINESS

If the Company fails to retain existing users, add new users or maintain or increase the level of engagement of the user base of its online platforms, its business and performance may be adversely affected.

The Company's business is dependent on its ability to attract and retain active users and derive revenue from user traffic, and the size of its active user base and the level of its engagement are critical to its success. The Company currently generates a substantial majority of its revenue in Korea and will likely continue to do so in the foreseeable future. Accordingly, the Company's financial performance has been and will continue to be significantly determined by its success in securing and engaging active users in Korea. A number of providers of Internet portal services, mobile applications and online services that achieved early popularity have seen the size of their user bases or levels of engagement subsequently decline, in some cases precipitously. If the Company fails to develop or provide products and services that are compatible with current and future mobile devices and technologies popular in Korea, or if the products and services it develops or provides are not widely accepted and used by Korean mobile or Internet users, the Company may not be able to attract or retain users or otherwise maintain or increase the frequency, duration or level of their engagement, which may render its products and services less attractive.

The Company's user retention, growth or engagement levels could also be negatively affected if:

- It is unable to continue providing a compelling, convenient and intuitive user experience and environment, particularly relating to the quality, volume, design and layout of the content that it offers through its platforms;
- it fails to maintain its brand image or its reputation is damaged;
- it is unable to make new or upgraded products and services available in a timely and reliable manner;
- it fails to provide adequate and satisfactory customer service to users or advertisers or maintain relationships with key business partners such as mobile and PC game developers and publishers, content providers and online retailers;
- adverse changes to its products or services are mandated by legislation, regulatory authorities or legal proceedings;
- user concerns increase in relation to privacy and information sharing, safety or security;
- technical or other problems prevent it from delivering its products and services in a rapid and reliable manner or otherwise negatively affect user experience; or
- users increasingly engage with other competing products or services, particularly alternative communication tools or information or entertainment channels.

If the Company fails to retain existing users, add new users or maintain or increase the level of engagement of the user base of its online platforms, its business, financial condition and results of operations may be adversely affected.

The Company operates in a rapidly evolving environment and may not be able to launch new products and services in a timely and cost-effective manner, and any new products and services it develops or provides may expose it to new risks.

The Company operates in highly competitive industries characterised by rapidly changing consumer demand, evolving industry and regulatory standards and continual improvements in product and service features. Rapidly evolving user preferences may lead to certain products and services becoming less competitive, or even obsolete. Accordingly, the Company's success depends greatly on its ability to anticipate and respond to emerging user demand and market trends by ensuring continuing and timely development of new, as well as enhancements to the quality and user experience of existing, products and services. For example, in recent years, users' preference in terms of accessing online services and content, including games, music, videos, shopping and news, has shifted from PCs to mobile and other connected devices, leading to declining user growth and traffic for PC-based services and the need to develop increasingly sophisticated services and content, advertising models and payment systems for mobile applications. In order to respond to changes in market preferences and demands, the Company may develop and introduce new products and services, including in areas where it has little or no prior development or operating experience. The Company may continue to invest in product and service development and enhancement, but there is no guarantee that these efforts will be operationally or financially successful.

Some of the Company's strategic initiatives may not immediately generate revenue but may enhance its attractiveness to users, advertisers and business partners as well as contribute to increasing engagement of its user base. The Company's new products and services may bring it into contact, directly or indirectly, with entities that are not within its traditional customer or supplier base or result in competition with entities that are its existing business partners. Such business activities may expose the Company to new risks, including additional regulatory scrutiny as well as credit-related and other operational risks. There can be no assurance that the Company will succeed in developing new or enhanced products and services that eventually become widely accepted, or that it will be able to timely release products and services that are commercially viable. The Company's inability to do so would have an adverse impact on its business, financial condition and results of operations.

The Company operates in a highly competitive market, and its failure to compete successfully could adversely affect its business and performance.

The Company faces significant competition in almost every aspect of its business. The Company primarily competes for the time, attention and spending of its users with providers of other forms of mobile, online and in-home communication, entertainment and information services. The Company faces competition from mobile telecommunications companies, game companies, e-commerce companies, music and video service companies, financial service companies and other Internet-related companies that offer products and services that may compete with specific features of the Company's products and services, including those offered through its platforms using the Company's Kakao, Daum and Melon brands. In particular, the Company competes directly with other major Korean Internet portal services, such as Naver, to provide comprehensive mobile and online services to users. In addition, the Company competes with international competitors, such as Facebook and Google, which offer a wide range of information and communication services and products as well as online advertising services. Furthermore, the Company competes with offline and online media and advertising businesses for a share of advertisers' budgets and in the development of tools and systems for managing and optimising advertising campaigns.

There is intense competition for users, traffic and advertisers in the Korean market for Internet portals and related services, as a result of which the Company has historically experienced, and may continue to experience, difficulty in maintaining or increasing the market share and revenue of its Daum portal-related services. In addition, although the Company operates the leading mobile messaging service in Korea, the mobile messaging markets outside Korea are dominated by various other companies, many of which have greater financial resources and substantially larger user bases. For example, the Kakao Talk service faces competition from other well-established mobile messaging services, such as Facebook's Whatsapp,

Tencent's WeChat, Naver's LINE Messenger and Telegram. As Kakao Talk serves as the central entry point through which the Company introduces many of its users to its mobile service offerings, a decline in the popularity of Kakao Talk (and the related strength of the "Kakao" brand) due to competition from other mobile messaging service providers or otherwise may adversely affect the competitiveness of its platforms as well as other products and services, as well as its overall competitive position in Korea and elsewhere. Competition in the mobile game market in Korea is also intense, and it may become more challenging for the Company to retain existing users and attract new users as competition from other online game operators, based in Korea as well as overseas, is likely to increase in the future. In addition, the Company's Kakao Friends merchandising business also faces fierce competition from other companies that own and utilise popular character intellectual property based in Korea as well as overseas.

In the Company's online music services business, the principal competitors of the Melon online music service include YouTube Music, Genie, FLO, Bugs! and VIBE. Melon also competes with illegal online music content channels, such as unauthorised peer-to-peer file-sharing websites, due to music piracy. In the Company's music content distribution business, the principal competitors of Kakao M are Genie Music and Dreamus Company, which are owned by KT Corporation ("KT") and SK Telecom Co., Ltd. ("SK Telecom"), respectively. In the Company's content production business, its production companies compete mainly with other production companies in Korea in signing and managing recording artists, as well as actors and other entertainment industry personnel, and in producing and marketing music and video content to distributors. In the Company's web-comic and web-novel content distribution business, the principal competitor of Kakao Page and Daum Webtoon is Naver Webtoon.

Competition relating to the Company's fintech and mobility services is also intense as a growing number of new and existing companies seek to enter or expand into such areas. The principal competitors of Kakao Pay include Samsung Pay, Naver Pay and Toss, while the principal competitors of Kakao T include T map Taxi and Uber.

The Company's competitors in each of its business areas may develop products or services that are similar to the Company's or that achieve greater market acceptance, may undertake more far-reaching and successful product or service development efforts or marketing campaigns, or may adopt more aggressive pricing policies. Global scale, financial or technological strength, business affiliations or other advantages may allow the Company's competitors to respond more effectively than it to the rapidly evolving environment in the mobile and Internet industries, including industry consolidation that may result in enhanced capabilities of its competitors. In addition, the Company's business partners that are also its competitors may use information shared by its users through its platforms, including Kakao Talk, in order to develop products or services that compete with the Company's. Certain of the Company's competitors could also use strong positions in one or more segments or markets to gain competitive advantages over it in areas where the Company operates, by integrating competing mobile applications or features into products or services they control such as social networking services or mobile operating systems for smartphones and tablets; by making strategic acquisitions; or by making access to the Company's products and services more difficult. Furthermore, as the Company introduces new products and services and its existing offerings evolve, and as other companies introduce new products and services, the Company may become subject to additional competition. If the Company fails to compete successfully, its user numbers, traffic and revenue could decrease, which may negatively affect its business, financial condition and results of operations.

Many of the products and services that the Company currently offers are free, and the Company may not be successful in its efforts to monetise its products and services.

The Company's ability to successfully monetise its user base and its user base's engagement is critical to its business and financial performance. Many of the products and services that the Company currently offers are free. For example, the mobile messaging services of Kakao Talk, certain taxi services of Kakao T, the Company's mobile transportation application, as well as a majority of the Daum portal-related services, can currently be used free of charge by users. In addition, most of the mobile games that the Company currently offers are free to play, and for such games, the Company is only able to generate

revenue when players purchase in-game items that enhance or accelerate game play or augment or customise a particular player's experience. Such item-based revenue model for mobile games requires the Company to design and introduce games and ongoing enhancements that incentivise players not only to spend time playing its games, but also to purchase in-game items. A relatively small portion of players account for a large portion of the Company's mobile games revenue. Accordingly, the Company must constantly seek new ways to convert non-paying players into paying players and attract and retain paying players.

The Company may seek to increase revenue by selectively introducing commissions and other charges and adding advertising channels with respect to existing products and services that are currently offered for free, as well as develop new revenue-generating products and services. However, there is no guarantee that the Company's efforts to further monetise its products and services will be successful in generating significant new revenue or profits. Furthermore, the Company's monetisation efforts could have a negative effect on user engagement and user base growth if such efforts discourage users from using its products and services. In addition, the Company's competitors may introduce new revenue models in the future, and if such new revenue models are perceived as offering a better value proposition to users than the models that the Company currently uses or implements in the future, customers may switch to competitors' products and services. The Company may be required to expend significant time and resources to develop and launch new revenue models, and it may be unable to launch them in a timely or cost-effective manner, or at all. If the Company's monetisation efforts are not as successful as it anticipates, the Company may not be able to maintain or grow its revenue, and its business, financial condition and results of operations could be adversely affected.

The Company's quarterly financial results may be subject to significant fluctuations and may not meet its or market expectations.

The Company's quarterly financial results have fluctuated in the past and are likely to fluctuate in the future. As a result, you should not rely upon the Company's past quarterly financial results as indicators of future performance. You should also take into account the risks and uncertainties frequently encountered by companies in rapidly evolving high-technology industries. The Company's financial results in any given quarter or fiscal period can be influenced by numerous factors occurring in a particular period, many of which are difficult to predict or are outside of its control, including:

- its ability to attract and retain users, advertisers and business partners;
- the development and introduction of new products or services by the Company or its competitors;
- changes in revenue sources as well as adjustments in pricing models and fees charged to users and advertisers;
- increases in marketing, sales and other operating expenses that the Company may incur to grow and expand its operations and to remain competitive;
- seasonal fluctuations in spending by its advertisers, especially in Korea where advertising spending is traditionally stronger in the second and fourth quarters;
- impairment and write-offs of intangible assets, including goodwill, as well as its investments;
- non-recurring transactions, including mergers, acquisitions, investments and divestments, and related accounting and tax implications therefrom;
- unforeseen contingencies, such as adverse litigation judgments, settlements or other litigation-related costs, as well as regulatory penalties;

- fluctuations in currency exchange rates and changes in the proportion of the Company's revenue and expenses denominated in foreign currencies; and

- changes in business or macroeconomic conditions.

The Company may not be able to effectively manage its growth, which would harm its business and profitability.

The Company continues to experience rapid growth in its operations, both organically and through acquisitions, which will continue to place significant demands on its management and operational and financial infrastructure. The Company faces significant competition for talent, particularly software and systems engineers, developers and designers, from other Internet and high-growth technology companies as well as music entertainment companies, and it may not be able to hire new employees quickly enough to meet its needs. As the Company continues to grow, it is subject to the risks of over-hiring, overcompensating employees and over-expanding its operating infrastructure, and to the challenges of integrating, developing and motivating a rapidly growing employee base in Korea and elsewhere. As the organisation continues to grow and it is required to implement more complex organisational management structures, the Company may find it increasingly difficult to maintain the strengths of its corporate culture, including its ability to innovate and quickly develop and launch new products and services. If the Company fails to effectively manage its hiring needs and successfully integrate its new hires, employee morale, productivity and retention could suffer.

The Company also may continue to invest in infrastructure in order to enable it to provide its products and services rapidly and reliably to users around the world, including in countries where the Company may not achieve significant near-term monetisation. Continued growth could strain the Company's ability to maintain reliable service levels for its users, advertisers and business partners, develop and improve operational, financial, legal and management controls, and enhance reporting systems and procedures. Managing growth will require significant expenditures and allocation of valuable management resources. If the Company fails to achieve and maintain the necessary level of efficiency and productivity in its organisation as it grows, its business, financial condition and results of operations could be harmed.

The Company may fail to fully realise the anticipated benefits of its mergers, acquisitions, investments or other strategic alliances.

From time to time, the Company strategically acquires or invests in, or merges with, companies in relevant industries to capitalise on the combined strengths of its existing business and those of the target entities, including in terms of technologies, user base and cost efficiencies, as well as expand into new businesses or markets. For example, in October 2014, the Former Kakao merged with and into Daum Communications Co., Ltd. ("Daum Communications"), the Company's predecessor company. In March 2016, the Company acquired a controlling interest in LOEN Entertainment, a leading music entertainment company in Korea and the former operator of the Melon online music platform. LOEN Entertainment (or the Former Kakao M) changed its name to Kakao M in December 2017 and was merged with and into the Company in September 2018. The Company also makes investments in strategically important businesses. For example, as of June 30, 2020, the Company owned a 33.5% equity interest in Kakao Bank, the largest Internet-only bank in Korea in terms of asset size, which was launched in July 2017 by a consortium including the Company, Korea Investment Holdings Co., Ltd., Kookmin Bank, eBay and Tencent Holdings Limited. The Company also formed a strategic alliance to collaborate in the information and communication technologies sector with SK Telecom in October 2019 through the Company's acquisition of a 1.6% equity interest in SK Telecom and SK Telecom's acquisition of a 2.5% equity interest in the Company. The Company continually evaluates opportunities for, and engages in discussions with counterparties with respect to, potential merger, acquisition and investment transactions, and may announce or enter into significant transactions in the future.

The success of the Company's mergers, acquisitions, investments and strategic alliances will depend, in part, on its ability to identify and evaluate any material risks involved in any particular transaction and realise the potential growth opportunities and anticipated synergies therefrom. The realisation of anticipated benefits from such transactions may be impeded, delayed or reduced as a result of numerous factors, some of which are outside the Company's control, including the following:

- inability to maintain existing users, customers or suppliers of the merged, acquired or invested entity;
- difficulties in managing the integration of the merged, acquired or invested entity, including the harmonisation of information technology systems and corporate cultures, as well as in the implementation of a coordinated business plan, including challenges associated with the integration of product and service development and sales and marketing functions;
- inability to eliminate overlapping or redundant businesses, operations, systems, assets and personnel;
- unforeseen or latent risks or liabilities in the operations of the merged, acquired or invested entity;
- diversion of management time and focus from operating its business in order to address merger, acquisition, investment and integration challenges;
- difficulties in integrating management teams and retaining key personnel;
- the possibility of labour unrest;
- unanticipated write-offs or charges; and
- litigation or other claims arising in connection with the transaction, including claims from terminated employees, customers, suppliers, former shareholders or other third parties.

The Company carries significant amounts of intangible assets on its statement of financial position as a result of mergers, acquisitions and other investments that it has pursued in the past, including goodwill of Won 2,915 billion as of December 31, 2019. Under K-IFRS, goodwill and other intangible assets that have indefinite useful lives are tested for impairment annually by comparing their recoverable amount to their carrying amount. The Company also accounts for certain investments under the equity method and regularly evaluates its investment portfolio to test for impairment of investments.

If the Company faces difficulties in integrating or managing merged, acquired or invested entities, it may not achieve the anticipated benefits in connection with the mergers, acquisitions or investments, and may recognise impairment charges. For example, in 2019, in connection with the Former Kakao M's merger with and into the Company, the Company recognised impairment charges of Won 353 billion relating to goodwill and Won 52 billion relating to other intangible assets mainly in connection with its Melon brand and valuation of its user base.

If the Company fails to achieve the anticipated benefits, or if the costs of achieving them are substantially greater than it anticipates, its business, financial condition and results of operations may be adversely affected.

If the Company is not able to maintain and enhance its Kakao, Melon and Daum brands, or if events occur that damage its reputation and brands, relationships with its users, advertisers and business partners may be harmed.

The Company's Kakao, Melon and Daum brands are well recognised in Korea, and its Kakao Friends character business has earned significant brand recognition. The Company's new users are often referred by existing users, and maintaining and enhancing the Company's brands is critical to expanding its user base and obtaining new advertisers and business partners. Maintaining and enhancing the Company's brands will depend largely on its ability to continue to provide engaging and entertaining products and services, which it may not do successfully. The Company may introduce new products and services and changes to its existing products and services that users do not welcome, including new revenue generation models, which may negatively affect its brands.

The Company has in the past experienced, and may continue to experience, media, legislative or regulatory scrutiny of its decisions regarding user and data privacy or other issues, including measures to protect minors, which may adversely affect its reputation and brands. The Company may also fail to provide adequate customer service, which could erode confidence in its brands. The Company's brands may also be adversely affected by negative campaigns from its competitors, by negative publicity about the actions of users that are deemed to be hostile, illegal or inappropriate to other users, by third-party content providers acting inappropriately with respect to the Company's products and services, by users acting under false identities, by any regulatory developments designed to address such risks, or due to legal proceedings. Maintaining and enhancing the Company's brands may require it to make substantial investments, and these investments may not be successful. If the Company fails to successfully promote and maintain its brands or if it incurs excessive expenses in this effort, its business, financial condition and results of operations may be adversely affected.

The Company generates a significant portion of its revenue from advertising products and services, and the loss of advertisers, a reduction in spending by advertisers or failure to achieve market acceptance of new advertising products and services could adversely affect its business and performance.

A significant portion of the Company's revenue is generated from advertising products and services offered to clients through the Company's platform operations, including Kakao Talk and Daum portal. Demand for the Company's advertising products and services is primarily driven by the advertising spending levels of advertising clients in Korea, which are influenced by the level of overall economic activity and business cycles in Korea. Economic uncertainty, volatility in the financial markets or a contraction in the availability of credit may make it more difficult for businesses to meet their working capital requirements and could lead them to seek to change their commercial relationships with their vendors, including the Company. In the past, some advertisers have responded to weak economic and financial market conditions by reducing their advertising budgets, which include discretionary components that are relatively easier to reduce in the short term than other operating expenses. Unfavourable economic conditions in Korea due to the COVID-19 pandemic may have a negative impact on the general advertising spending level of Korean companies in 2020. See "– The recent global outbreak of COVID-19 may adversely affect the Company's business, financial condition or results of operations."

Furthermore, advertising services involving the Internet and mobile media, which are subject to continual development and integration of interactive media technologies, are relatively nascent and continue to evolve. As a result, the Company may need to incur significant development and acquisition costs or hire new personnel in order to keep pace with new technology and market trends in Internet and mobile advertising. In addition, some advertisers may view the Company's existing or new advertising products and services as experimental or unproven. If the Company fails to develop and introduce compelling new advertising products and services on a timely and cost-effective basis, the market acceptance of its advertising products and services may decrease and the Company may not be able to attract advertisers.

As is customary in the industry, the Company generally does not have exclusive or long-term agreements with its advertisers. Many advertisers spend only a relatively small portion of their overall advertising budget with the Company. Advertisers may reduce or discontinue their use of the Company's advertising products and services, or they may reduce the prices they are willing to pay for such products and services, if the Company does not deliver advertisements and other commercial content in an effective manner, or if they do not believe that their investment in the Company's advertising products and services will generate a sufficient return relative to alternative methods of advertising. The attractiveness of the Company's advertising products and services may decline due to a variety of factors, including:

- decreases in the number of its active users and their engagement levels;
- its inability to improve analytics and measurement solutions that demonstrate the value of advertising through the Company's platforms;
- its inability to adapt to the evolving online and mobile advertising market and create new products or services that sustain or increase the value of advertising with the Company;
- product or service changes it may make that reduce the frequency or relative prominence of advertisements and other commercial content delivered through its advertising products and services;
- its inability to increase the relevance or delivery of targeted ads to users;
- the degree to which users decline or opt out of certain types of targeted ads;
- the impact of new technologies that could block or obscure the display of some types of advertisements and other commercial content;
- loss of advertising market share to its competitors;
- adverse regulatory developments relating to online or mobile advertising;
- changes in the way it prices its advertising products and services; and
- unfavourable macroeconomic conditions or conditions in the advertising industry in general.

These or other developments could result in reduced demand for and revenue from the Company's advertising products and services, which may negatively affect its business, financial condition and results of operations.

The recent global outbreak of COVID-19 may adversely affect the Company's business, financial condition or results of operations.

COVID-19, an infectious disease caused by severe acute respiratory syndrome coronavirus 2, has spread globally and was declared a "pandemic" by the World Health Organization on March 11, 2020. The global outbreak of COVID-19 has led to global economic and financial disruptions and has adversely affected the Company's business operations in recent months. For example, starting from late February, in light of the Government's recommendation for social distancing, the Company has implemented remote work arrangements for its employees on a rotation basis. While such temporary arrangements may not have had a material adverse impact on the Company's business, a prolonged outbreak of COVID-19 may result in further disruption in the normal operations of its business, including implementation of further work arrangements requiring employees to work remotely and/or temporary closures of the Company's stores, which may lead to a reduction in labour productivity.

Other risks associated with a prolonged outbreak of COVID-19 may include:

- an increase in unemployment among, and/or a decrease in disposable income of, the Company's users, who may choose to decrease their spending levels, which in turn may decrease demand for some of the Company's products and services;

- disruptions in operations, and/or a decrease in the demand for products and services, of advertisers, which in turn may decrease such advertisers' demand for the Company's advertising services and products;

- service disruptions, outages and performance problems due to capacity constraints caused by an overwhelming number of people accessing the Company's services simultaneously;

- unstable global and Korean financial markets, which may adversely affect the Company's ability to meet capital funding needs on a timely and cost-effective basis;

- a decrease in the fair value of the Company's investments in companies that may be adversely affected by the pandemic; and

- disruption in the normal operations of the Company's business resulting from the contraction of the disease by its employees or customers, which may necessitate employees to be quarantined and/or the Company's offices or stores to be temporarily shut down.

It is not possible to predict the duration or full magnitude of harm from COVID-19. In the event that COVID-19 or other types of widespread infectious diseases cannot be effectively and timely contained, the Company's business, financial condition and results of operations may be adversely affected.

The continued success of the Company's online games business depends to a large extent on its ability to continue to publish and offer new games and enhance its existing games that attract and retain a significant number of players.

The Company operates its mobile and PC games business through its subsidiary Kakao Games Corp., in which it owns a 46.1% interest. See "The Company – Products and Services – Content Operations – Game Business." The Company's games span a variety of genres, including action role-playing games ("RPGs"), strategy role-playing games, massively multiplayer online role-playing games ("MMORPGs"), casual games, shooting games, simulation games and miscellaneous other games.

The continued success of the Company's games business depends to a large extent on its ability to maintain a robust pipeline of new games and game updates, including the internal development or procurement from third-party game developers of entertaining and engaging new online games for publishing in appropriate markets, and to launch them in a timely manner so that they achieve significant popularity. It is difficult to anticipate player preferences or demand, particularly as the Company launches new online games in emerging genres or previously untapped markets. The Company may not be able to anticipate changing consumer tastes and preferences, adopt new technologies, attract, retain and motivate talented online game developers and effectively execute its games business strategy. The launch and continued publishing of a new game often require significant acquisition or development fees for third-party developers, marketing and sales expenses and server hosting-related fees. In addition, it is possible that players could lose interest in the types of online games published by the Company over time due to a variety of reasons, including the emergence of new formats that players find more engaging, changes in player tastes and preferences, increased popularity of other game titles, lack of sustained interest or loss of interest in particular games or genres of games and the failure to introduce successful enhancements on an ongoing basis. The Company's newly-launched games could also cause its players to reduce their playing time and purchases of in-game items in existing games. If the Company fails to offer attractive in-game items, make unpopular changes to existing in-game items or offer games that do not encourage purchases of in-game items or upgrades of game versions, or if the Company fails to successfully launch and publish new games that attract and retain a significant number of players, the Company's games revenue will decrease, and its business, financial condition and results of operations could be materially harmed.

The Company relies on a variety of third-party content providers for its content operations.

The Company aims to provide its users with an expanding array of products and services that enhance their quality of life by enabling them to conduct more aspects of their daily affairs online, including by using their mobile and other connected devices and PCs at their convenience. Among other things, the Company offers users the ability to access entertainment, search content and shop online, and the breadth and variety of the digital content offered through its platforms are key elements in maintaining and increasing the size and level of engagement of its user base. The Company relies on a number of third-party content providers to supply a substantial amount of the digital content and products offered through its platforms. For example:

- third-party game developers and publishers supply some of the games offered through the Kakao Game and Daum Game platforms;

- third-party content providers supply web-comics and web-novels offered through the Kakao Page, Daum Webtoon and Piccoma platforms and video content made available through the Kakao Page and Kakao TV platforms; and

- online retailers and other merchants supply products offered through Kakao Talk Gift Shop and Kakao Talk Store and the Kakao Makers, Kakao Style and Shopping How platforms.

Accordingly, the Company's business is dependent upon its commercial relationships with business partners, and the loss of key relationships could result in the loss of its exclusive and non-exclusive rights to distribute content or products through the Company's platforms. There can be no assurance that the Company's existing relationships with its business partners will result in successful service offerings with high user traffic on its platforms, that the Company will be able to sustain such relationships in the long term, or that it will be able to enter into new relationships with additional third-party business partners, on commercially acceptable terms, or at all. For example, certain leading third-party mobile game publishers in Korea that previously relied on the Company to distribute their games through the Kakao Game platform have decreased their reliance in recent years and distribute and market many of their popular games directly to end-users. In addition, a substantial majority of the content and products supplied to the Company by its third-party business partners are supplied on a non-exclusive basis and are also available to other mobile and Internet service providers. If such other service providers offer the same or similar content or products in a superior manner, the user base and traffic on the Company's platforms could decrease.

The Company's ability to enter into additional business relationships will depend on the availability of suitable business partners on commercially acceptable terms and its ability to attract these partners. The benefits of a business relationship may take considerable time to realise, and the Company cannot be certain that any particular relationship will produce its intended benefits. The Company's products and services resulting from such business relationships may fail to gain acceptance among users, and the Company may not be able to maintain satisfactory relationships with its partners. Any of such developments could adversely affect the Company's business, financial condition and results of operations.

The Company relies on third parties for various aspects of its music entertainment business.

Through its Melon online music platform and Kakao M, a leading entertainment company in Korea in which it held a 78.2% interest as of June 30, 2020, the Company offers a wide range of services that cover key components of the entertainment industry value chain, including online music services, entertainment content distribution and production and artist management. The Company relies on content providers and other third parties for various aspects of its music entertainment business, and its failure to maintain or expand business relationships with such third parties may adversely impact its business, financial condition and results of operations.

With respect to the Melon online music service, the breadth and variety of Melon's music content offerings are critical to maintaining and increasing the size and level of engagement of the Melon online music platform user base. The Company relies on a number of third parties (in addition to its music content distribution operations) to supply music content in order to make the Melon online music service more attractive to users. There is no guarantee that the Company's existing relationships with third-party music content providers will be maintained or result in sustainable business partnerships, successful service offerings and an acceptable level of user traffic on the Melon online music platform. Furthermore, most of such third-party music content is also supplied by these music content providers to, and available from, other music streaming and downloading service companies. If other online music streaming and downloading service providers present the same or similar content in a superior manner, the Company's user base and traffic for the Melon online music platform could decrease.

In connection with Kakao M's music content distribution business, the Company enters into arrangements with various production companies (including those that are a part of its music content production operations) for the online and offline distribution of music content. The Company's music content distribution business is dependent upon its commercial relationships with Korea's leading music production companies, and the loss of key relationships could result in the loss of its rights to distribute recordings of artists represented by such production companies. There is no guarantee that the Company will be able to maintain its existing distribution relationships with music production companies, or enter into new relationships with additional music production companies, on commercially acceptable terms, or at all.

Kakao M's music content production business is dependent on identifying promising recording artists and entering into management contracts with them for their training and development, collaborating with such artists to produce audio and video recordings of their work, and marketing and selling such recordings to music distributors. The Company also provides general management services for recording and other artists, including in respect of advertising, merchandising, sponsorships, concerts, films, television and other promotional activities. Accordingly, the Company's competitive position as a music producer is dependent on its ability to continue to attract and develop artists whose work can achieve a high degree of mass appeal. The Company's music content production business may be adversely affected if it is unable to identify and retain such artists under terms that are economically attractive to it.

There is no guarantee that the Company's revenue from the sales of an artist's recordings and its management activities with respect to the artist will be sufficient to cover the various costs incurred by the Company with respect to the artist, even if the artist is successful. In addition, the Company's expected revenue stream with respect to an artist it has identified and trained may be cut short as a result of a sudden decline in the artist's popularity, an interruption to his or her career due to unforeseen circumstances or the termination by the artist of his or her contract prior to its expiration.

The Company may continue to expand its operations geographically into markets in which it has limited or no operating experience, which may expose it to new or increased risks.

The Company has a sizeable user base for certain mobile-based content platform and distribution services, including web-comics and games, in certain overseas markets, including Japan, Southeast Asia, China, Europe and the United States. The Company may continue to expand its operations geographically into markets outside of Korea, including by making some of its mobile service offerings available in different languages. However, the expansion of operations abroad may be difficult due to the presence of established competitors in such markets. In addition, overseas expansion and managing operations on a global scale will require considerable management resources and attention and will be subject to the particular challenges of supporting a growing business in an environment of multiple languages, cultures, customs, legal and regulatory systems and commercial markets. Global expansion may require the Company to make significant expenditures for research and development and marketing and sales, and there can be no assurance that it will successfully achieve its overseas growth objectives.

Operating globally will subject the Company to new risks and may increase risks that it currently faces, including those associated with:

- providing an engaging user experience while operating in different languages and cultures, and localising products, services, content and features to ensure that they are culturally attuned to the markets where they are offered;

- increased competition from mobile and Internet services and music entertainment companies that have strong positions globally or in particular markets and may continue to seek to expand their geographic footprint;

- different and potentially lower levels of user growth, user engagement and demand for online advertising in new and emerging geographies, resulting in greater difficulty in monetising products and services;

- recruiting and retaining talented and capable employees in foreign countries and maintaining corporate culture across all offices;

- different levels of telecommunications infrastructure and technological standards in developing countries that may create challenges in offering products and services;

- developing or integrating local payment processing systems;

- compliance with applicable foreign laws and regulations, including laws and regulations with respect to economic sanctions and export controls, anti-bribery, privacy and consumer protection, as well as Korean laws and regulations that may conflict with local customs and practices in some jurisdictions in which the Company operates, and the risk of penalties if practices are deemed not to be in compliance;

- political, social and economic instability in some countries;

- double taxation of overseas earnings and potentially adverse tax consequences due to the tax laws of Korea or other jurisdictions in which the Company operates; and

- higher costs of conducting business globally, including increased labour, accounting, travel, infrastructure and legal compliance costs.

It is also possible that governments or relevant regulators of one or more countries may seek to censor content offered through the Company's platforms in their country, restrict access to products and services in their country entirely, or impose other restrictions that may affect the accessibility of products and services in their country for an extended period of time or indefinitely. In the event that access to the Company's products and services is restricted, in whole or in part, in one or more countries, the Company's ability to increase its user base and user engagement may be adversely affected and it may not be able to grow its revenue as anticipated in such country. If the Company is unable to manage the complexity of its increasingly global operations successfully, its business, financial condition and results of operations could be adversely affected.

The Company's intellectual property rights are valuable, and its inability to protect them could reduce the value of its products, services and brands.

The Company's trade secrets, trademarks, copyrights, patents and other intellectual property rights are important assets. The Company relies on a combination of confidentiality and license agreements with its employees, consultants and third parties with whom it has relationships, as well as trademark, trade dress, domain name, copyright, trade secret and patent laws, to protect its brands and other intellectual property rights. However, various events outside of its control may pose a threat to the Company's intellectual

property rights, as well as to its products, services and technologies. For example, the Company may fail to obtain effective intellectual property protection, or effective intellectual property protection may not be available, in every country in which its products and services are available. Also, the efforts the Company has taken to protect its intellectual property rights may not be sufficient or effective, and any of its intellectual property rights may be challenged, which could result in them being narrowed in scope or declared invalid or unenforceable. There can be no assurance that the Company's intellectual property rights will be sufficient to protect against others offering products or services that are substantially similar to the Company's and compete with its business.

The Company also relies on non-patented proprietary information and technology, such as trade secrets, confidential information, know-how and technical information. While in certain cases the Company has agreements in place with employees and third parties that place restrictions on the use and disclosure of such intellectual property, these agreements may be breached, or such intellectual property may otherwise be disclosed or become known to its competitors, which could cause the Company to lose competitive advantages resulting from such intellectual property. The Company also pursues registration of trademarks and domain names in Korea and in many jurisdictions outside of Korea. Effective protection of trademarks, domain names and other intellectual property is expensive and difficult to maintain, both in terms of application and registration costs as well as the costs of defending and enforcing those rights.

The Company is party to numerous agreements that grant licenses to third parties to use its intellectual property, including trademarks. For example, many third parties distribute their content through the Company's products and services, embed the Company's content in their products and services or make use of its trademarks in connection with their products and services. If the licensees of the Company's trademarks are not using them properly, the Company's ability to protect its trademarks may become limited and such trademarks could ultimately be declared invalid or unenforceable. There can be no assurance that the Company will be able to protect against the unauthorised use of its brands, trademarks or other intellectual property. There is also a risk that one or more of its trademarks could become generic, which could result in them being declared invalid or unenforceable.

The Company also seeks to obtain patent protection for some of its technology and has filed various applications in Korea and elsewhere for protection of certain aspects of its intellectual property and currently holds a number of issued patents in multiple jurisdictions. The Company may be unable to obtain patent or trademark protection for its technologies and brands, and its existing patents and trademarks, and any patents or trademarks that may be issued in the future, may not provide it with competitive advantages or distinguish its products and services from those of its competitors. In addition, any patents and trademarks may be contested, circumvented, or found unenforceable or invalid, and the Company may not be able to prevent third parties from infringing, diluting or otherwise violating them. Significant infringements of the Company's intellectual property rights, and limitations on its ability to assert its intellectual property rights against others, could harm its ability to compete and its business, financial condition and results of operations could be adversely affected.

If the Company's security measures are breached, or if its products and services are subject to attacks that disrupt or deny the ability of users to access its products and services, its reputation, business and performance may be harmed.

The Company's products and services involve the storage and transmission of large amounts of users' and advertisers' confidential information, including credit card, bank account and other financial information, and security breaches expose it to a risk of loss of such information, which may lead to improper use or disclosure of such information, ensuing litigation and regulatory investigations, potential liability and regulatory penalties, any of which could harm its reputation and adversely affect its business. Although there has been no material instance where an unauthorised party was able to obtain access to the Company's data or its users' or advertisers' data, there can be no assurance that it will not be vulnerable to cyberattacks in the future. The Company's security measures may also be breached due to employee error, malfeasance or other reasons. Given the rapid development and scope of the products and services the Company offers, including those developed in conjunction with third parties, instituting appropriate

access controls and safeguards across all its offerings is challenging. Furthermore, outside parties may attempt to fraudulently induce employees, users or advertisers to disclose sensitive information in order to gain access to the Company's data or its users' or advertisers' data or accounts, or may otherwise obtain access to such data or accounts. In addition, the Company's business partners may store information provided by the Company's users in the course of using its products and services. If these third parties fail to adopt or adhere to adequate data security practices or fail to comply with the Company's terms and policies, or in the event of a breach of their networks, data of the Company's users may be improperly accessed or disclosed.

Since the Company's users and advertisers may use their accounts to establish and maintain online identities, unauthorised communication from users' accounts that have been compromised may damage their reputation and brands as well as the Company's. Any such breach or unauthorised access could result in significant legal and financial exposure, damage to the Company's reputation and a loss of confidence in the security of its products and services. Because the techniques used to obtain unauthorised access, disable or degrade service or sabotage systems change frequently and often are not recognised until launched against a target, the Company may be unable to anticipate these techniques or to implement adequate preventive measures. If an actual or perceived breach of the Company's security occurs or the market perception of the effectiveness of its security measures is harmed, the Company could lose users and advertisers and may incur significant financial exposure, including legal claims and regulatory penalties, which could have an adverse effect on its business, financial condition and results of operations.

Privacy concerns relating to the Company's technology could damage its reputation and deter current and potential users from using its products and services.

From time to time, concerns have been expressed about whether the Company's products and services or processes compromise the privacy of users and others. Concerns about its practices with regard to the collection, use, disclosure or security of personal information or other privacy related matters, even if unfounded, could damage the Company's reputation and adversely affect its operating results. Regulatory authorities around the world are considering a number of legislative and regulatory proposals concerning data protection, including measures to ensure that the Company's encryption of users' data does not hinder law enforcement agencies' access to that data. In addition, the interpretation and application of consumer and data protection laws in Korea and elsewhere are often uncertain and subject to change. It is possible that these laws may be interpreted and applied in a manner that is inconsistent with the Company's data practices. If so, in addition to the possibility of regulatory penalties, this could result in an order requiring that the Company changes its data practices, which could have an adverse effect on its business, financial condition and results of operations. Complying with these various laws could cause the Company to incur substantial costs or require it to change its business practices in a manner adverse to its business.

The Company may become party to intellectual property rights claims in the future that may be expensive and time consuming to defend, and such claims, if resolved adversely, could have a significant impact on its business.

Technology companies own large numbers of patents, copyrights, trademarks, licenses and trade secrets, and frequently enter into litigation based on allegations of infringement, misappropriation or other violations of intellectual property or other rights. Many such companies, including many of the Company's competitors, have substantially larger intellectual property portfolios than it does, which could make the Company a target for litigation, as it may not be able to assert counterclaims against parties that sue it for intellectual property infringement. In addition, various "non-practicing entities" that own intellectual property rights often attempt to aggressively assert claims in order to extract payments from companies like the Company. From time to time, the Company has received, and may receive in the future, claims from third parties which allege that it has infringed upon their intellectual property rights. Furthermore, from time to time, the Company may introduce or acquire new products, services or content, including in areas where it currently does not compete, which could increase its exposure to intellectual property claims from competitors and non-practicing entities. Some of the Company's agreements with advertisers and business partners require it to indemnify them for certain intellectual property claims against them,

which could require it to incur considerable costs in defending such claims, and may require it to pay significant damages in the event of an adverse ruling or settlement. Such advertisers and business partners may also discontinue use of the Company's products, services and technologies as a result of injunctions or other reasons, which could result in loss of revenue and adversely impact its business.

As the Company faces increasing competition and gains an increasingly high profile, the number and scope of intellectual property claims against it may grow. There may be intellectual property or other rights held by others, including issued or pending patents, that cover significant aspects of its products and services, and the Company cannot be certain that it is not infringing or violating, and has not infringed or violated, any third-party intellectual property rights or that it will not be held to have done so or be accused of doing so in the future. Any claim or litigation alleging that the Company has infringed or otherwise violated intellectual property or other rights of third parties, with or without merit, and whether or not settled out of court or determined in its favour, could be time consuming and costly to address and resolve, and could divert the time and attention of its management and technical personnel. Some of the Company's competitors have substantially greater resources than it does and are able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than it may be able to. The outcome of any litigation is inherently uncertain, and there can be no assurance that favourable final outcomes will be obtained. In addition, plaintiffs may seek, and the Company may become subject to, preliminary or provisional rulings in the course of any such litigation, including potential preliminary injunctions requiring it to cease some or all of its operations. If any litigation to which the Company is a party is resolved adversely, it may be subject to an unfavourable judgment that may not be reversed upon appeal. The terms of any such judgment or any settlement may require the Company to cease some or all of its operations, pay substantial amounts to the other party or seek licensing arrangements. If the Company is required or chooses to enter into royalty or licensing arrangements, such arrangements may not be available on commercially reasonable terms, or at all, and may significantly increase its operating costs and expenses. The development or procurement of alternative non-infringing technology could require significant effort and expense or may not be feasible. Accordingly, an unfavourable resolution of any intellectual property rights claims could adversely affect the Company's business, financial condition and results of operations.

The Company's business and performance may be harmed by a disruption in its services due to failures in or changes to its systems or those of third parties, or by its failure to timely and effectively expand and upgrade its technology and infrastructure.

The Company's reputation and ability to attract, retain, and serve its users, advertisers and business partners are dependent in large part upon the reliable performance of its products and services and the underlying technical infrastructure. The Company's systems may not be adequately designed with the necessary reliability and redundancy to avoid performance delays or outages that could be harmful to its business. The Company has experienced, and may in the future experience, service disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, human or software errors, hardware failure, capacity constraints due to an overwhelming number of people accessing its products and services simultaneously, computer viruses, denial of service, fraud and security attacks. The Company's technical infrastructure is also vulnerable to the risk of damage from natural and other disasters, such as floods, fires, earthquakes and typhoons, as well as from acts of terrorism and other criminal acts. The Company's products and services also incorporate software that is highly technical and complex. The Company's software has in the past contained, and may currently or in the future contain, undetected errors, bugs or vulnerabilities. Some errors in the Company's software code may only be discovered after the relevant product or service has been released.

As the number of the Company's users increases and as its users access, download, generate and transmit increasing volumes of content, including music, photos and videos, the Company may be required to expand and upgrade its technology and infrastructure to continue to reliably store, deliver and service such content. It may become increasingly difficult to maintain and improve the performance of the Company's products and services, especially during peak usage times, as products and services become more complex and user traffic increases. In addition, the Company cannot provide assurance that it will be able to expand

and upgrade its technology and infrastructure to meet user demand in a timely manner, or on favourable economic terms. If users are unable to readily access its products and services or access is disrupted, users may seek other service providers instead, and may not return to the Company's products and services or use its products and services as often in the future. This would negatively impact the Company's ability to attract users, advertisers and business partners as well as increase engagement of its users. The Company may continue to make significant investments to maintain and improve the capacity, capability and reliability of its technology and infrastructure. To the extent that the Company does not effectively address capacity constraints, upgrade its systems as needed or continually develop its technology and infrastructure to accommodate actual and anticipated changes in its users' needs, its business, financial condition and results of operations may be harmed.

In addition, the Company's products and services offered through its platforms depend on the ability of users to access mobile telecommunications services and the Internet. Currently, this access is provided by companies that have significant market power in the mobile and Internet access marketplaces, including mobile telecommunications companies, telephone, cable and broadband companies, government-owned service providers, device manufacturers and operating system providers, any of which could take actions that degrade, disrupt or increase the cost of user access to the Company's services, which would, in turn, negatively impact its business. Furthermore, the infrastructure, systems and services of these companies are subject to disruption or failure due to technical issues, capacity constraints, natural disasters and other events. As mobile devices and the Internet continue to experience growth in the number of users, frequency of use and amount of data transmitted, the mobile telecommunications and Internet infrastructure that users rely on may be unable to support the demands placed upon them. The disruption or failure of the operations of mobile telecommunications, Internet and other service providers that the Company's users rely on to access its products and services, even for a short period of time, could undermine users' confidence in and dependence on such products and services and, if prolonged, could adversely affect its business, financial condition and results of operations.

The Company's user growth and engagement on mobile and other connected devices and PCs, which are required to access and use most of its products and services, depend upon their effective operation with third-party mobile operating systems and web browsers.

The Company is dependent on the interoperability of its mobile and Internet applications with popular mobile operating systems, such as Android and iOS, as well as web browsers, such as those for Windows and Mac OS, that are developed and supplied by third parties. Any changes in such operating systems or web browsers that degrade the functionality of the Company's products or services or give preferential treatment to its competitors' products or services could adversely affect usage of such products and services. In addition, an expansion in the number of operating systems for which the Company is required to develop its products or services may result in an increase in operating expenses. In order to deliver high quality products and services, it is important that the Company's products and services work well with a range of widely used mobile operating systems and web browsers provided by third parties.

The Company may not be successful in developing or maintaining relationships with key participants in the information technology and mobile telecommunications industries or in developing products or services that operate effectively with mobile operating systems, web browsers, networks or standards. In the event that it becomes more difficult for users to access and use the Company's products and services, particularly on their mobile devices, the Company's user growth and user engagement could be harmed, and its business, financial condition and results of operations could be adversely affected.

The Company relies primarily on Apple App Store and Google Play as the channels for downloads of its mobile applications as well as processing of certain payments, and any deterioration in the Company's relationship with either of them may negatively impact its business.

The Company relies primarily on Apple App Store and Google Play as the channels for downloads of its mobile applications as well as the processing of payments for certain products and services offered through its platforms and will most likely continue to do so. Accordingly, maintaining good business relationships with Apple and Google is expected to be critical to the Company's continued success.

The operating policies of Apple and Google have an impact on the accessibility of the Company's mobile applications. In addition, the Company's pricing strategy for certain products and services is impacted by changes in the payment processing fees charged by Apple and Google. If the Company fails to maintain cooperative relationships with Apple or Google, its ability to continue to offer mobile applications or effect payment processing for certain products and services may be negatively impacted, which in turn could have an adverse effect on its business, financial condition and results of operations.

The listing or sale by merchants using the Company's e-commerce services of goods and services that allegedly infringe the intellectual property rights of rights owners, including pirated or counterfeit items, may harm its business.

The listing or sale through the Company's e-commerce services, including by online retailers or other merchants through Kakao Talk Gift Shop and Kakao Talk Stores and the Kakao Makers, Kakao Style or Shopping How platforms, of unlawful, counterfeit or stolen goods or unlawful services, or the sale of products or services in an unlawful manner, may result in allegations of civil or criminal liabilities for unlawful activities against the Company. Any such allegations relating to infringement of intellectual property rights, including but not limited to counterfeit items, may result in threatened and actual litigation from time to time by rights owners, and the Company may be required to pay substantial amounts in connection with resolving trademark and copyright claims. Such legal proceedings may also force the Company to modify its business practices in a manner that increases costs, lowers revenue, makes its products and services less convenient for users or requires it to spend substantial resources to take additional protective measures or discontinue certain service offerings in order to combat these practices. In addition, the Company may receive significant media attention relating to the listing or sale of illegal or counterfeit items, which could damage its reputation, diminish the value of its brands or make users reluctant to use its products and services.

The Company is subject to contingent liabilities, including those associated with litigation, regulatory proceedings and other disputes.

During the course of normal operations, the Company may become involved in legal and regulatory proceedings. The Company is subject to claims and actions from its customers, business partners, employees, regulatory authorities and other third parties, alleging operational concerns, nuisance, negligence or failure to comply with applicable laws and regulations. These claims, even if successfully disposed of without direct financial consequences, could have a material adverse effect on the Company's reputation and divert its management resources from more beneficial uses. While the final outcome of any of the claims or actions to which the Company is currently subject may not have a material adverse effect on it, there is no guarantee that this will be the case or that it will not be subject to significant future claims. Successful claims against the Company may result in substantial costs and business disruptions and adversely affect its business, financial condition and results of operations. See "The Company – Legal and Regulatory Proceedings."

In addition, the Company is exposed to other contingent liabilities, such as those pursuant to payment and performance guarantees it has provided to creditors and other third parties on behalf of its affiliates and business partners in the ordinary course of business. For a further description of the Company's commitments and contingencies, see Note 23 of the notes to its condensed consolidated interim financial statements as of June 30, 2020 and for the six month-periods ended June 30, 2020 and 2019 and Note 38

of the notes to its annual consolidated financial statements as of and for the years ended December 31, 2019 and 2018, appearing elsewhere in this offering circular. If such contingent liabilities materialise, the Company's business, financial condition and results of operations could be adversely affected.

Certain of the Company's user metrics are subject to inherent uncertainties in measurement, and real or perceived inaccuracies in such metrics may harm its reputation and negatively affect its business.

The Company uses internal data to calculate Kakao Talk's monthly active users and Melon's paying subscribers. These figures are based on the Company's estimates of its active user and paying subscriber base for the applicable period of measurement, and there are inherent challenges in measuring usage of its products and services across a large and growing mobile and online user base.

The Company regularly reviews and may adjust its processes for calculating its internal metrics to improve their accuracy. Its measures of user growth and user engagement may differ from estimates published by third parties or from similarly titled metrics of its competitors due to differences in calculation methodology. If advertisers, business partners or prospective investors do not perceive the Company's user metrics to be accurate representations of its user base or user engagement, or if material inaccuracies in the Company's user metrics are discovered, its reputation may be harmed, and business partners and advertisers may be less willing to allocate their budgets or resources to the Company's products and services.

Labour disruptions could affect the Company's results of operations.

The Company has a labour union which was formed in 2018. From time to time, the union and the Company's management negotiate and enter into new collective bargaining agreements, which was last entered into in June 2019 when a wage rate increase was negotiated. The Company has not experienced any work slowdowns, work stoppages or strikes. However, there can be no assurance that a work slowdown, work stoppage or strike will not occur, in particular prior to or upon the expiration of the Company's labour agreements. Work slowdowns, stoppages or other labour-related developments affecting the Company could have a material adverse effect on its business, financial condition and results of operations.

RISKS RELATING TO REGULATORY MATTERS

The Company's business is subject to complex and evolving laws and regulations.

The Company is subject to a variety of laws and regulations in Korea and elsewhere that involve matters central to its business, including privacy and data protection, rights of publicity, content and pricing regulation, advertising, protection of personal information, intellectual property, protection of minors, consumer protection, competition and taxation. For example, the Company is subject to regulation in Korea as an additional communications service provider under the Telecommunications Business Act, as a location-based service provider under the Act on Protection and Utilization of Location Information and as an electronic financial business operator under the Electronic Financial Transactions Act, while its advertising services are subject to regulation under the Act on Fair Labeling and Advertising. In addition, aspects of the Company's online music services are subject to regulation by the Ministry of Culture, Sports and Tourism, which establishes regulatory guidelines with respect to payments by online music service providers to music distributors (for the benefit of artists, producers and other music industry participants) of specified minimum royalty fees and profit-sharing fees for music downloaded or streamed by subscribers. See "Regulation – Regulation of the Company" for a summary of certain laws and regulations in Korea that are applicable to the Company.

Existing and new laws and regulations in Korea and elsewhere can be costly to comply with and can delay or impede the development of new products and services, result in negative publicity, significantly increase the Company's operating costs, require significant time and attention of management and technical personnel and subject it to inquiries or investigations, claims or other remedies, including fines

and demands that the Company modify or cease existing business practices. In addition, many of these laws and regulations are still evolving and could be interpreted or applied in ways that could limit the Company's business, particularly in the new and rapidly evolving industries in which it operates. The introduction of new services or products in Korea and the expansion of the Company's business to other countries may subject the Company to additional laws and regulations. For example, as part of its efforts to diversify the payment options available to its users, the Company launched Kakao Pay, a mobile payment service platform, in September 2014, which subjects it to a variety of laws and regulations governing money transmission, payment settlement, electronic funds transfers and anti-money laundering. In February 2020, Kakao Pay expanded its services to include consumer and corporate investment services through its consolidated subsidiary Kakao Pay Securities, which subjects the Company to the Financial Investment Services and Capital Markets Act (the "FSCMA"). Continually seeking ways to improve the Company's products and services may from time to time involve upgrades or changes in the technology and infrastructure supporting such products and services and could also result in greater regulation. If the Company is required to comply with amended, new or additional laws and regulations in Korea or elsewhere, its business could be affected in many ways and areas, including the following:

- the cost and general impact of compliance could be substantial, may require significant investments and organisational changes and may erode or eliminate the Company's pricing advantage over competitors and, potentially, its ability to compete effectively;

- compliance may require the Company to make certain fundamental and potentially detrimental changes to the products and services it offers and the way it conducts business in certain areas, including ceasing particular businesses or withdrawing from markets; and

- the Company may need to terminate or restructure partnerships and other commercial agreements.

From time to time, the Company receives formal and informal inquiries from governmental authorities and regulators regarding its compliance with laws and regulations. The Company may become subject to investigations, inquiries, actions and audits in Korea and other jurisdictions, particularly in the areas of privacy and data protection, as it continues to grow and expand its operations. Orders issued by, or inquiries or enforcement actions initiated by, governmental or regulatory authorities could cause it to incur substantial costs, expose it to unanticipated civil and criminal liability or regulatory penalties (including substantial monetary fines), or require it to change its business practices in a manner materially adverse to its business. Additionally, if third parties the Company works with, such as advertisers and business partners, violate applicable laws or the Company's policies, such violations may result in joint or secondary liability for it. Due to these and other factors, there is no guarantee that the laws and regulations to which the Company is or becomes subject will not have a material adverse effect on its business, financial condition or results of operations.

In addition, the Company's business may be affected from time to time by changes in laws and regulations applicable to operators of the telecommunications and Internet infrastructure through which users access the Company's products and services, including mobile telecommunications companies, telephone, cable and broadband companies and other Internet service providers. For example, in December 2017, the U.S. Federal Communications Commission issued a ruling and order reversing the "net neutrality" standards adopted in 2015 that were intended to prevent differential treatment of online content providers, in terms of access to service, access speeds and charging for preferential service, by Internet service providers in the United States. In the event that the Government were to similarly scale back or weaken the net neutrality standards currently applicable in Korea, Internet service providers may seek to block access to, or slow down access speeds for, the Company's products and services in favour of those of its competitors, or may seek to charge fees to it or its users for providing preferential access to its products and services, which could hurt its competitive position, reduce user demand for its products and services, increase its costs and adversely affect its business, financial condition and results of operations.

Transactions with the Company's subsidiaries, affiliates and other member companies of the Kakao Group are restricted under Korean fair trade regulations.

The Company and a group of companies affiliated with it were designated as a large business group on April 1, 2016 and as a business group subject to limitations on cross shareholding on May 16, 2019, by the Korea Fair Trade Commission. As a result, the Company's business relationships and transactions with its subsidiaries and affiliates within the Kakao Group are subject to ongoing scrutiny by the Korea Fair Trade Commission as to, among other things, whether such relationships and transactions constitute undue financial support among companies of the same business group. The Company is also subject to fair trade regulations limiting cross-guarantees of debt and cross-shareholdings among member companies of the Kakao Group. See "Regulation – Regulation of the Company – Regulations under the Monopoly Regulation and Fair Trade Act." In addition, the Company's material business transactions with its subsidiaries and affiliates within the Kakao Group are subject to approval by its board of directors and require more stringent and expedited public disclosure. Any future determinations by the Korea Fair Trade Commission that the Company has engaged in transactions that violate Korean fair trade laws and regulations may result in fines or other punitive measures and may have a material adverse effect on its reputation and its business.

The Company's transactions with related parties are subject to close scrutiny by the Korean tax authorities.

Under Korean tax law, there is an inherent risk that the Company's transactions with its subsidiaries, affiliates or any other person or company that is related to it may be challenged by the Korean tax authorities if such transactions are viewed as having been made on terms that were not on an arm's-length basis. If the Korean tax authorities determine that any of the Company's transactions with related parties was not on an arm's-length basis, the Company would not be permitted to deduct as expenses, or would be required to include as taxable income, the amount equivalent to such undue financial support, which may have adverse tax consequences for it.

RISKS RELATING TO KOREA

If economic conditions in Korea deteriorate, the Company's current business and future growth could be materially and adversely affected.

The Company is incorporated in Korea, and a substantial majority of its operations are conducted in Korea. As a result, the Company is subject to political, economic, legal and regulatory risks specific to Korea, and its performance and successful fulfillment of its operational strategies are dependent in large part on the overall Korean economy. The economic indicators in Korea in recent years have shown mixed signs of growth and uncertainty, and in early 2020, the overall Korean economy and the economies of Korea's major trading partners have shown signs of deterioration due to the debilitating effects of the COVID-19 pandemic. As a result, future growth of the Korean economy is subject to many factors beyond the Company's control, including developments in the global economy.

In recent years, adverse conditions and volatility in the worldwide financial markets, fluctuations in oil and commodity prices and the increasing weakness of the global economy, in particular due to the COVID-19 pandemic, have contributed to the uncertainty of global economic prospects in general and have adversely affected, and may continue to adversely affect, the Korean economy. The value of the Won relative to major foreign currencies has fluctuated significantly and, as a result of deteriorating global and Korean economic conditions, there has been significant volatility in the stock prices of Korean companies recently. Further declines in the Korea Composite Stock Price Index (the "KOSPI"), and large amounts of sales of Korean securities by foreign investors and subsequent repatriation of the proceeds of such sales may adversely affect the value of the Won, the foreign currency reserves held by financial institutions in Korea, and the ability of Korean companies to raise capital. Any future deterioration of the Korean or global economy could adversely affect the Company's business, financial condition and results of operations.

Developments that could have an adverse impact on Korea's economy include:

- declines in consumer confidence and a slowdown in consumer spending;
- adverse conditions or developments in the economies of countries and regions that are important export markets for Korea, such as China, the United States, Europe and Japan, or in emerging market economies in Asia or elsewhere, including as a result of deteriorating economic and trade relations between the United States and China and increased uncertainties resulting from the United Kingdom's exit from the European Union;
- adverse changes or volatility in foreign currency reserve levels, commodity prices (including oil prices), exchange rates (including fluctuation of the U.S. dollar, the Euro or the Japanese Yen exchange rates or revaluation of the Chinese Renminbi), interest rates, inflation rates or stock markets;
- the occurrence of severe health epidemics in Korea or other parts of the world, such as the COVID-19 pandemic;
- deterioration in economic or diplomatic relations between Korea and its trading partners or allies, including deterioration resulting from territorial or trade disputes or disagreements in foreign policy (such as the ongoing trade disputes with Japan);
- increased sovereign default risk in select countries and the resulting adverse effects on the global financial markets;
- investigations of large Korean business groups and their senior management for possible misconduct;
- a continuing rise in the level of household debt and increasing delinquencies and credit defaults by retail and small-and medium-sized enterprise borrowers in Korea;
- the economic impact of any pending or future free trade agreements or of any changes to existing free trade agreements;
- social and labour unrest;
- substantial changes in the market prices of Korean real estate;
- a decrease in tax revenue and a substantial increase in the Government's expenditures for fiscal stimulus measures, unemployment compensation and other economic and social programs that, together, would lead to an increased government budget deficit;
- financial problems or lack of progress in the restructuring of Korean business groups, other large troubled companies, their suppliers or the financial sector;
- loss of investor confidence arising from corporate accounting irregularities or corporate governance issues concerning certain Korean companies;
- increases in social expenditures to support an aging population in Korea or decreases in economic productivity due to the declining population size in Korea;
- geopolitical uncertainty and the risk of further attacks by terrorist groups around the world;
- political uncertainty or increasing strife among or within political parties in Korea;

- hostilities or political or social tensions involving oil producing countries in the Middle East (including a potential escalation of hostilities between the U.S. and Iran) and Northern Africa and any material disruption in the global supply of oil or sudden increase in the price of oil;

- natural or man-made disasters that have a significant adverse economic or other impact on Korea or its major trading partners;

- political or social tensions involving Russia and any resulting adverse effects on the global supply of oil or the global financial markets; and

- an increase in the level of tensions or an outbreak of hostilities between North Korea and Korea or the United States.

Escalations in tensions with North Korea could have an adverse effect on the Company and the market value of the Company's securities, including the Shares.

Relations between Korea and North Korea have been tense throughout Korea's modern history. The level of tension between the two Koreas has fluctuated and may increase abruptly as a result of current and future events. In particular, there have been heightened security concerns in recent years stemming from North Korea's nuclear weapon and ballistic missile programs as well as its hostile military actions against Korea. Some of the significant incidents in recent years include the following:

- North Korea renounced its obligations under the Nuclear Non-Proliferation Treaty in January 2003 and conducted six rounds of nuclear tests since October 2006, including claimed detonations of hydrogen bombs and warheads that can be mounted on ballistic missiles. Over the years, North Korea has continued to conduct a series of missile tests, including ballistic missiles launched from submarines and intercontinental ballistic missiles that it claims can reach the United States mainland. In response, the Government has repeatedly condemned the provocations and flagrant violations of relevant United Nations Security Council resolutions. In February 2016, the Government also closed the inter-Korea Gaesong Industrial Complex in response to North Korea's fourth nuclear test in January 2016. Internationally, the United Nations Security Council has passed a series of resolutions condemning North Korea's actions and significantly expanding the scope of sanctions applicable to North Korea, most recently in December 2017 in response to North Korea's intercontinental ballistic missile test in November 2017. Over the years, the United States and the European Union have also expanded their sanctions applicable to North Korea.

- In March 2010, a Korean naval vessel was destroyed by an underwater explosion, killing many of the crewmen on board. The Government formally accused North Korea of causing the sinking, while North Korea denied responsibility. Moreover, in November 2010, North Korea fired more than one hundred artillery shells that hit Korea's Yeonpyeong Island near the Northern Limit Line, which acts as the de facto maritime boundary between Korea and North Korea on the west coast of the Korean peninsula, causing casualties and significant property damage. The Government condemned North Korea for the attack and vowed stern retaliation should there be further provocation.

North Korea's economy also faces severe challenges, which may further aggravate social and political pressures within North Korea.

Although bilateral summit meetings were held between the two Koreas in April, May and September 2018 and between the United States and North Korea in June 2018, February 2019 and June 2019, there can be no assurance that the level of tensions affecting the Korean peninsula will not escalate in the future. Any increase in tensions, which may occur, for example, if North Korea experiences a leadership crisis, high-level contacts between Korea and North Korea break down or military hostilities occur, could have a material adverse effect on the Korean economy and on the Company's business, financial condition and results of operations.

Class action lawsuits related to securities transactions may expose the Company to additional litigation risk.

The Securities-related Class Action Act of Korea permits class action lawsuits to be instituted by one or more representative plaintiffs on behalf of 50 or more persons who collectively hold 0.01% or more shares of a listed company in Korea and who claim to have been damaged in a capital markets transaction involving securities issued by the company. Applicable causes of action with respect to such lawsuits include, among others, claims for damages caused by misleading information contained in a securities registration statement or prospectus, the filing of a misleading business report, insider trading or market manipulation and claims instituted against auditors for damages caused by accounting irregularities. There can be no assurance that the Company will not become subject to class action lawsuits in the future. If such class action suits are instituted against the Company, it could result in substantial costs and divert the management's attention and resources from the Company's core business.

There are special risks involved with investing in securities of Korean companies, including the possibility of restrictions being imposed by the Government in emergency circumstances as well as accounting and corporate disclosure standards that differ from those in other jurisdictions.

You should carefully consider the risk factors listed in this section, together with all of the other information included in this offering circular, before you decide to purchase the Bonds. As the Company is a Korean company, there are risks associated with investing in its securities, including the Shares, that are not typical for investments in securities of U.S. or European companies. As a Korean company, the Company operates in a business and cultural environment that is different from that of other countries.

Under the Korean Foreign Exchange Transaction Law, if the Government determines that certain emergency circumstances, including sudden fluctuations in interest rates or exchange rates, extreme difficulty in stabilising the balance of payments or substantial disturbance in the Korean financial and capital markets, are likely to occur, it may impose any necessary restriction such as requiring Korean or foreign investors to obtain prior approval from the Minister of Economy and Finance for the acquisition of Korean securities or for the repatriation of interest, dividends or sales proceeds arising from Korean securities or from disposition of such securities or other transactions involving foreign exchange.

In addition, the Company prepares and presents its financial statements in accordance with K-IFRS, which differ in many material respects from accounting principles applicable to companies in certain other countries. The Company also makes public disclosures regarding other aspects of its business in accordance with the rules and regulations of the Korea Exchange and accepted practice in Korea. These disclosure rules and practices differ in many material respects from those applicable to companies in certain other countries. There may also be less publicly available information about Korean companies, such as the Company, than is regularly made available by public or non-public companies in other countries. In making an investment decision, investors must rely upon their own examination of the Company, the terms of the offering and the financial information contained in this offering circular.

The Company is incorporated in Korea, and it may be more difficult to enforce judgments obtained in courts outside Korea.

The Company is incorporated in Korea. All of its directors are non-U.S. residents, and a significant portion of the personal assets of its directors and executive officers and a substantial majority of the Company's assets are located outside the United States. As a result, when compared to a U.S. company, it may be more difficult for investors to effect service of process in the United States upon the Company or to enforce against it, its directors or executive officers, judgments obtained in U.S. courts predicated upon civil liability provisions of the federal or state securities laws of the United States or similar judgments obtained in other courts outside Korea. There is doubt as to the enforceability in Korean courts, in original actions or in actions for enforcement of judgments of U.S. courts, of civil liabilities predicated solely upon the federal and state securities laws of the United States.

RISKS RELATING TO THE BONDS AND THE SHARES

Holders of the Bonds will bear the risk of fluctuations in the price of the Shares.

The market price of the Bonds will be affected by, among other things, fluctuations in the trading price of the Shares. No assurance can be given as to the future trading price of the Shares or the Bonds. The trading price of the Shares will be influenced by, among other things, the Issuer's results of operations and sales of additional Shares or securities convertible into Shares, as well as political, economic, financial and other factors in the Korean market. Any future sales of a significant number of Shares by the Issuer or shareholders of the Issuer, or the perception that these events may occur, could cause the trading price of the Shares to decrease or to be lower than it might be in the absence of these events or perceptions.

In addition, on March 13, 2020, the Financial Services Commission (the "FSC") announced a temporary six-month ban on short selling of listed stocks and other listed products on the KRX until September 15, 2020. At that time, the FSC had also announced that the ban may be extended depending on future conditions. On August 27, 2020, the FSC announced that the short selling ban was being extended for an additional six months (until March 15, 2021) due to rising volatility in the market and the continuing impacts of COVID-19. The FSC may extend the ban further depending on future market conditions. Any further extension of the short selling ban or any other restrictions introduced by the FSC could limit the options that Bondholders will have to hedge their exposure, or enter into derivatives, in relation to the Shares.

Furthermore, stock markets, including the KRX KOSPI Market on which the Shares are traded, have from time to time experienced significant price and volume fluctuations that have affected the market prices of securities. These fluctuations often have been unrelated or disproportionate to the operating performance of publicly traded companies.

Holders of the Bonds will have no rights as holders of the Shares until the conversion of the Bonds for Shares.

Unless and until the holders of the Bonds acquire Shares upon conversion of the Bonds, the holders of the Bonds will have no rights with respect to the Shares, including any voting rights or rights to receive any dividends or other distributions with respect to the Shares. Holders who convert the Bonds for Shares will be entitled to exercise the rights as holders of the Shares only as to actions for which the applicable record date occurs after the date of the conversion.

Bondholders will have no security interest in the Shares.

The Bonds do not create any security interest in favour of Bondholders either to secure the payment obligations arising under the Bonds or to secure the obligation to deliver Shares upon exercise of the Conversion Rights thereunder. However, pursuant to Korean law, the Shares to be delivered upon exercise of the Conversion Rights under the Bonds must be registered with the Korea Securities Depository (the "KSD") for the term of the Bonds and the KSD will hold the Shares as trust property.

Fluctuations in the exchange rate between the Won and the U.S. dollar may have a material adverse effect on the market price of the Shares in U.S. dollar terms.

The Shares are traded and quoted in Won on the KRX KOSPI Market. In addition, cash dividends, if any, in respect of the Shares will be paid in Won. As a result, fluctuations in the exchange rate between the Won and the U.S. dollar will affect, among other things, the market price of the Shares in U.S. dollar terms and the U.S. dollar value of any cash dividends paid in respect of the Shares.

If the Government believes that serious difficulties exist or are expected in relation to the international balance of payments or that the movement of capital between Korea and abroad pose serious obstacles in carrying out its currency, exchange rate and other macroeconomic policies, it may take measures to require any person who intends to perform capital transactions to obtain the permission of or to require any person who performs capital transactions to deposit part of the payment acquired in such transactions with certain Korean governmental agencies or financial institutions. See "Korean Foreign Exchange and Securities Regulations." Any of the foregoing events could adversely affect the price of the Bonds and the market price of the Shares.

The Bonds may not be a suitable investment for all investors.

Each potential investor in the Bonds must determine the suitability of the Bonds in light of its own circumstances. In particular, each potential investor should:

- have sufficient knowledge and experience to make a meaningful evaluation of the Bonds, the merits and risks of investing in the Bonds and the information contained in this offering circular;
- have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of its particular financial situation, an investment in the Bonds and the impact such investment will have on its overall investment portfolio;
- have sufficient financial resources and liquidity to bear all of the risks of an investment in the Bonds, including where the currency for principal or premium payments is different from the potential investor's market currency;
- understand thoroughly the terms of the Bonds and be familiar with the behaviour of any relevant indices and financial markets; and
- be able to evaluate (either alone or with the help of a financial adviser) possible scenarios for economic, interest rate and other factors that may affect its investment and its ability to bear the applicable risks.

A potential investor should not invest in the Bonds unless it has the expertise (either alone or with the help of a financial adviser) to evaluate how the Bonds will perform under changing conditions, the resulting effects on the value of such Bonds and the impact this investment will have on the potential investor's overall investment portfolio.

Additionally, the investment activities of certain investors may be subject to legal investment laws and regulations, or review or regulation by certain authorities. Each potential investor should consult its legal advisers to determine whether and to what extent: (i) the Bonds are legal investments for it; (ii) the Bonds can be used as collateral for various types of borrowing; and (iii) other restrictions apply to its purchase of any Bonds. Financial institutions should consult their legal advisers or the appropriate regulators to determine the appropriate treatment of Bonds under any applicable risk-based capital or similar rules.

There are limitations on the ability of Bondholders to exercise Conversion Rights.

The Bonds are convertible into Shares at the option of a Bondholder pursuant to the Conditions. A Bondholder will be able to exercise their Conversion Right only within the conversion period specified in the Conditions and will not be able to exercise their Conversion Right during the Closed Period (as defined in the Conditions). See "Terms and Conditions of the Bonds." As such, the ability of a Bondholder to exercise Conversion Rights will be restricted during these periods.

Certain transactions may dilute the potential ownership interest in the Shares to which the holders of the Bonds are entitled.

The number of Shares that holders of the Bonds are entitled to receive when they convert their Bonds is subject to adjustment for certain events, including but not limited to a free distribution, bonus issue or subdivision, consolidation or re-classification of the Shares, an issuance of options, rights or warrants to purchase Shares, a distribution of cash, assets, evidences of indebtedness and share or cash dividends and other similar dilutive actions that the Issuer may undertake to modify its capital structure. However, the number of Shares to be received will not be adjusted for other events, such as certain offerings or issuances of options, warrants, rights or certain other securities to the Issuer's directors, officers or employees, that may adversely affect the market price of the Shares and therefore the secondary market price of the Bonds. See "Terms and Conditions of the Bonds – Conversion – Adjustments to Conversion Price." The Issuer cannot give any assurance that it will not take any of the foregoing actions in the future.

The Bonds and any Shares deliverable upon conversion are subject to transfer restrictions.

The Bonds are subject to restrictions on transfer as described under "Subscription and Sale – Transfer Restrictions." Among other things, the Bonds may not be offered, sold or otherwise transferred to a Korean resident on or prior to October 28, 2021, the first anniversary of the Closing Date. These transfer restrictions may adversely affect the liquidity of the Bonds. In addition, Bondholders seeking to exercise their conversion rights and acquire Shares may be required to first obtain an investment registration card from the FSS by registering their identity in accordance with applicable Korean laws and regulations (as described in "Korean Foreign Exchange and Securities Regulations") and file an over-the-counter transaction report of the acquisition with the Governor of the FSS without delay. Unless specifically exempted, any trading of the Shares by a non-Korean resident or a non-Korean corporation is required to be made on the KRX KOSPI Market through a broker-dealer licensed to do business in Korea. Such requirements may further affect the liquidity of the Bonds, and may limit a Bondholder's ability to take advantage of short-term increases in the market price of the Shares.

As the Global Certificate is held by or on behalf of Euroclear and Clearstream, investors will have to rely on their procedures for transfer, payment and communication with the Issuer.

The Bonds will be represented by the Global Certificate. The Global Certificate will be deposited with, and registered in the name of a nominee for, a common depositary for Euroclear and Clearstream. Investors will not be entitled to receive Certificates. Euroclear and Clearstream will maintain records of the beneficial interests in the Global Certificate.

While the Bonds are represented by the Global Certificate, investors will be able to trade their beneficial interests only through Euroclear and Clearstream. The Issuer will discharge its payment obligations under the Bonds by making payments to or to the order of the common depositary for Euroclear and Clearstream for distribution to their accountholders. A holder of a beneficial interest in the Global Certificate must rely on the procedures of Euroclear and Clearstream to receive payments under the Bonds.

The Issuer has no responsibility or liability for the records relating to, or payments made in respect of, beneficial interests in the Global Certificate. Holders of beneficial interests in the Global Certificate will not have a direct right to vote in respect of the Bonds. Instead, such holders will be permitted to act only to the extent that they are enabled by Euroclear and Clearstream to appoint appropriate proxies.

Similarly, holders of beneficial interests in the Global Certificate will not have a direct right under the Global Certificate to take enforcement action against the Issuer in the event of default under the Bonds but will have to rely upon the Trustee to enforce their rights under the Trust Deed and the Bonds.

There is no existing trading market for the Bonds and, therefore, the Bonds offer limited liquidity.

The Bonds constitute a new issue of securities for which there is no existing market. Approval in-principle has been received from the SGX-ST for the listing and quotation of the Bonds on the SGX-ST. The offer and sale of the Bonds is not conditioned on obtaining a listing of the Bonds on the SGX-ST or any other exchange. Although the Managers have advised the Issuer that they currently intend to make a market in the Bonds, they are not obligated to do so, and any market-making activity with respect to the Bonds, if commenced, may be discontinued at any time without notice at their sole discretion. See "Subscription and Sale."

No assurance can be given as to the liquidity of, or the development and continuation of an active trading market for, the Bonds. If an active trading market for the Bonds does not develop or is not maintained, the liquidity and market price of the Bonds may be adversely affected. If such a market were to develop, the Bonds could trade at prices that may be higher or lower than the price at which the Bonds are issued depending on many factors, including:

- prevailing interest rates;
- the results of operations and financial condition of the Issuer;
- the price and volatility of the Shares and the Korean stock market;
- political and economic developments in and affecting Korea, the United States, the European Union and China;

- the market conditions for similar securities; and

- the financial condition and stability of the financial and information technology sectors in Korea and other parts of the world.

Future sales of Shares may adversely affect the price of the Shares and the Bonds.

The Issuer has agreed with the Managers that it will not, without the prior written consent of the Managers, until 90 days following the Closing Date, issue, offer, sell, pledge, contract to sell or otherwise dispose of any Shares or any securities convertible into or exchangeable for the Shares, subject to certain exceptions. However, once these lock-up restrictions expire, terminate or are waived, there is no restriction on the Issuer's ability to sell or issue Shares. Future issuances or sales of substantial amounts of Shares in the public market after the completion of this offering, or the perception that substantial issuances or sales could occur, could have a material adverse effect on the market price of the Shares and, in turn, the Bonds.

Conversion of the Bonds for Shares may be deemed a taxable event of the holders of the Bonds for capital gains tax purposes.

It is unclear under Korean tax law whether the conversion of the Bonds into Shares would constitute a taxable event for the holders of the Bonds for Korean capital gains tax purposes. In case the conversion of the Bonds is deemed to be a taxable event, the holders of the Bonds will be subject to Korean withholding tax and will not be entitled to receive Additional Amounts (as described in "Terms and Conditions of the Bonds – Taxation") in respect of such withholding tax. It is uncertain how the amount subject to such tax would be calculated. Such tax may be exempted or reduced under applicable tax treaties or under Korean tax law, depending on the classification of the income arising from such conversion. See "Taxation."

Bondholders are bound by decisions of defined majorities in respect of any modification, waiver and substitution relating to the Bonds.

The terms and conditions of the Bonds contain provisions for calling meetings of Bondholders to consider matters affecting their interests generally. These provisions permit defined majorities to bind all Bondholders, including Bondholders who did not attend and vote at the relevant meeting and Bondholders who voted in a manner contrary to the majority.

The terms and conditions of the Bonds also provide that the Trustee may, without the consent of Bondholders, agree (but shall not be obligated): (i) to any modification of the Conditions, the Trust Deed or the Agency Agreement if such modification will not be materially prejudicial to the interests of Bondholders; and (ii) to any modification of the Bonds, the Conditions, the Trust Deed or the Agency Agreement which is of a formal, minor or technical nature or is to correct a manifest error or which is necessary to comply with mandatory provisions of law.

The Trustee may request that Bondholders provide an indemnity and/or security and/or pre-funding to its satisfaction.

In certain circumstances, the Trustee may (at its sole discretion) request Bondholders to provide an indemnity and/or security and/or pre-funding to its satisfaction before it takes any action on behalf of Bondholders. The Trustee will not be obliged to take any such actions if not indemnified and/or secured and/or pre-funded to its satisfaction. Negotiating and agreeing to any indemnity and/or security and/or pre-funding can be a lengthy process and may have an impact on when such actions can be taken. The Trustee may not be able to take actions, notwithstanding the provision of an indemnity or security or pre-funding to it, in breach of the terms of the Trust Deed or in circumstances where there is uncertainty or a dispute as to the applicable laws or regulations and, to the extent permitted by the Trust Deed, the terms and conditions of the Bonds and applicable laws and regulations, it will be for the Bondholders to take such actions directly.

RISKS RELATING TO FORWARD-LOOKING STATEMENTS

This offering circular contains forward-looking statements that are the Issuer's present expectations of future events and are subject to certain factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements.

In addition to the risks, uncertainties and assumptions discussed above, additional factors could adversely impact the business and financial performance of the Company. The forward-looking statements contained in this offering circular involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance or achievements to be materially different from those expressed or implied by the forward-looking statements. Such factors include:

- its ability to attract and retain users and increase the level of engagement of users;
- its ability to further monetise products and services;
- its ability to attract advertisers and increase the amount that advertisers spend with it;
- its ability to successfully enter new markets and manage business expansion;
- its ability to compete in the mobile and portal-related services and entertainment industries in Korea and elsewhere;
- its ability to develop or acquire new products and services, improve existing products and services and increase the value of products and services in a timely and cost-effective manner;
- its ability to maintain good relationships with business partners and attract new partners;
- its ability to increase revenue and revenue growth rate;
- its ability to timely and effectively scale and adapt existing technology and network infrastructure;
- its ability to successfully acquire and integrate companies and assets;
- its future business development, results of operations and financial condition; and
- the regulatory environment in which it operates.

The Issuer has based the forward-looking statements contained in this offering circular largely on its current expectations and projections about future events and financial trends that it believes may affect its financial condition, results of operations, business strategy and financial needs. New risk factors and uncertainties may emerge from time to time and it is not possible for the Issuer to predict all risk factors and uncertainties, nor can it assess the impact of all factors on its or the Company's business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

The Issuer cautions you not to place undue reliance on the forward-looking statements, which speak only as of the date of this offering circular. Except as required by law, the Issuer is not under any obligation, and expressly disclaims any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or other reasons. All subsequent forward-looking statements attributable to the Issuer or any person acting on its behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section.

TERMS AND CONDITIONS OF THE BONDS

The following other than the words in italics is the text of the Terms and Conditions of the Bonds which will appear on the reverse of each of the definitive certificates evidencing the Bonds:

The issue of US$300,000,000 in aggregate principal amount of Zero Coupon Convertible Bonds due 2023 (the "Bonds") of Kakao Corp. (the "Issuer") was authorised by a resolution of the Board of Directors of the Issuer passed on October 21, 2020. The Bonds are constituted by a trust deed (as amended or supplemented from time to time) (the "Trust Deed") dated October 28, 2020 (the "Closing Date") and made between the Issuer and Citicorp International Limited as trustee for the holders of the Bonds (the "Trustee," which term shall, where the context so permits, include all other persons for the time being acting as trustee or trustees under the Trust Deed). The Issuer has entered into a paying, conversion and transfer agency agreement (as amended or supplemented from time to time, the "Agency Agreement") dated October 28, 2020 with the Trustee, Citibank, N.A., London Branch as principal paying agent, conversion agent and transfer agent (the "Principal Agent"), Citigroup Global Markets Europe AG as registrar (the "Registrar") and the other paying, conversion and transfer agents appointed under it (each, a "Paying Agent," "Conversion Agent," "Transfer Agent" and together with the Registrar and the Principal Agent, the "Agents" (which shall, where applicable, include the Singapore Agent (as defined in Condition 18)) relating to the Bonds. References to the "Principal Agent," "Registrar" and "Agents" below are references to the principal agent, registrar and agents for the time being for the Bonds.

The statements in these terms and conditions (these "Conditions") include summaries of, and are subject to, the detailed provisions of the Trust Deed. Unless otherwise defined, terms used in these Conditions have the meaning specified in the Trust Deed. Copies of the Trust Deed and the Agency Agreement are available for inspection upon prior written request and proof of holding of the Bonds to the satisfaction of the Trustee during usual business hours (Monday to Friday 9:00 a.m. to 3:00 p.m., except for public holidays) at the principal office of the Trustee being on the date hereof at 20/F, Citi Tower, One Bay East, 83 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong. The Bondholders are entitled to the benefit of the Trust Deed and are bound by, and are deemed to have notice of, all the provisions of the Trust Deed and the Agency Agreement applicable to them. Any redemption and any adjustment to the Conversion Price (as defined in Condition 6.1.3) in accordance with the terms and conditions contained herein will be subject to, and done in accordance with, applicable law.

1 STATUS

The Bonds constitute direct, unsubordinated, unconditional and (subject to the provisions of Condition 4) unsecured obligations of the Issuer and shall at all times rank *pari passu* and rateably without any preference or priority among themselves. The payment obligations of the Issuer under the Bonds shall, save for such exceptions as may be provided by mandatory provisions of applicable law and subject to Condition 4, at all times rank at least equally with all of the Issuer's other present and future direct, unsubordinated, unconditional and unsecured obligations.

2 FORM, DENOMINATION AND TITLE

2.1 Form and Denomination

The Bonds are issued in registered form without coupons and only in denominations of US$200,000 or integral multiples of US$100,000 in excess thereof (each an "Authorised Denomination"). A Bond certificate (each a "Certificate") will be issued to each Bondholder in respect of its registered holding of Bonds. Each Bond and each Certificate will be numbered serially with an identifying number which will be recorded on the relevant Certificate and in the register of Bondholders which the Issuer will procure to be kept by the Registrar pursuant to the Agency Agreement. The Bonds may not be subdivided into a denomination smaller than US$200,000.

Upon issue, the Bonds will be evidenced by a global certificate (the "Global Certificate") in registered form which will be registered in the name of a nominee of, and deposited with a common depositary for, Euroclear Bank SA/NV ("Euroclear") and Clearstream Banking S.A. ("Clearstream"). The Conditions are modified by certain provisions contained in the Global Certificate. Except in the limited circumstances described in the Global Certificate, owners of interests in Bonds evidenced by the Global Certificate will not be entitled to receive definitive Certificates in respect of their individual holdings of Bonds. The Bonds are not issuable in bearer form. If owners of interests in the Bonds become entitled to receive a definitive Certificate, pursuant to their terms, each Bond will be issued in registered form and serially numbered with an identifying number which will be recorded in the Register.

2.2 Title

Title to the Bonds passes only by transfer and registration in the register of Bondholders as described in Condition 3. The holder of any Bond will (except as otherwise required by law or as ordered by a court of competent jurisdiction) be treated as its absolute owner for all purposes (whether or not it is overdue and regardless of any notice of ownership, trust or any interest in it or any writing on, or the theft or loss of, the Certificate issued in respect of it) and none of the Issuer, the Trustee or any agent thereof shall be affected by notice to the contrary. In these Conditions, "Bondholder" and (in relation to a Bond) "holder" mean the person in whose name a Bond is registered.

3 TRANSFERS OF BONDS; ISSUE OF CERTIFICATES

3.1 Register

The Issuer will cause to be kept at the specified office of the Registrar outside the United Kingdom and in accordance with the terms of the Agency Agreement a register in respect of the Bonds on which shall be entered the names and addresses of the holders of the Bonds and the particulars of the Bonds held by them and of all transfers, redemptions and conversions of the Bonds (the "Register").

Each Bondholder shall be entitled to receive only one Certificate in respect of its entire holding of Bonds and save as provided in Condition 3.2, each Certificate shall represent the entire holding of Bonds by such Bondholder.

3.2 Transfers

Subject to Conditions 3.5 and 3.6 and the terms of the Agency Agreement, a Bond may be transferred or exchanged by delivery of the Certificate issued in respect of that Bond duly endorsed and accompanied by a form of transfer duly completed and signed by the holder or his attorney duly authorised in writing, to the specified office of the Registrar or any of the Transfer Agents, together with such evidence as the Registrar or (as the case may be) such Transfer Agent may require regarding the title of the transferor and the authority of the individuals who have executed the form of transfer. A Bond may be transferred only if the principal amount of such Bond being transferred is US$200,000 or an integral multiple of US$100,000 in excess thereof. No transfer of title to a Bond will be valid unless and until entered on the Register.

Transfers of interests in the Bonds evidenced by the Global Certificate will be effected in accordance with the rules of the relevant clearing systems.

3.3 Delivery of New Certificates

3.3.1 The relevant transfer or exchange will be registered by the Registrar within five Business Days and each new Certificate to be issued upon a transfer or exchange of Bonds will, within five Business Days (at the place of the relevant specified office) of receipt by the Registrar or, as the case may be, any other relevant Transfer Agent of the original Certificate and the form of transfer duly completed and signed, be made available for collection at the specified office of the Registrar or such other relevant Transfer Agent or, if so requested in the form of transfer, be mailed by uninsured mail at the risk of the holder entitled to the Bonds (free of charge to the holder but if mailed otherwise than by ordinary mail at the request of the transferee or, as the case may be, the transferor, then at the expense of the transferee or, as the case may be, the transferor) to the address specified in the form of transfer.

3.3.2 Where only part of a principal amount of the Bonds (being that of one or more Bonds) in respect of which a Certificate is issued is to be transferred, converted, redeemed or repurchased, such transfer, conversion, redemption or repurchase shall be registered in the register by the Registrar and a new Certificate in respect of the Bonds not so transferred, converted, redeemed or repurchased will, within five Business Days of delivery of the original Certificate to the Registrar or other relevant Agent, be made available for collection by the holder of the Bonds not so transferred at the specified office of the Registrar or such other relevant Agent or, if so requested in the form of transfer, Conversion Notice (as defined in Condition 6.2), notice of redemption, Delisting Put Exercise Notice or Put Option Notice, as applicable, be mailed by uninsured mail at the risk of the holder of the Bonds not so transferred, converted, redeemed or repurchased (free of charge to the holder but if mailed otherwise than by ordinary mail at the request of the transferee or, as the case may be, the transferor, then at the expense of the transferee or, as the case may be, the transferor) to the address of such holder appearing on the Register.

3.3.3 For the purposes of these Conditions (except for Condition 6.2.1(iii), Condition 7 and Condition 8.5.6), "Business Day" shall mean a day other than a Saturday or Sunday on which banks are open for business in Seoul and the city in which the specified office of the Registrar (if a Certificate is deposited with it in connection with a transfer or conversion) or the Agent with whom a Certificate is deposited in connection with a transfer or exchange, is located.

3.4 Formalities Free of Charge

Registration of a transfer of Bonds and issuance of new Certificates will be effected without charge by or on behalf of the Issuer or any of the Agents, but upon (i) payment (or the giving of such indemnity as the Issuer or any of the Agents may require) of a sum sufficient to cover any tax, duties or other governmental charges which may be imposed in relation to such transfer (and such transfer shall not be made unless and until the required payment described herein is made); (ii) the Issuer or the relevant Transfer Agent being satisfied that the regulations concerning transfer of Bonds have been complied with (including such reasonable regulations as the Issuer may from time to time agree with the Registrar and the Trustee) and (iii) the Registrar being satisfied in its absolute discretion with the documents of and/or the identity of the person making the application.

3.5 Restricted Transfer Periods

No Bondholder may require the transfer of a Bond to be registered (i) during the period of seven days ending on (and including) the due date for any redemption pursuant to Conditions 8.1, 8.2 and 8.3 of the Bonds; (ii) after a Conversion Notice has been delivered with respect to such Bond; (iii) after a Change of Control Put Exercise Notice (as defined in Condition 8.4) has been delivered in respect of such Bond; (iv) after a Delisting Put Exercise Notice (as defined in Condition 8.5) has been delivered in respect of such Bond or (v) after a Put Option Notice (as defined in Condition 8.6) has been delivered in respect of such Bond, each such period being a "Restricted Transfer Period".

3.6 Regulations

All transfers of Bonds and entries on the Register will be made subject to the detailed regulations concerning transfers of Bonds attached as a schedule to the Agency Agreement. The regulations may be changed by the Issuer, with the prior written approval of the Trustee and the Registrar. A copy of the current regulations will be mailed (free of charge to the Bondholder and at the Issuer's expense) by the Registrar to any Bondholder who requests in writing a copy of such regulations.

3.7 Transfer Restriction under Korean Law

The Bonds may not be offered, sold or otherwise transferred to a Korean resident (as such term is defined in the Foreign Exchange Transaction Law of Korea) on or prior to October 28, 2021, the first anniversary of the Closing Date.

4 NEGATIVE PLEDGE

So long as any Bond remains outstanding (as defined in the Trust Deed), the Issuer will not, and will procure that no Principal Subsidiary (as defined below) will, create or permit to be outstanding any mortgage, charge, lien, pledge or other security interest upon the whole or any part of the property, assets or revenues, present or future, of the Issuer or any Principal Subsidiary to secure for the benefit of the holders of any International Investment Securities (as defined below):

(a) any payment of any sum owing in respect of any such International Investment Securities; or

(b) any payment under any guarantee or other like obligation of any such International Investment Securities; or

(c) any payment under any indemnity or other like obligation relating to any such International Investment Securities,

unless, at the same time or prior thereto, the Issuer's obligations under the Bonds and the Trust Deed (a) are secured equally and rateably therewith to the satisfaction of the Trustee or (b) have the benefit of such other security, guarantee, indemnity or other arrangement as shall be approved by, or the obligations under this Condition 4 are otherwise waived pursuant to, an Extraordinary Resolution (as defined in the Trust Deed) of the Bondholders.

The following terms (except as otherwise expressly provided or unless the context otherwise clearly requires) for all purposes of the Trust Deed and the Bonds shall have the respective meanings specified in this Condition:

"International Investment Securities" means any future and present indebtedness in the form of or represented by bonds, debentures, notes or other investment securities of the Issuer or any Principal Subsidiary or any other Person which (i) are for the time being, or are intended to be or capable of being, quoted, listed, ordinarily dealt in or traded on any stock exchange or over the counter or other securities market outside Korea (whether or not initially distributed by way of private placement), and (ii) either are by their terms payable, or confer a right to receive payment, in any currency other than Won or are denominated in Won and more than 50% of the aggregate principal amount thereof is initially distributed outside Korea by or with the authorisation of the Issuer or the relevant Principal Subsidiary or the issuer thereof, as the case may be.

"Person" means any individual, corporation, partnership, joint venture, association, joint stock company, trust, unincorporated organisation or government or any agency or political subdivision thereof.

"Principal Subsidiary" means:

(i) any Subsidiary (as defined below) of the Issuer:

(a) whose net sales, as shown by the then latest audited financial statements or accounts (consolidated where applicable, but without intercompany adjustments for consolidation with the Issuer) of such Subsidiary, constitute at least 10% of the consolidated net sales of the Issuer as shown by the then latest audited consolidated accounts of the Issuer; or

(b) whose total assets, as shown by the then latest audited financial statements or accounts (consolidated where applicable, but without intercompany adjustments for consolidation with the Issuer) of such Subsidiary, constitute at least 10% of the total consolidated assets of the Issuer as shown by the then latest audited consolidated accounts of the Issuer;

provided that:

(1) in the case of a Subsidiary acquired, or a company becoming a Subsidiary, after the end of the financial period to which the latest audited consolidated accounts of the Issuer relate, the reference to the then latest audited consolidated accounts of the Issuer for the purposes of the calculation above shall, until audited consolidated accounts of the Issuer for the financial period in which the acquisition is made or, as the case may be, in which the relevant company becomes a Subsidiary are published, be deemed to be a reference to the then latest audited consolidated accounts of the Issuer adjusted to consolidate the last audited accounts (consolidated where applicable) of such Subsidiary in such accounts;

(2) if at any relevant time in relation to the Issuer or any Subsidiary in respect of which financial consolidation is relevant no consolidated accounts are prepared, audited net sales and total assets of the Issuer and/or any such Subsidiary shall be determined on the basis of pro-forma consolidated accounts prepared for this purpose by the auditors for the time being of the Issuer;

(3) if at any relevant time in relation to any Subsidiary no accounts are audited, its net sales and total assets (consolidated where applicable, but without intercompany adjustments for consolidation with the Issuer) shall be determined on the basis of pro-forma accounts (consolidated where applicable, but without intercompany adjustments for consolidation with the Issuer) of the relevant Subsidiary prepared for this purpose by the auditors for the time being of the Issuer; and

(4) if the accounts of any Subsidiary (not being a Subsidiary referred to in proviso (1) above) are not consolidated with those of the Issuer, then the determination of whether or not such Subsidiary is a Principal Subsidiary shall be based on a pro-forma consolidation of its accounts (consolidated where applicable, but without intercompany adjustments for consolidation with the Issuer) with the then latest consolidated audited accounts (determined on the basis of the foregoing) of the Issuer; or

(ii) any Subsidiary of the Issuer to which is transferred all or substantially all of the assets of a Subsidiary which immediately prior to such transfer was a Principal Subsidiary, provided that the Principal Subsidiary which so transfers its assets shall forthwith upon such transfer cease to be a Principal Subsidiary.

"Subsidiary" means any company or other business entity of which the Issuer owns or controls (in either case, either directly or through another Subsidiary or other Subsidiaries) 50% or more of the issued share capital or other ownership interest having ordinary voting power to elect directors, managers or trustees of such company or other business entity or any company or other business entity which should have its accounts consolidated with those of that person under Korean law, regulations or generally accepted accounting principles from time to time.

5 INTEREST

The Bonds do not bear any interest, provided that if the Issuer fails to pay any sum in respect of the Bonds when the same becomes due and payable under these Conditions, interest shall accrue on the overdue sum pursuant to Condition 7.5.

6 CONVERSION

6.1 Conversion Right

6.1.1 Conversion Period:

Subject as hereinafter provided, Bondholders have the right to convert their Bonds in an aggregate principal amount of US$200,000 or an integral multiple of US$100,000 in excess thereof for Shares (as defined in Condition 6.1.5) at any time during the Conversion Period referred to below.

The right of a Bondholder to convert any Bond for Shares is called the "Conversion Right." Subject to and upon compliance with the provisions of this Condition, the Conversion Right attaching to any Bond may be exercised, at the option of the holder thereof, at any time (subject to the next paragraph) on or after January 1, 2021, up to the close of business (at the place where the Certificate evidencing such Bond is deposited for conversion) on April 18, 2023 (but, except as provided in Condition 6.1.4 and Condition 10, in no event thereafter) or if such Bond shall have been called for redemption before the Maturity Date, then up to the close of business (at the place aforesaid) on the date that is 10 calendar days prior to the date fixed for redemption thereof (or, if such date shall not be a Business Day at the place where the Certificate representing the Bond is to be delivered, the immediately preceding Trading Day) (the "Conversion Period").

Conversion Rights may not be exercised in respect of a Bond where the Bondholder shall have exercised its right to require the Issuer to redeem such Bond pursuant to Conditions 8.4, 8.5 or 8.6, except as provided in Condition 6.1.4.

The number of Shares to be delivered on conversion of a Bond will be determined by dividing the principal amount of the Bond to be converted (translated into Korean Won at the fixed rate of Won 1,131.9 = US$1.00 (the "Fixed Exchange Rate")) by the Conversion Price in effect on the Conversion Date (both as hereinafter defined).

A Conversion Right may only be exercised in respect of Bonds with a principal amount of US$200,000 or an integral multiple of US$100,000 in excess thereof. If more than one Bond held by the same holder is converted at any one time by the same holder, the number of Shares to be delivered upon such conversion will be calculated on the basis of the aggregate principal amount of the Bonds to be converted.

Upon exercise of Conversion Rights in relation to the entire principal amount of any Bond and the fulfilment by the Issuer of all its obligations in respect thereof, the relevant Bondholder shall have no further rights in respect of such Bond and the obligations of the Issuer in respect thereof shall be extinguished.

6.1.2 Fractions of Shares:

Fractions of Shares will not be delivered on conversion and no cash adjustments or other adjustment will be made in respect thereof. However, if the Conversion Right in respect of more than one Bond is exercised at any one time such that Shares to be delivered on conversion are to be registered in the same name, the number of such Shares to be delivered in respect thereof shall be calculated on the basis of the aggregate principal amount of such Bonds being so converted and rounded down to the nearest whole number of Shares. Notwithstanding the

foregoing, the Issuer will upon conversion of Bonds pay in cash in U.S. dollars a sum equal to such portion of the principal amount of the Bond or Bonds evidenced by the Certificate deposited in connection with the exercise of Conversion Rights, aggregated as provided above, as corresponds to any fraction of a Share not delivered if such sum, when translated to U.S. dollars at the Fixed Exchange Rate, exceeds US$10.00. Any such sum shall be paid not later than 14 Business Days after the relevant Conversion Date by transfer to a U.S. dollar account with a bank in New York City specified in the relevant Conversion Notice, or if no such account is specified in the relevant Conversion Notice, by mailing a U.S. dollar cheque drawn on a bank in New York City to the address of the Bondholder appearing in the Register.

So long as the Bonds are represented by the Global Certificate and the Global Certificate is held on behalf of Euroclear or Clearstream or an Alternative Clearing System (as defined in the form of the Global Certificate), payments on the Bonds are expected to be made by transfer through Euroclear or Clearstream or an Alternative Clearing System.

6.1.3 Conversion Price and Fixed Exchange Rate:

The price at which Shares will be delivered upon conversion, as adjusted from time to time (the "Conversion Price"), will initially be Won 477,225 per Share, but will be subject to adjustment in the manner provided in Condition 6.3.

6.1.4 Revival and/or Survival after Default:

Notwithstanding the provisions of Condition 6.1.1, if (a) the Issuer shall default in making payment in full in respect of any Bond which shall have been called or put for redemption on the date fixed for redemption thereof pursuant to these Conditions, (b) any Bond has become due and payable prior to the Maturity Date (as defined in Condition 8.1) by reason of the occurrence of any of the events referred to in Condition 10, or (c) any Bond is not redeemed on the Maturity Date in accordance with Condition 8.1, the Conversion Right attaching to such Bond will revive and/or will continue to be exercisable up to, and including, the close of business (at the place where the Certificate evidencing such Bond is deposited for conversion) on the date upon which the full amount of the moneys payable in respect of such Bond has been duly received by the Principal Agent or the Trustee and notice of such receipt has been duly given to the Bondholders and, notwithstanding the provisions of Condition 6.1.1, any Bond in respect of which the Certificate and Conversion Notice are deposited for conversion prior to such date shall be converted on the relevant Conversion Date notwithstanding that notice referred to above may have been duly given to the Bondholders before such Conversion Date or that the Conversion Period may have expired before such Conversion Date. For the avoidance of doubt nothing in this Condition 6.1.4 shall permit any Bondholder to both have Shares delivered to it pursuant to Condition 6.2.3 and receive payment of the moneys payable with respect to such Bond.

6.1.5 Meaning of "Shares":

As used in these Conditions, the expression "Shares" means (a) shares of common stock, par value Won 500 per share, of the Issuer, together with shares of any class or classes resulting from any subdivision, consolidation or re-classification of those shares, which as between themselves have no preference in respect of dividends or of amounts payable in the event of any voluntary or involuntary liquidation or dissolution of the Issuer and (b) fully-paid shares of any class or classes of the share capital of the Issuer authorised after the date of the Trust Deed which have no preference in respect of dividends or of amounts payable in the event of any voluntary or involuntary liquidation or winding-up of the Issuer; provided that, subject to the provisions of Condition 11, shares to be delivered in conversion of the Bonds means only "Shares" as defined in sub-clause (a) above.

6.2 Conversion Procedure

6.2.1 Conversion Notice:

(i) To exercise the Conversion Right attaching to any Bond, the holder thereof must complete, execute and deliver at his own expense during usual business hours (Monday to Friday 9:00 a.m. to 3:00 p.m.) at the specified office of any Conversion Agent on any Business Day a duly completed and signed notice of conversion (a "Conversion Notice") in duplicate in the form (current at such time) obtainable from the specified office of each Agent, together with the relevant Certificate (other than any Global Certificate).

A Conversion Notice delivered outside the normal business hours or on a day which is not a Business Day at the place of the specified office of the relevant Conversion Agent shall for all purposes be deemed to have been delivered with that Conversion Agent during the usual business hours at such place on the next Business Day following such day. Any Bondholder who delivers a Conversion Notice during any period (a "Closed Period") other than the Conversion Period specified in Condition 6.1.1 will not be permitted to convert the Bonds for Shares until the next Business Day after the end of that Closed Period, which (if all other conditions to conversion have been fulfilled) will be the Conversion Date for such Bonds notwithstanding that such date may fall outside of the Conversion Period.

(ii) On or prior to delivering a Conversion Notice, the Bondholder exercising its Conversion Right must (i) obtain an investment registration card issued by the Korean Financial Supervisory Service ("KFSS") by registering its identity with the KFSS in accordance with applicable Korean laws and regulations, including the regulations of the Korean Financial Services Commission, and (ii) file an over-the-counter transaction report of the acquisition with the Governor of the KFSS without undue delay. However, the foregoing requirement on registration with the KFSS does not apply to non-resident Bondholders who acquire Shares with the intention of selling such Shares within three months from the date of acquisition of the Shares.

On or prior to delivering a Conversion Notice, a Bondholder exercising its Conversion Right or the person named in the relevant Conversion Notice to receive the delivery of any Shares on conversion must appoint an eligible custodian in Korea with which Shares will be kept in custody. For the avoidance of doubt, under Korean law, only foreign exchange banks, including domestic branches of foreign banks, financial investment companies with a dealing, brokerage or collective investment business licence, the Korea Securities Depository (the "KSD") and internationally recognised custodians are eligible to act as a custodian of securities for a non-resident or foreign investor. In addition, a foreign investor must ensure that such foreign investor's custodian registers its securities with the KSD.

No Shares will be delivered to a holder of a Bond or a beneficial interest therein unless such holder satisfies the foregoing conditions.

(iii) The calendar day on which a Conversion Notice has been delivered to a Conversion Agent (determined by reference to the date and time in Seoul at the time of delivery no matter where delivery is made) in full compliance with the foregoing procedures is referred to herein as a "Deposit Date" and the Business Day in Seoul immediately following the Deposit Date is referred to herein as the "Conversion Date." For purposes of the Korean Commercial Code, the request for conversion shall be deemed to have been made at 23:59, Seoul time on the conversion Date. In this clause (iii), "Business Day in Seoul" shall mean a day other than a Saturday or Sunday on which banks are open for business in Seoul.

(iv) The Conversion Date in respect of a Bond must fall at a time when the Conversion Right attaching to that Bond is expressed in these Conditions to be exercisable (subject to the provisions of Condition 6.1.4 and Condition 10). A Conversion Notice once delivered shall be irrevocable and may not be withdrawn unless the Issuer consents to such withdrawal.

6.2.2 Stamp Duty etc.:

A Bondholder delivering a Certificate in respect of a Bond for conversion must pay directly to the relevant tax authorities any taxes or capital, stamp, issue, delivery and registration and transfer taxes and duties arising on conversion (other than any taxes or capital or stamp duties payable in Korea and, if relevant, in the place of any Alternative Stock Exchange, in respect of the allotment and transfer or delivery of Shares and listing of the Shares on the KRX KOSPI Market of the Korea Exchange (the "KRX KOSPI Market") or any Alternative Stock Exchange on conversion, which shall be payable by the Issuer) (the "Taxes") and such Bondholder must pay all, if any, taxes arising by reference to any disposal or deemed disposal of a Bond in connection with such conversion. The Issuer will pay all other expenses arising on the delivery of Shares on conversion of the Bonds and all charges of the Agents, the Trustee and the share transfer agent (which initially will be the KSD) (the "Share Transfer Agent") for the Shares in connection with conversion. Neither the Trustee nor the Agents shall be responsible for determining whether such taxes or capital, stamp, issue, delivery and registration and transfer taxes and duties are payable or the amount thereof and neither shall be responsible or liable for any failure by the Issuer to pay such taxes or capital, stamp, issue, delivery and registration and transfer taxes and duties or to determine the sufficiency of any amount so paid.

6.2.3 Delivery of Shares:

(i) Upon exercise by a Bondholder of its Conversion Right, the Issuer shall use its best efforts to, as soon as practicable, and in any event not later than 10 Business Days after the Conversion Date, cause the relevant securities account of the Bondholder exercising its Conversion Right or of his/their nominee, to be credited with such number of relevant Shares to be delivered upon conversion (notwithstanding any Retroactive Adjustment of the Conversion Price) and, subject to any applicable limitations then imposed by Korean laws and regulations, shall procure the Share Transfer Agent to, as soon as practicable, and in any event within 20 Business Days in Korea of the Conversion Date, dispatch or cause to be dispatched to the order of the person named for that purpose in the relevant Conversion Notice at the place and in the manner specified in the relevant Conversion Notice (uninsured and the risk of delivery at any such place being that of the converting Bondholder) such assignments and other documents (if any) as required by law to effect the transfer thereof.

The crediting of the Shares to the relevant securities account of the converting Bondholder and any payment of cash payable pursuant to Condition 6.1.2 will be deemed to satisfy the Issuer's obligation to pay the principal on the Bonds converted.

(ii) If the Conversion Date in relation to any Bond shall be on or after the record date for any issue, distribution, grant, offer or other event as gives rise to the adjustment of the Conversion Price pursuant to Condition 6.3, but before the relevant adjustment becomes effective under the relevant Condition (a "Retroactive Adjustment"), upon the relevant adjustment becoming effective the Issuer shall deliver to the converting Bondholder (or in accordance with the instructions contained in the Conversion Notice (subject to applicable exchange control or other laws or other regulations)), such additional number of Shares as, together with the Shares delivered or to be delivered on conversion of the relevant Bond, is equal to the number of Shares which would have been required to be delivered on conversion of such Bond if the relevant adjustment to the Conversion Price had been made and become effective immediately after the relevant record date.

(iii) The Shares delivered upon conversion of the Bonds will be fully paid and will in all respects rank *pari passu* with the Shares in issue on the relevant Conversion Date (except for any right excluded by mandatory provisions of applicable law) and the converting Bondholder shall be entitled to all rights, the record date for which falls on or after such Conversion Date to the same extent as all other holders of fully-paid and non-assessable Shares in issue as if such converting Bondholder had held such Shares throughout the period to which such rights relate. A holder of Shares delivered on conversion of Bonds shall not be entitled to any rights, the record date for which precedes the relevant Conversion Date.

6.3 Adjustments to Conversion Price

The Conversion Price will be subject to adjustment as described in this Condition 6.3.

6.3.1 Free Distribution, Bonus Issue, Sub-division, Consolidation and Re-classification of Shares:

Adjustment: If the Issuer shall (a) make a free distribution of Shares (other than by way of a dividend in Shares); (b) make a bonus issue of its Shares; (c) sub-divide its outstanding Shares; (d) consolidate its outstanding Shares into a smaller number of Shares or (e) re-classify any of its Shares into other securities of the Issuer, then the Conversion Price shall be appropriately adjusted so that the holder of any Bond, the Conversion Date in respect of which occurs after the coming into effect of the adjustment described in this Condition 6.3.1, shall be entitled to receive the number of Shares and/or other securities of the Issuer which such holder would have held or have been entitled to receive after the occurrence of any of the events described above had such Bond been converted immediately prior to the occurrence of such event (or, if the Issuer has fixed a prior record date for the determination of shareholders entitled to receive any such free distribution or bonus issue of Shares or other securities issued upon any such sub-division, consolidation or re-classification, immediately prior to such record date), but without prejudice to the effect of any other adjustment to the Conversion Price made with effect from the date of the occurrence of such event (or such record date) or any time thereafter.

Effective date of adjustment: An adjustment made pursuant to this Condition 6.3.1 shall become effective immediately on the relevant event referred to above becoming effective or, if a record date is fixed therefor, immediately after such record date; provided that in the case of a free distribution or bonus issue of Shares which must, under applicable laws of Korea, be submitted for approval to a general meeting of shareholders or be approved by a meeting of the Board of Directors of the Issuer before being legally paid or made, and which is so approved after the record date fixed for the determination of shareholders entitled to receive such distribution or issue, such adjustment shall, immediately upon such approval being given by such meeting, become effective retroactively to immediately after such record date.

6.3.2 Declaration of Dividend in Shares, Capitalisation of Profits or Reserves:

Adjustment: If the Issuer shall issue Shares as a dividend in Shares or make a distribution of Shares which is treated as a capitalisation issue for accounting purposes under Korean international financial reporting standards ("K-IFRS") (including, but not limited to, capitalisation of capital reserves and employee stock bonus), then the Conversion Price in effect when such dividend and/or distribution is issued (or, if the Issuer has fixed a prior record date for the determination of shareholders entitled to receive such dividend and/or distribution, on such record date) shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N}{N + n}\right]$$

where:

NCP = the Conversion Price after such adjustment.

OCP = the Conversion Price before such adjustment.

N = the number of Shares outstanding, immediately before the issuance of such dividend and/or distribution (or at the close of business in Seoul on such record date as the case may be).

n = the number of Shares to be distributed to the shareholders as a dividend and/or distribution.

Effective date of adjustment: An adjustment made pursuant to this Condition 6.3.2 shall become effective immediately on the relevant event referred to in this Condition 6.3.2 becoming effective or, if a record date is fixed therefor, immediately after such record date; provided that in the case of a dividend in Shares which must, under applicable laws of Korea, be submitted for approval to a general meeting of shareholders of the Issuer or be approved at a meeting of the Board of Directors of the Issuer before being legally paid or made, and which is so approved after the record date fixed for the determination of shareholders entitled to receive such dividend, such adjustment shall, immediately upon such approval being given by such meeting, become effective retroactively to immediately after such record date.

6.3.3 Concurrent Adjustment Events:

If the Issuer shall declare a dividend in, or make a free distribution or bonus issue of, Shares which dividend, issue or distribution is to be paid or made to shareholders as of a record date which is also:

(i) the record date for the issue of any rights or warrants which requires an adjustment of the Conversion Price pursuant to Conditions 6.3.5, 6.3.6 or 6.3.7;

(ii) the day immediately before the date of issue of any securities convertible into or exchangeable for Shares which requires an adjustment of the Conversion Price pursuant to Condition 6.3.9;

(iii) the day immediately before the date of issue of any Shares which requires an adjustment of the Conversion Price pursuant to Condition 6.3.10 or, if applicable, the record date for determination of stock dividend entitlement as referred to in Condition 6.3.10;

(iv) the day immediately before the date of issue of any rights, options or warrants which requires an adjustment of the Conversion Price pursuant to Condition 6.3.11; or

(v) determined by the Issuer and notified by the Issuer to the Trustee in writing to be the relevant date for an event or circumstance which requires an adjustment to the Conversion Price pursuant to Condition 6.3.12,

then (except where such dividend, bonus issue or free distribution gives rise to a Retroactive Adjustment of the Conversion Price under this Condition 6.3.3) no adjustment of the Conversion Price in respect of such dividend, bonus issue or free distribution shall be made under Conditions 6.3.1 and 6.3.2, but in lieu thereof an adjustment shall be made under Conditions 6.3.5, 6.3.6, 6.3.7, 6.3.9, 6.3.10, 6.3.11 or 6.3.12 (as the case may require) by including in the denominator of the fraction described therein the aggregate number of Shares to be issued pursuant to such dividend, bonus issue or free distribution.

6.3.4 Capital Distribution and Cash Dividend:

Adjustment:

(i) If the Issuer shall pay or make to its shareholders any Capital Distribution (as defined below), then the Conversion Price shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{CMP - fmv}{CMP}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

CMP = the Current Market Price (as defined in Condition 6.3.15 below) per Share on the last Trading Day preceding the date on which the relevant Dividend is first publicly announced.

fmv = the portion of the Fair Market Value (as defined below), with such portion being determined by dividing the Fair Market Value of the aggregate Capital Distribution by the number of Shares entitled to receive the relevant Capital Distribution (or, in the case of a purchase or redemption of Shares or any depositary or other receipts or certificates representing shares by or on behalf of the Issuer, by the number of Shares in issue immediately prior to such purchase or redemption), of the Capital Distribution attributable to one Share less any consideration payable for the same to the Issuer by the shareholder.

(ii) If the Issuer shall pay or make to its shareholders any Cash Dividend, then, in such case, the Conversion Price shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{CMP - C}{CMP}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

CMP = the Current Market Price (as defined in Condition 6.3.15 below) per Share on the last Trading Day preceding the date on which the relevant Dividend is first publicly announced.

C = the Cash Dividend attributable to one Share.

Effective date of adjustment

Any adjustment pursuant to this Condition 6.3.4 shall become effective immediately after the record date for the determination of shareholders entitled to receive the relevant Dividend; provided that (a) in the case of such a Dividend which must, under applicable law of Korea, be submitted for approval to a general meeting of shareholders or be approved by a meeting of the Board of Directors of the Issuer before such Dividend may legally be made and is so approved after the record date fixed for the determination of shareholders entitled to receive such Dividend, such adjustment shall, immediately upon such approval being given by such

meeting, become effective retroactively to immediately after such record date and (b) in the case of Condition 6.3.4(i), if the Fair Market Value of the relevant Capital Distribution cannot be determined until the record date fixed for the determination of shareholders entitled to receive the relevant Dividend, such adjustment shall, immediately upon such Fair Market Value being determined, become effective retroactively to immediately after such record date.

If such Dividend is not so paid, the Conversion Price shall again be adjusted to be the Conversion Price which would then be in effect if such Dividend had not been approved.

For the purposes of this Condition:

"Capital Distribution" means any Dividend other than a Cash Dividend.

In making any calculation for the purposes of this Condition 6.3.4, such adjustments (if any) shall be made as an independent investment or commercial bank of international repute selected by the Issuer and notified in writing to the Trustee (an "Independent Financial Institution") considers appropriate to reflect any consolidation, subdivision or re-classification of any Share or the issue of Shares by way of capitalisation of profits or reserves, or any like or similar event or any adjustment to the Conversion Price. The fees of any Independent Financial Institution shall be at the expense of and paid by the Issuer.

"Cash Dividend" means (i) any Dividend which is to be paid in cash and (ii) any Dividend determined to be a Cash Dividend pursuant to paragraph (a) of the definition "Dividend", and for the avoidance of doubt, a Dividend falling within paragraph (c) of the definition "Dividend" shall be treated as not being a Cash Dividend.

"Dividend" means any dividend or distribution whether of cash or other property or assets or evidences of the Issuer's indebtedness, whenever paid or made and however described (including any modification of rights to dividends of Shares); provided that:

(a) where a Cash Dividend is announced which is to be, or may at the election of a shareholder or shareholders be, satisfied by the issue or delivery of Shares or other property or assets, or where a capitalisation of profits or reserves is announced which is to be, or may at the election of a shareholder or shareholders be, satisfied by the payment of a Dividend, then for the purposes of this definition, the Dividend in question shall be treated as a Dividend of (i) such Cash Dividend or (ii) the Fair Market Value (on the date of announcement of such Dividend or date of capitalisation (as the case may be) or, if later, the date on which the number of Shares (or amount of property or assets, as the case may be) which may be issued or delivered is determined) of such Shares or other property or assets if such Fair Market Value is greater than the Fair Market Value of such Cash Dividend;

(b) any issue or distribution of Shares falling within Condition 6.3.2 shall be disregarded; and

(c) a purchase or redemption of ordinary share capital by or on behalf of the Issuer shall not constitute a Dividend unless, in the case of purchases of Shares by or on behalf of the Issuer, the volume weighted average price per Share (before expenses) on any one day in respect of such purchases exceeds the Current Market Price per Share either (1) on that day (or if such day is not a Trading Day, the immediately preceding Trading Day), or (2) where an announcement (excluding for the avoidance of doubt for these purposes, any general authority for such purchases or redemptions approved by a general meeting of shareholders of the Issuer or any notice convening such a meeting of shareholders) has been made of the intention to purchase Shares at some future date at a specified price, on the Trading Day immediately preceding the date of such announcement, in which case such purchase shall be deemed to constitute a Dividend (but not a Cash Dividend) to the extent that the aggregate price paid (before expenses) in respect of such Shares purchased by or on behalf of the Issuer exceeds the product of (i) the Current Market Price per Share

determined as aforesaid and (ii) the number of Shares so purchased; provided that (x) any purchase or redemption of ordinary share capital of the Issuer made to dissenting shareholders upon exercise by dissenting shareholders of their appraisal rights under the Korean Commercial Code and the Financial Investment Services and Capital Markets Act of Korea will not constitute a Dividend and (y) any purchase or redemption of ordinary share capital of the Issuer effectuated through the KRX KOSPI Market at the then Prevailing Market Price (as defined below) will not constitute a Dividend so long as any such purchase or redemption is made in accordance with Korean law and the rules and regulations of the Korea Exchange (without giving effect to any waivers that may be obtained therefrom), is not a general offer and will not trigger a requirement for a general offer under the rules of the Korea Exchange and does not constitute a Tender Offer (as defined below).

"Fair Market Value" means, with respect to any asset, security, option, other right or property on any date, the fair market value of that asset, security, option, other right or property as determined in good faith by an Independent Financial Institution, provided that (i) the Fair Market Value of a Cash Dividend paid or to be paid shall be the amount of such Cash Dividend; (ii) the Fair Market Value of any other cash amount shall be equal to such cash amount and (iii) where shares, options, warrants or other rights are publicly traded in a market of adequate liquidity (as determined by the Independent Financial Institution) the fair market value of such shares, options, warrants or other rights shall equal the arithmetic mean of the daily volume weighted average prices of such shares, options, warrants or other rights during the period of five trading days on the relevant market commencing on the first such trading day such shares, options, warrants or other rights are publicly traded and in the case of (i) translated into Korean Won to the extent not declared or paid in such currency, at the Prevailing Rate.

"Tender Offer" means purchases or redemptions made by or on behalf of the Issuer or its Subsidiaries of 5% or more of the ordinary share capital of the Issuer in any twelve-month period.

"Prevailing Market Price" means the price prevailing on the relevant exchange on such day prior to the time that any purchase is made or any purchase order is placed by or on behalf of the Issuer.

6.3.5 Rights or Options Issued to Shareholders:

Adjustment: If the Issuer shall grant, issue or offer to the holders of Shares rights or options entitling them to subscribe for or purchase Shares:

(a) at a consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) which is fixed on or prior to the record date mentioned below and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced; or

(b) at a consideration per Share receivable by the Issuer which is fixed after the record date mentioned below and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced,

then the Conversion Price in effect (in a case within (a) above) on the record date for the determination of shareholders entitled to receive such rights or options or (in a case within (b) above) on the date the Issuer fixes the said consideration shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea (in a case within (a) above) on such record date or (in a case within (b) above) on the date the Issuer fixes the said consideration.

n = the number of Shares initially to be issued upon exercise of such rights or options at the said consideration being (aa) the number of Shares which underwriters have agreed to underwrite as referred to below or, as the case may be, (bb) the number of Shares for which applications are received from shareholders as referred to below save to the extent already adjusted for under (aa).

v = the number of Shares which the aggregate consideration receivable by the Issuer (determined as provided in Condition 6.3.16) would purchase at such Current Market Price per Share specified in (a) or, as the case may be, (b) above.

Effective date of adjustment: Subject as provided below, such adjustment shall become effective immediately after the latest date for the submission of applications for such Shares by shareholders entitled to the same pursuant to such rights or options or (if later) immediately after the Issuer fixes the said consideration but retroactively to immediately after the record date mentioned above.

Rights or Options not taken up by shareholders: If, in connection with a grant, issue or offer to the holders of Shares of rights or options entitling them to subscribe for or purchase Shares, any Shares which are not subscribed for or purchased by the persons entitled thereto are underwritten by other persons prior to the latest date for the submission of applications for such Shares, an adjustment shall be made to the Conversion Price in accordance with the above provisions which shall become effective immediately after the date the underwriters agree to underwrite the same or (if later) immediately after the Issuer fixes the said consideration but retroactively to immediately after the record date mentioned above.

If, in connection with a grant, issue or offer to the holders of Shares of rights or options entitling them to subscribe for or purchase Shares, any such Shares which are not subscribed for or purchased by the underwriters who have agreed to underwrite as referred to above or by the shareholders entitled thereto (or persons to whom shareholders have transferred such rights or options) who have submitted applications for such Shares as referred to above are offered to and/or subscribed by others, no further adjustment shall be made to the Conversion Price by reason of such offer and/or subscription.

6.3.6 Warrants Issued to Shareholders:

Adjustment: If the Issuer shall grant, issue or offer to the holders of Shares warrants entitling them to subscribe for or purchase Shares:

(a) at a consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) which is fixed on or prior to the record date for the determination of shareholders entitled to receive such warrants and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced; or

(b) at a consideration per Share receivable by the Issuer which is fixed after the record date mentioned above and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced,

then the Conversion Price in effect (in a case within (a) above) on the record date for the determination of shareholders entitled to receive such warrants or (in a case within (b) above) on the date the Issuer fixes the said consideration shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea (in a case within (a) above) on such record date or (in a case within (b) above) on the date the Issuer fixes the said consideration.

n = the number of Shares to be issued upon exercise of such warrants at the said consideration which, where no applications by shareholders entitled to such warrants are required, shall be based on the number of warrants issued. Where applications by shareholders entitled to such warrants are required, the number of such Shares shall be calculated based upon (aa) the number of warrants which underwriters have agreed to underwrite as referred to below or, as the case may be, (bb) the number of warrants for which applications are received from shareholders as referred to below save to the extent already adjusted for under (aa).

v = the number of Shares which the aggregate consideration receivable by the Issuer (determined as provided in Condition 6.3.16) would purchase at such Current Market Price per Share specified in (a) or, as the case may be, (b) above.

Effective date of adjustment: Subject as provided below, such adjustment shall become effective (i) where no applications for such warrants are required from shareholders entitled to the same, upon their issue and (ii) where applications by shareholders entitled to the same are required as aforesaid, immediately after the latest date for the submission of such applications or (if later) immediately after the Issuer fixes the said consideration but in all cases retroactively to immediately after the record date mentioned above.

Warrants not subscribed for by shareholders: If, in connection with a grant, issue or offer to the holders of Shares of warrants entitling them to subscribe for or purchase Shares in the circumstances described in (a) and (b) of this Condition 6.3.6, any warrants which are not subscribed for or purchased by the shareholders entitled thereto are underwritten by others prior to the latest date for the submission of applications for such warrants, an adjustment shall be made to the Conversion Price in accordance with the above provisions which shall become effective immediately after the date the underwriters agree to underwrite the same or (if later) immediately after the Issuer fixes the said consideration but retroactively to immediately after the record date mentioned above.

If, in connection with a grant, issue or offer to the holders of Shares of warrants entitling them to subscribe for or purchase Shares, any warrants which are not subscribed for or purchased by the underwriters who have agreed to underwrite as referred to above or by the shareholders entitled thereto (or persons to whom shareholders have transferred the right to purchase such warrants) who have submitted applications for such warrants as referred to above are offered to and/or subscribed by others, no further adjustment shall be made to the Conversion Price by reason of such offer and/or subscription.

6.3.7 Issues of Rights or Warrants for Equity-related Securities to Shareholders:

Adjustment: If the Issuer shall grant, issue or offer to the holders of Shares rights or warrants entitling them to subscribe for or purchase any securities convertible into or exchangeable for Shares:

(a) at a consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) which is fixed on or prior to the record date mentioned below and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced; or

(b) at a consideration per Share receivable by the Issuer (determined as aforesaid) which is fixed after the record date mentioned below and is less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced,

then the Conversion Price in effect (in a case within (a) above) on the record date for the determination of shareholders entitled to receive such rights or warrants or (in a case within (b) above) on the date the Issuer fixes the said consideration shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea (in a case within (a) above) on such record date or (in a case within (b) above) on the date the Issuer fixes the said consideration.

n = the number of Shares initially to be issued upon exercise of such rights or warrants and conversion or exchange of such convertible or exchangeable securities at the said consideration being, in the case of rights, (aa) the number of Shares initially to be issued upon conversion or exchange of the number of such convertible or exchangeable securities which the underwriters have agreed to underwrite as referred to below or, as the case may be, (bb) the number of Shares initially to be issued upon conversion or exchange of the number of such convertible or exchangeable securities for which applications are received from shareholders as referred to below save to the extent already adjusted for under (aa) and which, in the case of warrants, where no applications by shareholders entitled to such warrants are required, shall be based on the number of warrants issued. Where applications by shareholders entitled to such warrants are required, the number of such Shares shall be calculated based upon (x) the number of warrants which underwriters have agreed to underwrite as referred to below or, as the case may be; (y) the number of warrants for which applications are received from shareholders as referred to below save to the extent already adjusted for under (x).

v = the number of Shares which the aggregate consideration receivable by the Issuer (determined as provided in Condition 6.3.16) would purchase at such Current Market Price per Share specified in (a) or, as the case may be, (b) above.

Effective date of adjustment: Subject as provided below, such adjustment shall become effective (a) where no applications for such warrants are required from shareholders entitled to the same, upon their issue and (b) where applications by shareholders entitled to the warrants are required as aforesaid and in the case of convertible or exchangeable securities by shareholders entitled to the same pursuant to such rights, immediately after the latest date for the submission of such applications or (if later) immediately after the Issuer fixes the said consideration; but in all cases retroactively to immediately after the record date mentioned above.

Rights or warrants not taken up by shareholders: If, in connection with a grant, issue or offer to the holders of Shares of rights or warrants entitling them to subscribe for or purchase securities convertible into or exchangeable for Shares in the circumstances described in this Condition 6.3.7, any convertible or exchangeable securities or warrants which are not subscribed for or purchased by the shareholders entitled thereto are underwritten by others prior to the latest date for the submission of applications for such convertible or exchangeable securities or warrants, an adjustment shall be made to the Conversion Price in accordance with the above provisions which shall become effective immediately after the date the underwriters agree to underwrite the same or (if later) immediately after the Issuer fixes the said consideration but retroactively to immediately after the record date mentioned above.

If, in connection with a grant, issue or offer to the holders of Shares or rights or warrants entitling them to subscribe for or purchase securities convertible into or exchangeable for Shares, any convertible or exchangeable securities or warrants which are not subscribed for or purchased by the underwriters who have agreed to underwrite as referred to above or by the shareholders entitled thereto (or persons to whom shareholders have transferred such rights or the right to purchase such warrants) who have submitted applications for such convertible or exchangeable securities or warrants as referred to above are offered to and/or subscribed by others, no further adjustment shall be made to the Conversion Price by reason of such offer and/or subscription.

6.3.8 Other Distributions to Shareholders:

Adjustment: If the Issuer shall distribute to the holders of Shares or capital stock of the Issuer (other than Shares), assets (excluding any Dividends), or rights or warrants to subscribe for or purchase Shares or securities (excluding those rights and warrants referred to in Conditions 6.3.5, 6.3.6 and 6.3.7), then the Conversion Price in effect on the record date for the determination of shareholders entitled to receive such distribution shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{CMP - fmv}{CMP}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

CMP = the Current Market Price per Share on the last Trading Day preceding the date on which such distribution is first publicly announced.

fmv = the Fair Market Value of the distribution applicable to one Share less any consideration payable for the same to the Issuer by the shareholder.

Effective date of adjustment: Such adjustment shall become effective immediately after the record date for the determination of shareholders entitled to receive such distribution. Provided that (a) in the case of such a distribution which must, under applicable law of Korea, be submitted for approval to a general meeting of shareholders or be approved by a meeting of the Board of Directors of the Issuer before such distribution may legally be made and is so approved after the record date fixed for the determination of shareholders entitled to receive such distribution, such adjustment shall, immediately upon such approval being given by such meeting, become effective retroactively to immediately after such record date and (b) if the Fair Market Value of the shares of capital stock, assets, rights or warrants so distributed cannot be determined until after the record date fixed for the determination of shareholders entitled to receive such distribution, such adjustment shall, immediately upon such Fair Market Value being determined, become effective retroactively to immediately after such record date.

6.3.9 Issue of Convertible or Exchangeable Securities other than to Shareholders or on Exercise of Warrants:

Adjustment: If the Issuer shall issue any securities convertible into or exchangeable for Shares (except in any of the circumstances described in Condition 6.3.7 and Condition 6.3.11) or grant such rights in respect of any existing securities and the consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) shall be less than the Current Market Price per Share on the last Trading Day preceding the date on which such issue or grant is first publicly announced, then the Conversion Price in effect immediately prior to the date of issue of such convertible or exchangeable securities shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea on the day immediately prior to the date of such issue.

n = the number of Shares to be issued upon conversion or exchange of such convertible or exchangeable securities at the initial conversion or exchange price or rate.

v = the number of Shares which the aggregate consideration receivable by the Issuer would purchase at such Current Market Price per Share.

Effective date of adjustment: Such adjustment shall become effective as of the calendar day in Korea corresponding to the calendar day at the place of issue on which such convertible or exchangeable securities are issued.

6.3.10 Other Issues at less than Current Market Price:

Adjustment: If the Issuer shall issue any Shares (other than Shares issued upon conversion or exchange of any convertible or exchangeable securities issued by the Issuer or upon exercise of any rights, options or warrants granted, offered or issued by the Issuer or in any of the circumstances described in any preceding provision of this Condition 6.3), for a consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) less than the Current Market Price per Share on the last Trading Day preceding the date on which such issue is first publicly announced, then the Conversion Price in effect immediately prior to the issue of such additional Shares shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea on the day immediately prior to the date of issue of such additional Shares.

n = the number of additional Shares issued as aforesaid.

v = the number of Shares which the aggregate consideration receivable by the Issuer (determined as provided in Condition 6.3.16) would purchase at such Current Market Price per Share.

Effective date of adjustment: Such adjustment shall become effective as of the calendar day in Korea of the issue of such additional Shares.

6.3.11 Issue of Equity-related Securities:

Adjustment: If the Issuer shall grant, issue or offer options, warrants or rights (excluding those rights, options and warrants referred to in Conditions 6.3.5, 6.3.6, 6.3.7 and 6.3.8) to subscribe for or purchase Shares or securities convertible into or exchangeable for Shares and the consideration per Share receivable by the Issuer (determined as provided in Condition 6.3.16) shall be less than the Current Market Price per Share on the last Trading Day preceding the date on which such grant, issue or offer is first publicly announced, then the Conversion Price in effect immediately prior to the date of the offer, grant or issue of such rights, options or warrants shall be adjusted in accordance with the following formula:

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

where:

NCP and OCP have the meanings ascribed thereto in Condition 6.3.2.

N = the number of Shares outstanding (having regard to Condition 6.3.17) at the close of business in Korea on the day immediately prior to the date of such issue.

n = the number of Shares to be issued on exercise of such rights, options or warrants and (if applicable) conversion or exchange of such convertible or exchangeable securities at the said consideration.

v = the number of Shares which the aggregate consideration receivable by the Issuer (determined as provided in Condition 6.3.16) would purchase at such Current Market Price per Share.

Effective date of adjustment: Such adjustment shall become effective as of the calendar day in Korea corresponding to the calendar day at the place of issue on which such rights, options or warrants are issued.

6.3.12 Analogous Events and Modifications:

If (a) the rights of conversion or exchange, purchase or subscription attaching to any options, rights or warrants to subscribe for or purchase Shares or any securities convertible into or exchangeable for, or which carry rights to subscribe for or purchase Shares are modified (other than pursuant to and as provided in the terms and conditions of such options, rights, warrants or securities as originally issued) or (b) the Issuer determines that any other event or circumstance has occurred which has or would have an effect on the position of the Bondholders as a class compared with the position of the holders of all the securities (and options and rights relating thereto) of the Issuer, taken as a class which is analogous to any of the events referred to in Conditions 6.3.1 to 6.3.11, then, in any such case, the Issuer shall promptly notify the Trustee in writing thereof and the Issuer shall consult with an Independent Financial Institution as to what adjustment, if any, should be made to the Conversion Price to preserve the value of the Conversion Right of Bondholders and will make any such adjustment. All costs, charges, liabilities and expenses incurred in connection with the appointment, retention, consultation and remuneration of any Independent Financial Institution appointed under the Conditions shall be borne by the Issuer.

6.3.13 Simultaneous Issues of Different Classes of Shares:

In the event of simultaneous issues of two or more classes of share capital comprising Shares or rights or warrants in respect of, or securities convertible into or exchangeable for, two or more classes of share capital comprising Shares, then, for the purposes of this Condition, the formula

$$NCP = OCP \times \left[\frac{N + v}{N + n}\right]$$

shall be restated as

$$NCP = OCP \times \left[\frac{N + v1 + v2 + v3}{N + n1 + n2 + n3}\right]$$

where v1 and n1 shall have the same meanings as "v" and "n" but by reference to one class of Shares, v2 and n2 shall have the same meanings as "v" and "n" but by reference to a second class of Shares, v3 and n3 shall have the same meanings as "v" and "n" but by reference to a third class of Shares and so on.

6.3.14 No Adjustment for Certain Issuances to Directors, Officers or Employees:

Notwithstanding any provision herein to the contrary, a grant, issue or offer of Shares, options, rights, warrants or other securities to any director, officer or employee of the Issuer as part of such person's compensation will not result in the adjustment of the Conversion Price; provided that (i) all such grants, issues and offers are made pursuant to employee stock ownership or grant plans or option scheme or plans which are in compliance with applicable Korean laws and regulations and the rules of the Korea Exchange or if applicable, the rules of the Alternative Stock Exchange and (ii) if the total number of Shares so issued or that may be issued as a result of the conversion, exchange or exercise of such convertible or exchangeable securities or such options, rights, warrants or other securities so granted, issued or offered (whether in a single grant, issue or offering or a series of grants, issuances or offerings) during any 12-month period up to and including the date of such grant representing, in aggregate, over 2% of the average number of issued and outstanding Shares (including any treasury Shares) during such 12-month period, in which case only the portion of such Shares so issued or which may be issued that exceeds 2% of the average number of issued and outstanding Shares (including any treasury Shares) during the relevant 12-month period shall be taken into account in determining adjustment of the Conversion Price pursuant to Condition 6.3.

6.3.15 Certain Definitions:

For the purposes of these Conditions:

"Alternative Stock Exchange" means at any time, in the case of the Shares, if they are not at that time listed and traded on the KRX KOSPI Market, the principal stock exchange or securities market on which the Shares are then listed or quoted or dealt in.

"Closing Price" of the Shares for each Trading Day shall be the last reported transaction price of the Shares on the KRX KOSPI Market for such day or, if no transaction takes place on such day, the average of the closing bid and offered prices of Shares for such day as furnished by a leading independent securities firm licensed to trade on the KRX KOSPI Market selected from time to time by the Issuer.

"Current Market Price" per Share on any date means the arithmetic average of the daily Closing Prices of the relevant Shares for the twenty consecutive Trading Days (as defined below) ending on and including the Trading Day immediately preceding such date. If the Issuer has more than one class of share capital comprising Shares, then the relevant Current Market Price for Shares shall be the price for that class of Shares the issue of which (or of rights, options or warrants in respect of, or securities convertible into or exchangeable for, that class of Shares) gives rise to the adjustment in question.

If during the said twenty Trading Days or any period thereafter up to but excluding the date as of which the adjustment of the Conversion Price shall be effected, any event (other than the event which requires the adjustment in question) shall occur which gives rise to a separate adjustment to the Conversion Price under the provisions of these Conditions, then the Current Market Price as determined above shall be adjusted in such manner and to such extent as an Independent Financial Institution shall in its absolute discretion deem appropriate and fair to compensate for the effect thereof.

"Trading Day" means a day when the KRX KOSPI Market is open for business, but does not include a day when (a) no such last transaction price or closing bid and offered prices is/are reported and (b) (if the Shares are not listed or admitted to trading on such exchange) no such closing bid and offered prices are furnished as aforesaid.

If the Shares are no longer listed on the KRX KOSPI Market and have been listed on an Alternative Stock Exchange, references in the above definitions to the KRX KOSPI Market will be taken as references to the Alternative Stock Exchange; provided that, as necessary, Closing Prices on such exchanges will be translated into Korean Won at the Prevailing Rate. The "Prevailing Rate" applicable to any Trading Day shall be the market average exchange rate effective for such Trading Day as announced by Seoul Money Brokerage Services, Ltd. or any successor entity on the relevant page on Bloomberg or, if there is no such page, on such other information service provider that displays the relevant information, or if such market average exchange rate is not available, such rate of exchange as may be determined in good faith by an Independent Financial Institution to be the spot rate ruling at the close of business on that date (or if no such rate is available on that date the equivalent rate on the immediately preceding date on which such a rate is available) for exchanges of Korean Won and the applicable currency.

6.3.16 Consideration Receivable by the Issuer:

For the purposes of any calculation of the consideration receivable by the Issuer pursuant to Conditions 6.3.5, 6.3.6, 6.3.7, 6.3.8, 6.3.9, 6.3.10, 6.3.11, 6.3.12 and 6.3.13 above, the following provisions shall be applicable:

(a) in the case of the issue of Shares for cash, the consideration shall be the amount of such cash;

(b) in the case of the issue of Shares for a consideration in whole or in part other than cash, the consideration other than cash shall be deemed to be the Fair Market Value thereof;

(c) in the case of the issue (whether initially or upon the exercise of rights or warrants) of securities convertible into or exchangeable for Shares, the aggregate consideration receivable by the Issuer shall be deemed to be the consideration received by the Issuer for such securities and (if applicable) rights or warrants plus the additional consideration (if any) to be received by the Issuer upon (and assuming) the conversion or exchange of such securities at the initial conversion or exchange price or rate and (if applicable) the exercise of such rights or warrants at the initial subscription or purchase price (the consideration in each case to be determined in the same manner as provided in this Condition 6.3.16) and the consideration per Share receivable by the Issuer shall be such aggregate consideration divided by the number of Shares to be issued upon (and assuming) such conversion or exchange at the initial conversion or exchange price or rate and (if applicable) the exercise of such rights or warrants at the initial subscription or purchase price;

(d) in the case of the issue of rights, options or warrants to subscribe for or purchase Shares, the aggregate consideration receivable by the Issuer shall be deemed to be the consideration received by the Issuer for any such rights, options or warrants plus the additional consideration to be received by the Issuer upon (and assuming) the exercise of such rights, options or warrants at the initial subscription or purchase price (the consideration in each case to be determined in the same manner as provided in this Condition 6.3.16) and the consideration per Share receivable by the Issuer shall be such aggregate consideration divided by the number of Shares to be issued upon (and assuming) the exercise of such rights, options or warrants at the initial subscription or purchase price;

(e) if any of the consideration referred to in any of the preceding paragraphs of this Condition 6.3.16 is receivable in a currency other than Korean Won, such consideration shall (in any case where there is a fixed rate of exchange between the Korean Won and the relevant currency for the purposes of the issue of the Shares, the conversion or exchange of such securities or the exercise of such rights, options or warrants) be translated into Korean Won for the purposes of this Condition 6.3.16 at such fixed rate of exchange and shall (in all other cases) be translated into Korean Won at the Prevailing Rate;

(f) in the case of the issue of Shares (including, without limitation, to employees under any employee bonus or profit sharing arrangements) credited as fully paid out of retained earnings or capitalisation of reserves at their par value, the aggregate consideration receivable by the Issuer shall be deemed to be zero (and accordingly the number of Shares which such aggregate consideration receivable by the Issuer could purchase at the relevant Current Market Price per Share shall also be deemed to be zero); and

(g) in making any such determination, no deduction shall be made for any commissions or any expenses paid or incurred by the Issuer.

6.3.17 Cumulative Adjustments:

If, at the time of computing an adjustment (the "later adjustment") of the Conversion Price pursuant to any of Conditions 6.3.2, 6.3.5, 6.3.6, 6.3.7, 6.3.9, 6.3.10, 6.3.11, 6.3.12 and 6.3.13 above, the Conversion Price already incorporates an adjustment made (or taken or to be taken into account pursuant to the proviso to Condition 6.3.18) to reflect an issue of Shares or of securities convertible into or exchangeable for Shares or of rights, options or warrants to subscribe for or purchase Shares or securities, to the extent that the number of such Shares or securities taken into account for the purposes of calculating such adjustment exceeds the number of such Shares in issue at the time relevant for ascertaining the number of outstanding Shares for the purposes of computing the later adjustment, such excess Shares shall be deemed to be outstanding for the purposes of making such computation.

6.3.18 Minor Adjustments:

No adjustment of the Conversion Price shall be required if the adjustment would be less than 1% of the then current Conversion Price; provided that any adjustment which by reason of this Condition 6.3.18 is not required to be made shall be carried forward and taken into account (as if such adjustment had been made at the time when it would have been made but for the provisions of this Condition 6.3.18) in any subsequent adjustment. All calculations under this Condition 6.3 shall be rounded to the nearest Won 1 with Won 0.5 being rounded up to the next Won 1. Except as otherwise set out in Condition 6.3.19, the Conversion Price may be reduced at any time by the Issuer.

6.3.19 Minimum Conversion Price:

Notwithstanding the provisions of this Condition, the Issuer covenants that:

(a) the Conversion Price shall not be reduced below the par value of the Shares (Won 500 at the date hereof) as a result of any adjustment made hereunder unless, under applicable law then in effect, Bonds may be converted at such reduced Conversion Price into legally issued, fully-paid and non-assessable Shares; and

(b) it will not take any corporate or other action which might result in the Conversion Price being reduced pursuant to this Condition 6 below the level permitted by (i) applicable Korean laws and regulations from time to time (if any) or (ii) applicable Korean regulatory authorities where the approval of such regulatory authority has not been obtained.

6.3.20 Reference to "fixed":

Any references herein to the date on which a consideration is "fixed" shall, where the consideration is originally expressed by reference to a formula which cannot be expressed as an actual cash amount until a later date, be construed as a reference to the first day on which such actual cash amount can be ascertained.

6.3.21 Upward Adjustment:

No adjustment involving an increase in the Conversion Price will be made, except (a) in the case of a consolidation or a re-classification of the Shares, after which the number of Shares outstanding has decreased, as referred to in Condition 6.3.1, (b) in the case of a capital reduction, immediately after which the value of the Shares outstanding has increased as a result or (c) in the case of an occurrence of any event similar to the foregoing, immediately after which the value of the Shares outstanding has increased as a result.

6.3.22 Trustee not Obliged to Monitor:

Neither the Trustee nor the Agents shall be under any duty to monitor whether any event or circumstance has happened or exists which may require an adjustment to be made to the Conversion Price under this Condition 6.3, or be under any duty to calculate, make or check any adjustment to the Conversion Price, and will not be responsible or liable to Bondholders or any other person for any loss arising from any failure by it to do so.

6.3.23 Notice to Trustee:

The Issuer shall send the Trustee and the Agents a certificate signed by a duly authorised officer of the Issuer setting out particulars relating to adjustment of the Conversion Price and the Conversion Price after such adjustment and the effective date thereof.

6.3.24 Independent Financial Institution:

If the Issuer fails to select an Independent Financial Institution when required in this Condition 6.3 and Condition 6.1.6, the Trustee may (at its absolute discretion and at the expense of the Issuer) select such an Independent Financial Institution and shall not be liable for any determination made by such Independent Financial Institution.

6.4 Undertakings

6.4.1 The Issuer has undertaken in the Trust Deed, *inter alia*, that so long as any Bond remains outstanding, save with the approval of an Extraordinary Resolution (as defined in the Trust Deed) of the Bondholders or with the approval of the Trustee where, in the opinion of the Trustee, it is not materially prejudicial to the interests of Bondholders to give such approval:

(i) it will use its best efforts to (a) obtain and maintain a listing of the Bonds on the Singapore Exchange Securities Trading Limited (the "SGX-ST"); (b) maintain a listing for all the issued Shares on the KRX KOSPI Market; (c) obtain and maintain a listing for all the Shares to be delivered on the exercise of the Conversion Rights attaching to the Bonds on the KRX KOSPI Market and (d) if the Issuer is unable to obtain or maintain such listings, obtain and maintain a listing for all the Bonds and the Shares to be delivered on the exercise of the Conversion Rights, on an Alternative Stock Exchange and will forthwith give notice to the Bondholders in accordance with Condition 17 of the listing or delisting of the Shares or the Bonds (as a class) by any of such stock exchanges;

(ii) it will entrust the number of Shares that are deliverable upon conversion of all outstanding Bonds (as adjusted from time to time in tandem with the Conversion Price pursuant to Condition 6.3) with the KSD and will not transfer, or create or attempt to create, assume or permit to subsist, any mortgage, charge, pledge, hypothecation, lien or other encumbrance over, such Shares;

(iii) it will pay the expenses of the delivery of, and all expenses of obtaining listing for, Shares arising on conversion of the Bonds, except for Taxes payable by a Bondholder pursuant to Condition 6.2.2;

(iv) it will not make any reduction of its ordinary share capital or any uncalled liability in respect thereof or of any share premium account or capital redemption reserve fund (except, in each case, as permitted by applicable law and that results in (or would, but for the provision of these Conditions relating to rounding or the carry forward of adjustments, result in) a downward adjustment to the Conversion Price or is otherwise taken into account for the purposes of determining whether such a downward adjustment should be made);

(v) it will not take any action described in clause (b) or (c) of Condition 6.3.21 which would result in an increase in the Conversion Price; and

(vi) it will not make any offer, issue or distribute or take any action the effect of which would be to reduce the Conversion Price below the par value of the Shares of the Issuer; provided always that the Issuer shall not be prohibited from purchasing its Shares to the extent permitted by law.

6.4.2 The Issuer has also given certain other undertakings in the Trust Deed for the protection of the Conversion Rights.

6.5 Notice of Change in Conversion Prices

The Issuer shall give notice to the Trustee and the Agents in writing and to the Bondholders in accordance with Condition 17 of any adjustment to the Conversion Price as soon as reasonably practicable (and in any event by no later than three Business Days save where otherwise specified in this Condition 6) following such change). The Issuer shall give notice of any such change to the Bondholders as soon as practicable in accordance with Condition 17 and, for so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, the Issuer shall also give notice of any such change to the SGX-ST. Any such notice relating to an adjustment to the Conversion Price shall set forth the event giving rise to the adjustment, the Conversion Price prior to such adjustment, the adjusted Conversion Price and the effective date of such adjustment.

7 PAYMENTS

7.1 Method of Payment

Payment of principal and default interest (if any) will be made by transfer to the registered account of the Bondholder, in each case in accordance with the provisions of the Agency Agreement. Such payment will only be made after surrender of the relevant Certificate at the specified office of any of the Agents. If an amount which is due on the Bonds is not paid in full, the Registrar will annotate the Register with a record of the amount (if any) paid.

7.2 Registered Accounts

For the purposes of this Condition, a Bondholder's registered account means the U.S. dollar account maintained by or on behalf of it with a bank in New York City, details of which appear on the Register at the close of business on the second Payment Business Day before the due date for payment, and a Bondholder's registered address means its address appearing on the Register at that time.

7.3 Applicable Laws

All payments to be made to Bondholders by or on behalf of the Issuer are subject in all cases to (i) any applicable laws and regulations in any applicable jurisdiction, but without prejudice to the provisions of Condition 9, and (ii) any withholding or deduction required pursuant to an agreement described in Section 1471(b) of the U.S. Internal Revenue Code of 1986 (the "Code") or otherwise imposed pursuant to Sections 1471 through 1474 of the Code, any regulations or agreements thereunder, any official interpretations thereof, or (without prejudice to the provisions of Condition 9) any law implementing an intergovernmental approach thereto. No commissions or expenses shall be charged to the Bondholders in respect of such payments.

7.4 Payment Initiation

Where payment is to be made by transfer to a registered account, payment instructions (for value on the due date or, if that is not a Payment Business Day, for value on the first following day which is a Payment Business Day) will be initiated on the due date for payment or, in the case of a payment of principal, if later, on the Payment Business Day on which the relevant Certificate is surrendered at the specified office of an Agent.

So long as the Bonds are represented by the Global Certificate and the Global Certificate is held on behalf of Euroclear or Clearstream or an Alternative Clearing System (as defined in the form of the Global Certificate), payments in respect of the Global Certificate are expected to be made by transfer through Euroclear or Clearstream or the Alternative Clearing System.

7.5 Default Interest and Delay in Payment

7.5.1 If the Issuer fails to pay any sum in respect of the Bonds when the same becomes due and payable under these Conditions, interest shall accrue on the overdue sum (both before and after any judgment) at the rate of 3% per annum from the due date up to the date on which payment in full of all sums due and unpaid in respect of the Bonds is made. Such default interest shall accrue on the basis of a 360-day year consisting of 12 months of 30 days each and, in the case of an incomplete month, the number of days elapsed.

7.5.2 Bondholders will not be entitled to any interest or other payment for any delay after the due date in receiving the amount due if the due date is not a Payment Business Day, or if the Bondholder is late in surrendering its Certificate (if required to do so).

7.6 Payment Business Day

For the purposes of these Conditions, "Payment Business Day" means a day other than a Saturday or Sunday on which commercial banks are open for business in New York City, Seoul and London and the city in which the specified office of the Principal Agent is located and, in the case of the surrender of a Certificate, in the place where the Certificate is surrendered.

8 REDEMPTION, PURCHASE AND CANCELLATION

8.1 Maturity

Unless previously redeemed, converted or repurchased and cancelled as provided herein, the Issuer will redeem each Bond at its principal amount on April 28, 2023 (the "Maturity Date"). The Issuer may not redeem the Bonds at its option prior to that date except as provided in Condition 8.2 or Condition 8.3 below (but without prejudice to Condition 10).

8.2 Redemption at the Option of the Issuer

8.2.1 At any time from and including April 28, 2022 but not less than 30 Business Days prior to the Maturity Date, the Issuer may, having given not less than 30 nor more than 60 days' notice in accordance with Condition 17 to the Bondholders, the Trustee and the Principal Agent (which notice will be irrevocable), redeem the Bonds in whole but not in part at their aggregate principal amount on the date fixed for redemption; provided that no such redemption may be made unless the Closing Price (translated into U.S. dollars at the Prevailing Rate) of the Shares for each of 20 Trading Days in the period of 30 consecutive Trading Days ending on the Trading Day immediately prior to the date upon which notice of such redemption is given pursuant to Condition 17, was at least 130% of the prevailing Conversion Price (translated into U.S. dollars at the Fixed Exchange Rate). Upon expiry of such notice, the Issuer shall be bound to redeem such Bonds in accordance with this Condition. If there shall occur an event giving rise to a change in the Conversion Price during any such 30 consecutive Trading Day period, appropriate adjustments for the relevant days approved by two independent investment banks (acting as experts) selected by the Issuer (at the expense of the Issuer) and notified in writing to the Trustee, shall be made for the purpose of calculating the Closing Price for such days.

8.2.2 If at any time the aggregate principal amount of the Bonds outstanding is less than 10% of the aggregate principal amount originally issued (including any Bonds issued pursuant to Condition 16), the Issuer shall have the option to redeem such outstanding Bonds in whole but not in part at their aggregate principal amount on the date fixed for redemption. The Issuer will give at least 30 days' but not more than 60 days' prior notice pursuant to Condition 17 to the Bondholders, the Trustee and the Principal Agent for such redemption. Upon expiry of such notice, the Issuer shall be bound to redeem such Bonds in accordance with this Condition.

8.3 Redemption for Taxation Reasons

8.3.1 Subject to Condition 8.3.3, at any time the Issuer may, having given not less than 30 nor more than 60 days' notice to the Trustee, the Principal Agent and the Bondholders (which notice shall be irrevocable) redeem the Bonds in whole but not in part at their aggregate principal amount on the date fixed for redemption ("Tax Redemption Date"), if (i) the Issuer provides to the Trustee immediately prior to the giving of such notice an opinion in form and substance satisfactory to the Trustee of independent legal counsel of recognised international standing to the effect that such change or amendment has occurred (irrespective of whether such amendment or change is then effective) and that the Issuer has or will become obliged to pay Additional Amounts pursuant to Condition 9 as a result of any change in, or amendment to, the laws or regulations of Korea or any political subdivision or any authority thereof or therein having power to tax, or any change in the general application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after October 28,

2020, and (ii) such obligation cannot be avoided by the Issuer taking all reasonable measures available to it; provided that no such notice of redemption shall be given earlier than 90 days prior to the earliest date on which the Issuer would be obliged to pay such Additional Amounts were a payment in respect of the Bonds then due. Prior to the publication of any notice of redemption pursuant to this paragraph, the Issuer shall deliver to the Trustee (a) an officer's certificate signed by the chief financial officer, chief accounting officer or chief executive officer of the Issuer stating that the obligation referred to in (i) above cannot be avoided by the Issuer (taking all reasonable measures available to it) and (b) the opinion of counsel referred to in (i) above and the Trustee shall be entitled to accept such certificate and opinion as sufficient evidence thereof, in which event it shall be conclusive and binding on the Bondholders.

8.3.2 Upon the expiry of any such notice, the Issuer will be bound to redeem the Bonds at their aggregate principal amount.

8.3.3 If the Issuer gives a notice of redemption pursuant to this Condition 8.3, each Bondholder will have the right to elect that all or a portion of its Bond(s) (in denominations of US$200,000 or integral multiples of US$100,000 in excess thereof) shall not be redeemed and that the provisions of Condition 9 shall not apply in respect of any payment of principal to be made in respect of such Bond(s) which falls due after the relevant Tax Redemption Date whereupon no, subject to the following sentence, Additional Amounts shall be payable in respect thereof pursuant to Condition 9 and payment of all amounts shall be made subject to the deduction or withholding of the taxation required to be withheld or deducted by the government of Korea or any authority thereof or therein having power to tax. For the avoidance of doubt, any Additional Amounts which had been payable in respect of the Bonds as a result of the laws or regulations of the government of Korea or any authority thereof or therein having power to tax prior to October 28, 2020 will continue to be payable to such Bondholders. To exercise such right, the holder of the relevant Bond must complete, sign and deposit at the specified office of any Paying Agent a duly completed and signed notice of non-redemption, in the form for the time being current, obtainable from the specified office of any Paying Agent on or before the day falling 15 days prior to the Tax Redemption Date.

8.4 Redemption for Change of Control

8.4.1 Following the occurrence of a Change of Control (as defined below) and to the extent permitted by applicable law, each Bondholder will have the right at such holder's option to require the Issuer to redeem all or a portion of such holder's Bonds (provided that the remaining portion is in an Authorised Denomination) on the Change of Control Put Date at the principal amount of such Bonds to be redeemed. To exercise such right, the holder of the relevant Bond must complete, sign and deposit at the specified office of any Paying Agent a duly completed and signed notice of redemption, in the form for the time being current, obtainable from the specified office of any Paying Agent ("Change of Control Put Exercise Notice") together with the Certificate evidencing the Bonds to be redeemed by not later than 10 Business Days prior to the Change of Control Put Date. The "Change of Control Put Date" shall be the date set by the Issuer for such redemption, which shall not be less than 30 days nor more than 60 days after the occurrence of a Change of Control.

For the purposes of this Condition 8.4.1,

"control" means, with respect to any person, (a) the acquisition or control of more than 50% of the Voting Rights of the issued share capital of such person or (b) the right to appoint and/or remove all or the majority of the members of such person's Board of Directors or other governing body, whether obtained directly or indirectly, and whether obtained by ownership of share capital, the possession of Voting Rights, contract or otherwise;

a "Change of Control" occurs when:

(a) any person or persons (other than a Permitted Holder) directly or indirectly, acting together, acquires control, directly or indirectly, of the Issuer;

(b) the Issuer consolidates with, or merges into, any other person, except where a Permitted Holder has control of the surviving person after such transaction; or

(c) the Issuer sells or transfers all or substantially all of its assets to any other person or persons, acting together (other than a Permitted Holder);

a "Permitted Holder" means the aggregate shareholding of Beom Su Kim (the "Chairman") and:

(a) any heir, estate, lineal descendant (or spouse thereof), spouse or parent of the Chairman; and

(b) any trust, corporation, partnership or other entity, of which the direct or indirect beneficiaries, equity holders, partners or owners are the Chairman and/or such other persons referred to in paragraph (a) above;

a "person" includes any individual, company, corporation, firm, partnership, joint venture, undertaking, association, organisation, trust, state or agency of a state (in each case whether or not being a separate legal entity); and

"Voting Rights" means the right generally to vote at a general meeting of shareholders (irrespective of whether or not, at the time, stock of any other class or classes shall have, or might have, voting power by reason of the happening of any contingency).

8.4.2 A Change of Control Put Exercise Notice, once delivered, shall be irrevocable and the Issuer shall redeem the Bonds which form the subject of the Change of Control Put Exercise Notices delivered as aforesaid on the Change of Control Put Date.

8.4.3 The Trustee shall not be required to monitor or take any steps to ascertain whether a Change of Control or any event which could lead to the occurrence of a Change of Control has occurred or may occur and will not be responsible or liable to Bondholders or any other person for any loss arising from any failure by it to do so.

8.4.4 No later than seven days after becoming aware of a Change of Control, the Issuer shall procure that a Change of Control Notice shall be delivered to the Trustee and the Bondholders in accordance with Condition 17 stating (i) the Bondholders' entitlement to exercise their Conversion Rights as provided in these Conditions and their entitlement to exercise their rights to require redemption of their Bonds pursuant to this Condition; (ii) the Change of Control Put Date; (iii) the date of such Change of Control, the events causing such Change of Control and all information material to Bondholders concerning the Change of Control; (iv) the date by which the Change of Control Put Exercise Notice (as defined above) must be given; (v) the redemption amount and the method by which such amount will be paid; (vi) the names and addresses of all Paying Agents; (vii) the Conversion Price immediately prior to the occurrence of the Change of Control and the Conversion Price applicable pursuant to Condition 6.6 during the Change of Control Period; (viii) the Closing Price of the Shares as derived from the relevant stock exchange as at the latest practicable date prior to the publication of the Change of Control Notice; (ix) the procedures that Bondholders must follow and the requirements that Bondholders must satisfy in order to exercise the Change of Control Put Right or Conversion Right and (x) that a Change of Control Put Exercise Notice, once validly given, may not be withdrawn.

8.5 Delisting Put Rights

8.5.1 In the event the Shares cease to be listed or admitted to trading or are suspended for a period equal to or exceeding 30 consecutive Trading Days on the KRX KOSPI Market (a "Delisting") each Bondholder shall have the right (the "Delisting Put Right"), at such Bondholder's option, to require the Issuer to redeem all or a portion of such Bondholder's Bonds (provided that the remaining portion is in an Authorised Denomination) on the date set by the Issuer for such redemption, which shall not be less than 30 days nor more than 60 days after the occurrence of a Delisting, or, if later, the date upon which notice thereof is given to Bondholders by the Issuer in accordance with Condition 8.5.2 below (the "Delisting Put Date") at the principal amount of such Bonds to be redeemed.

8.5.2 Promptly after becoming aware of a Delisting but no later than seven days after becoming aware of a Delisting, the Issuer shall procure that notice regarding the Delisting Put Right shall be given to the Trustee and the Bondholders in accordance with Condition 17 stating:

(i) the Delisting Put Date;

(ii) the date of such Delisting and, briefly, the events causing such Delisting;

(iii) the date by which the Delisting Put Exercise Notice (as defined below) must be given;

(iv) the method by which the principal amount of the Bonds to be redeemed will be paid;

(v) the names and addresses of all Paying Agents;

(vi) the Conversion Right and the then current Conversion Price;

(vii) the procedures that Bondholders must follow and the requirements that Bondholders must satisfy in order to exercise the Delisting Put Right or Conversion Right; and

(viii) that a Delisting Put Exercise Notice, once validly given, may not be withdrawn.

8.5.3 To exercise its rights to require the Issuer to redeem (subject to applicable laws) its Bonds, the Bondholder must deliver a written irrevocable notice of the exercise of such right (a "Delisting Put Exercise Notice"), in the then current form obtainable from the specified office of any Agent, to any Paying Agent on any business day during usual business hours (Monday to Friday 9:00 a.m. to 3:00 p.m. except for public holidays) at the location of such Paying Agent on such day and which day is not less than 10 business days prior to the Delisting Put Date.

8.5.4 A Delisting Put Exercise Notice, once delivered, shall be irrevocable and the Issuer shall redeem the Bonds which form the subject of the Delisting Notices delivered as aforesaid on the Delisting Put Date.

8.5.5 The Trustee shall not be required to monitor or take any steps to ascertain whether a Delisting or any event which could lead to the occurrence of a Delisting has occurred or may occur and will not be responsible or liable to Bondholders or any other person for any loss arising from any failure by it to do so.

8.5.6 For the purposes of this Condition 8.5, "business day" shall mean a day on which commercial banks are open for business in London and Seoul and in the location of the relevant Agent.

8.6 Redemption at the Option of the Bondholders

The Issuer will, at the option of the holder of any Bond, redeem all or a portion of that holder's Bonds (provided that the remaining portion is in an Authorised Denomination) on October 28, 2022 (the "Put Option Date"), at the principal amount of such Bonds to be redeemed. To exercise such right, the holder of the relevant Bond must complete, sign and deliver to the specified office of any Paying Agent a duly completed and signed notice (the "Put Option Notice") together with the Certificate evidencing the Bonds to be redeemed not less than 30 days nor more than 60 days prior to the Put Option Date.

A Put Option Notice, once delivered, shall be irrevocable (and may not be withdrawn unless the Issuer consents to such withdrawal) and the Issuer shall redeem the Bonds the subject of a Put Option Notice delivered as aforesaid on the Put Option Date.

8.7 Redemption Following Exercise of a Put Option

Upon the exercise of any put option specified in Condition 8.4, 8.5 or 8.6, payment of the applicable redemption amount shall be conditional upon (i) the Issuer obtaining all approvals required by law and (ii) delivery of the Bondholder's Certificate (together with any necessary endorsements) to any Paying Agent on any Business Day together with the delivery of any other document(s) required by these Conditions, and will be made on the later of the date set for redemption and promptly following the time of delivery of such Certificate. If the Paying Agent holds on the Put Date (as defined below) money sufficient to pay the applicable redemption monies of Bonds for which notices have been delivered in accordance with the provisions hereof upon exercise of such right, then, whether or not such Certificate is delivered to the Paying Agent, on and after such Put Date, (a) such Bond will cease to be outstanding; (b) such Bond will be deemed paid and (c) all other rights of the Bondholder shall terminate (other than the right to receive the applicable redemption monies). "Put Date" shall mean the Change of Control Put Date, the Delisting Put Date or the Put Option Date, as applicable.

8.8 Purchases

The Issuer may, if permitted under applicable laws or regulations, at any time and from time to time purchase Bonds at any price in the open market or otherwise. The Issuer is required to submit to the Registrar for cancellation any Bonds so purchased.

8.9 Cancellation

All Bonds which are redeemed or purchased by the Issuer or converted or surrendered will forthwith be cancelled. Certificates in respect of all Bonds cancelled will be forwarded to or to the order of the Registrar and such Bonds may not be reissued or resold.

8.10 Redemption Notices

All notices to Bondholders given by or on behalf of the Issuer pursuant to this Condition will be given in accordance with Condition 17, and specify (i) the Conversion Price as at the date of the relevant notice, (ii) the Closing Price as at the latest practicable date prior to the publication of the notice, (iii) the date for redemption, (iv) the manner in which redemption will be effected, (v) the aggregate principal amount of the Bonds outstanding as at the latest practicable date prior to the publication of the notice and (vi) such other information as the Trustee (in its absolute discretion) may require.

No notice of redemption given under Condition 8.2 or Condition 8.3 shall be effective if it specifies a date for redemption which falls during a Closed Period or within 15 days following the last day of a Closed Period.

If more than one notice of redemption is given (being a notice given by either the Issuer or a Bondholder pursuant to this Condition), the first in time shall prevail. Neither the Trustee nor the Agents shall be responsible for calculating or verifying any calculations of any amounts payable or number of Shares deliverable under these Conditions.

9 TAXATION

9.1 All payments in respect of the Bonds by the Issuer will be made free from any restriction or condition and be made without deduction or withholding for or on account of any present or future taxes, duties, assessments or governmental charges of whatever nature imposed or levied by or on behalf of Korea or any authority thereof or therein having power to tax, unless deduction or withholding of such taxes, duties, assessments or governmental charges is compelled by law. If such withholding or deduction is so required, the Issuer will pay such additional amount ("Additional Amounts") as may be necessary in order that the net amounts received by the Bondholders after such withholding or deduction shall equal the amounts which would have been receivable in respect of the Bonds in the absence of such withholding or deduction; except that no such Additional Amounts shall be payable with respect to any Bond:

9.1.1 to a holder (or to a third party on behalf of a holder) who is subject to such taxes, duties, assessments or governmental charges in respect of such Bond by reason of its having some connection with Korea otherwise than merely by holding the Bond or by the receipt of amounts in respect of the Bond; or

9.1.2 (in the case of a payment of principal) if the Certificate in respect of such Bond is surrendered more than 30 days after the Relevant Date except to the extent that the holder would have been entitled to such Additional Amounts on surrendering the relevant Certificate for payment on the last day of such period of 30 days.

9.2 For the purposes hereof, "Relevant Date" means whichever is the later of (i) the date on which such payment first becomes due, and (ii) if the full amount payable has not been received by the Trustee or the Principal Agent on or prior to such due date, the date on which, the full amount having been so received, notice to that effect shall have been given to the Bondholders and payment made.

9.3 References in these Conditions to principal or premium (if any) shall be deemed also to refer to any Additional Amounts which may be payable under this Condition or any undertaking or covenant given in addition thereto or in substitution therefor pursuant to the Trust Deed.

9.4 Neither the Trustee nor any Agent shall be responsible for paying any tax, duty, charges, withholding or other payment referred to in this Condition 9 or for determining whether such amounts are payable or the amount thereof, and none of them shall be responsible or liable for any failure by the Issuer, any Bondholder or any third party to pay such tax, duty, charges, withholding or other payment in any jurisdiction or to provide any notice or information to the Trustee, any Agent or any other person that would permit, enable or facilitate the payment of any principal, premium (if any) or other amount under or in respect of the Bonds without deduction or withholding for or on account of any tax, duty, charge, withholding or other payment imposed by or in any jurisdiction.

10 EVENTS OF DEFAULT

10.1 The Trustee at its absolute discretion may, and if so requested in writing by the holders of not less than 25% in principal amount of the Bonds then outstanding or if so directed by an Extraordinary Resolution shall (subject to being indemnified and/or secured and/or pre-funded to its satisfaction), give notice to the Issuer that the Bonds are, and they shall accordingly thereby become, immediately due and repayable at their aggregate principal amount (subject as provided below and without prejudice to the right of Bondholders to exercise the Conversion Right in respect of their Bonds in accordance with Condition 6) if any of the following events (each an "Event of Default") has occurred:

10.1.1 **Non-Payment**: (i) the Issuer fails to pay all or any part of any principal in respect of any of the Bonds when the same shall become due and payable, whether at maturity, on acceleration, upon redemption or otherwise, if such failure to pay shall not have been remedied within five Business Days of the due date for such payment; or

10.1.2 **Conversion Rights**: the Issuer fails to deliver the Shares as and when such Shares are required to be delivered following conversion of a Bond, if such failure to deliver shall not have been remedied within two Business Days of the due date for such delivery; or

10.1.3 **Breach of Other Obligations**: the Issuer defaults in the performance or observance of or compliance with any of its other obligations set out in the Bonds or the Trust Deed which default is incapable of remedy or, if in the opinion of the Trustee capable of remedy, is not in the opinion of the Trustee remedied within 10 Business Days after the date on which written notice specifying such failure, stating that such notice is a "Notice of Default" under the Bonds and demanding that the Issuer remedy the same, shall have been given to the Issuer by the Trustee; or

10.1.4 **Cross-Default**: (i) any other present or future indebtedness of the Issuer or any Principal Subsidiary for or in respect of moneys borrowed or raised becomes due and payable as a result of acceleration of such indebtedness prior to its stated maturity (otherwise than at the option of the Issuer or such Principal Subsidiary, as the case may be) by reason of any actual or potential default, event of default or the like (howsoever described) or (ii) any such indebtedness is not paid when due or, as the case may be, within any applicable grace period originally provided for or (iii) the Issuer or any Principal Subsidiary fails to pay when due (or within any applicable grace period originally provided for) any amount payable by it under any present or future guarantee for, or indemnity in respect of, any moneys borrowed or raised; provided that the aggregate amount of the relevant indebtedness, guarantees and indemnities in respect of which any one or more of the events mentioned above in this Condition 10.1.4 has or have occurred with respect to the Issuer and any Principal Subsidiary equals or exceeds the higher of US$20,000,000 or its equivalent in other currencies; or

10.1.5 **Involuntary Proceedings**: (i) proceedings are initiated against the Issuer or any Principal Subsidiary under any applicable liquidation, insolvency, composition, reorganisation, rehabilitation or other similar laws or an application is made for the appointment of an administrative or other receiver, manager, administrator or other similar official, or an administrative or other receiver, manager, administrator or other similar official is appointed, in relation to the Issuer or any Principal Subsidiary or, as the case may be, in relation to the whole or, in the opinion of the Trustee, a substantial part of the undertaking or assets of any of them or an encumbrancer takes possession of the whole or a substantial part of the undertaking or assets of any of them, and (ii) such case (other than the appointment of an administrator) is not stayed or discharged within 60 days; or

10.1.6 **Voluntary Proceedings**: if the Issuer or any Principal Subsidiary initiates or consents to judicial proceedings relating to itself under any applicable liquidation, insolvency, composition, reorganisation or other similar laws or makes a conveyance or assignment for the benefit of, or enters into any composition or other arrangement with, its creditors generally (or any class of its creditors) or any meeting is convened to consider a proposal for an arrangement or composition with its creditors generally (or any class of its creditors); or

10.1.7 **Winding-up, Dissolution**: (i) any order is made by any competent court or resolution passed for the winding up or dissolution of the Issuer or any Principal Subsidiary; or (ii) the Issuer or any Principal Subsidiary ceases or threatens to cease to carry on the whole or substantially all of its business, save for the purposes of reorganisation or terms approved by an Extraordinary Resolution of Bondholders, or the Issuer or any Principal Subsidiary stops or threatens to stop payment of, or is unable to, or admits inability to, pay all or, in the opinion of the Trustee, a substantial part of its debts (or any class of its debt) as they fall due or is deemed unable to pay its debts pursuant to or for the purposes of any applicable law, or is adjudicated or found bankrupt or insolvent; or

10.1.8 **Analogous Events**: any event occurs which under the laws of the relevant jurisdiction has an analogous effect to any of the events referred to in Condition 10.1.1 to Condition 10.1.7 above.

Upon any such notice being given to the Issuer, the Bonds will immediately become due and payable at their principal amount as provided in the Trust Deed.

For the purposes of Condition 10.1.4 above, any indebtedness which is in a currency other than U.S. dollars shall be translated into U.S. dollars at the middle spot rate for the sale of U.S. dollars against the purchase of the relevant currency quoted by any leading bank selected by the Trustee in its absolute discretion on any day when the Trustee requests a quotation for such purposes.

10.2 If the Bonds have become due and payable pursuant to Condition 10.1, notwithstanding Condition 6.1 and receipt of any payment after the acceleration of the Bonds and provided that no Conversion Notice has been delivered pursuant to Condition 6.1.4, a Bondholder may exercise its Conversion Right in accordance with this Condition 10.2 by delivering a Conversion Notice (unless, with respect to Condition 10.1.2, a Conversion Notice has already been delivered) to a Conversion Agent during the period from and including the date of a default notice with respect to an event specified in Condition 10.1 (at which time the Issuer will notify the Bondholders of the number of Shares per Bond to be delivered upon conversion, assuming all the then outstanding Bonds are converted) to and including the 30th Business Day after such payment.

If any converting Bondholder delivers a Conversion Notice pursuant to this Condition 10 on the Business Day prior to, or during, a Closed Period, the Bondholder's Conversion Right shall continue until the Business Day following the last day of the Closed Period, which shall be deemed the Conversion Date (notwithstanding that such a date may fall outside the Conversion Period), for the purposes of such Bondholder's exercise of its Conversion Right pursuant to this Condition 10.

If the Conversion Right attached to any Bond is exercised pursuant to this Condition 10.2 or if an Event of Default has occurred pursuant to Condition 10.1.3, the Issuer shall at the option of the converting Bondholder (notice of exercise of such option to be delivered to the Conversion Agent in writing) in lieu of delivery of the relevant Shares pay to such Bondholder an amount in U.S. dollars (converted from Korean Won at the Prevailing Rate (the "Default Cure Amount") equal to the product of (x) (i) the number of Shares that are required to be delivered by the Issuer to satisfy the Conversion Right in relation to such converting Bondholder minus (ii) the number of Shares that are actually delivered by the Issuer pursuant to such Bondholders' Conversion Notice and (y) the Closing Price of the Shares on the Conversion Date; provided that if such Bondholder has received any payment under the Bonds pursuant to this Condition 10, the amount of such payment shall be deducted from the Default Cure Amount. Payment of the Default Cure Amount shall be paid to the converting Bondholder on the third Business Day following the date on which notice of exercise of the option to receive the Default Cure Amount is delivered.

11 CONSOLIDATION, AMALGAMATION OR MERGER

The Issuer will not consolidate with, merge or amalgamate into or transfer its assets substantially as an entirety to any corporation or convey or transfer its properties and assets substantially as an entirety to any person (the consummation of any such event, a "Merger"), unless:

(i) the corporation formed by such Merger (if not the Issuer) or the person that acquired such properties and assets shall expressly assume, by a supplemental trust deed, all obligations of the Issuer under the Trust Deed, the Agency Agreement and the Bonds and the performance of every covenant and agreement applicable to it contained therein;

(ii) immediately after giving effect to any such Merger, no Event of Default shall have occurred or be continuing or would result therefrom; and

(iii) the corporation formed by such Merger, or the person that acquired such properties and assets, shall expressly agree, among other things, to indemnify each holder of a Bond against any tax, assessment or governmental charge payable by withholding or deduction thereafter imposed on such holder solely as a consequence of such Merger with respect to the payment of principal on the Bonds.

12 PRESCRIPTION

Claims in respect of amount due in respect of the Bonds will become prescribed unless made within 10 years from the relevant date for payment.

13 ENFORCEMENT

At any time after the Bonds have become due and repayable, the Trustee may, at its discretion and without further notice, take such proceedings against the Issuer as it may think fit to enforce repayment of the Bonds and to enforce the provisions of the Trust Deed, but it will not be bound to take any such proceedings unless (i) it shall have been so requested in writing by the holders of not less than 25% in principal amount of the Bonds then outstanding or shall have been so directed by an Extraordinary Resolution of the Bondholders and (ii) it shall have been indemnified and/or secured and/or pre-funded to its satisfaction. No Bondholder will be entitled to proceed directly against the Issuer unless the Trustee, having become bound to do so, fails to do so within a reasonable period and such failure shall be continuing.

14 MEETINGS OF BONDHOLDERS, MODIFICATION AND WAIVER

14.1 Meetings

The Trust Deed contains provisions for convening meetings of Bondholders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution of a modification of the Bonds or the provisions of the Trust Deed. The quorum at any such meeting for passing an Extraordinary Resolution will be two or more persons holding or representing in the aggregate over 50% in principal amount of the Bonds for the time being outstanding or, at any adjourned such meeting, two or more persons being or representing Bondholders whatever the principal amount of the Bonds so held or represented unless the business of such meeting includes consideration of proposals, *inter alia*, (i) to modify the due date for any payment in respect of the Bonds, (ii) to reduce or cancel the amount of principal or default interest payable in respect of the Bonds, (iii) to change the currency of payment of the Bonds, (iv) to modify or cancel the Conversion Rights or the put options specified in Condition 8, (v) to increase the Conversion Price (other than as provided for in Condition 6.3.21) or to shorten the Conversion Period or (vi) to modify the provisions concerning the quorum required at any meeting of the Bondholders or the majority required to pass an Extraordinary Resolution, in which case the necessary quorum for passing an Extraordinary Resolution will be two or more persons holding or representing not less than 66.66%, or at any adjourned such meeting not less than 25%, in principal amount of the Bonds for the time being outstanding. An Extraordinary Resolution passed at any meeting of Bondholders will be binding on all Bondholders, whether or not they are present at the meeting. The Trust Deed provides that a written resolution signed by or on behalf of the holders of not less than 90% of the aggregate principal amount of Bonds outstanding shall be as valid and effective as a duly passed Extraordinary Resolution. Such a resolution in writing may be contained in one document or several documents in the same form, each signed by or on behalf of one or more Bondholders.

14.2 Modification and Waiver

The Trustee may agree, without the consent of the Bondholders, to (i) any modification (except as mentioned in Condition 14.1 above) to, or the waiver or authorisation of any breach or proposed breach of, the Bonds, the Agency Agreement, any agreement supplemental to the Agency Agreement, the Trust Deed or these Conditions which is not, in the opinion of the Trustee, materially prejudicial to the interests of the Bondholders or (ii) any modification to the Bonds, the Agency Agreement, any agreement supplemental to the Agency Agreement, the Trust Deed or these Conditions which, in the Trustee's opinion, is of a formal, minor or technical nature or to correct a manifest error or to comply with mandatory provisions of law. Any modification, waiver or authorisation pursuant to this Condition 14.2 will be binding on the Bondholders and, unless the Trustee agrees otherwise, any such modifications will be notified by the Issuer to the Bondholders as soon as practicable thereafter.

14.3 Interests of Bondholders

In connection with the exercise of its functions (including but not limited to those in relation to any proposed modification, authorisation or waiver) the Trustee shall have regard to the interests of the Bondholders as a class and shall not have regard to the consequences of such exercise for individual Bondholders and the Trustee shall not be entitled to require, nor shall any Bondholder be entitled to claim, from the Issuer or the Trustee, any indemnification or payment in respect of any tax consequences of any such exercise upon individual Bondholders except to the extent provided for in Condition 9 and/or any undertakings given in addition thereto or in substitution therefor pursuant to the Trust Deed.

14.4 Certificates/Reports

The Trustee may rely without liability to Bondholders on a report, confirmation or certificate or any advice of any accountants, financial advisers, financial institution or any other expert, whether or not addressed to it and whether their liability in relation thereto is limited (by its terms or by any engagement letter relating thereto entered into by the Trustee or in any other manner) by reference to a monetary cap, methodology or otherwise. The Trustee may accept and shall be entitled to conclusively rely on any such report, confirmation or certificate or advice and such report, confirmation or certificate or advice shall be binding on the Issuer, the Trustee and the Bondholders.

15 REPLACEMENT OF CERTIFICATES

If any Certificate is mutilated, defaced, destroyed, stolen or lost, it may be replaced at the specified office of the Registrar or any Agent upon payment by the claimant of such costs as may be incurred in connection therewith and on such terms as to evidence and indemnity as the Issuer and such Agent may reasonably require. Mutilated or defaced Certificates must be surrendered before replacements will be issued.

16 FURTHER ISSUES

The Issuer may from time to time without the consent of the Bondholders create and issue further securities having the same terms and conditions as the Bonds in all respects and so that such further issue shall be consolidated and form a single series with the outstanding Bonds. References in these Conditions to the Bonds include (unless the context requires otherwise) any other securities issued pursuant to this Condition and forming a single series with the Bonds. Any further securities forming a single series with the Bonds shall be constituted by a deed supplemental to the Trust Deed.

17 NOTICES

All notices to Bondholders shall be validly given if mailed to them at their respective addresses in the register of Bondholders maintained by the Registrar or published in a leading newspaper having general circulation in Asia (which is expected to be the *Asian Wall Street Journal*). Any such notice shall be deemed to have been given on the later of the date of such publication and the seventh day after being so mailed, as the case may be.

So long as the Bonds are represented by the Global Certificate and the Global Certificate is held on behalf of Euroclear or Clearstream or an Alternative Clearing System, notices to Bondholders shall be given by delivery of the relevant notice to Euroclear or Clearstream or an Alternative Clearing System, for communication by it to entitled accountholders in substitution for notification as required by the Conditions (and shall be deemed to have been given on the date of delivery to such clearing system).

18 AGENTS

The names of the initial Agents and the Registrar and their specified offices are set out below. Subject to the terms of the Trust Deed and the Agency Agreement, the Issuer reserves the right, subject to the prior written approval of the Trustee, at any time to vary or terminate the appointment of any Agent or the Registrar and to appoint additional or other Agents or a replacement Registrar. The Issuer will at all times maintain (i) a Principal Agent; (ii) a Registrar outside the United Kingdom; and (iii) so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, an Agent having a specified office in Singapore where the Bonds may be presented or surrendered for payment or redemption (and such agent in Singapore shall be a Paying, Transfer and Conversion Agent and shall be referred to in these terms and conditions as the "Singapore Agent"). Notice of any such termination or appointment, of any changes in the specified offices of any Agent or the Registrar and of any change in the identity of the Registrar or the Principal Agent will be given promptly by the Issuer to the Bondholders in accordance with Condition 17 and in any event not less than 45 days' notice will be given.

For so long as the Bonds are listed on the SGX-ST and the rules of the SGX-ST so require, in the event that the Global Certificate is exchanged for definitive Certificates, the Issuer shall appoint and maintain a paying agent in Singapore, where the Bonds may be presented or surrendered for payment or redemption. In addition, in the event that the Global Certificate is exchanged for definitive Certificates, an announcement of such exchange shall be made by or on behalf of the Issuer through the SGX-ST and such announcement will include all material information with respect to the delivery of the definitive Certificates, including details of the paying agent in Singapore.

19 INDEMNIFICATION

The Trust Deed contains provisions for the indemnification of the Trustee and for its relief from responsibility, including provisions relieving it from taking proceedings to enforce repayment or the provisions of the Trust Deed or the terms and conditions of the Bonds unless indemnified and/or secured and/or pre-funded to its satisfaction. The Trustee is entitled to enter into business transactions with the Issuer or any person or body corporate associated with the Issuer without accounting for any profit resulting therefrom.

20 CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999

No person shall have any right to enforce any term or condition of this Bond under the Contracts (Rights of Third Parties) Act 1999.

21 GOVERNING LAW AND JURISDICTION

The Bonds, the Trust Deed and the Agency Agreement and any non-contractual obligations arising out of or in connection with them are governed by, and shall be construed in accordance with, the laws of England and Wales. The courts of England are to have jurisdiction to settle any disputes which may arise out of or in connection with the Trust Deed and the Bonds ("Proceedings") and accordingly any Proceedings arising out of or in connection with the Trust Deed and the Bonds may be brought in such courts. The Issuer has in the Trust Deed irrevocably submitted to the courts of England and waived any objection to Proceedings in such courts, whether on the ground of venue or on the ground that Proceedings have been brought in an inconvenient forum. These submissions are made for the benefit of the Trustee and each of the Bondholders. The Issuer irrevocably has appointed Kookmin Bank, London Branch, now at 6th Floor, Princes Court, 7 Princes Street, London, EC2R 8AQ, United Kingdom, as its agent for service of process in England. If for any reason Kookmin Bank, London Branch ceases to be able to act as such or no longer has an address in England, the Issuer irrevocably agrees to appoint a substitute process agent acceptable to the Trustee and shall immediately notify the Trustee of such appointment. Nothing herein, in the Trust Deed shall affect the right to serve process in any other manner permitted by law.

GLOBAL CERTIFICATE

A Global Certificate will be deposited with, and registered in the nominee name of, the common depositary (the "Common Depositary") for Euroclear and Clearstream who will credit their respective accountholders with the respective principal amounts of the individual interests represented by such Global Certificate. Such accounts will be designated initially by or on behalf of the Managers. Ownership of beneficial interests in the Global Certificate will be limited to persons who have accounts with Euroclear or Clearstream or persons who hold interests through such accountholders. Ownership of beneficial interests in the Global Certificate will be shown on, and the transfer of that ownership will be effected only through, the records maintained by Euroclear and Clearstream (with respect to interests of their respective accountholders) and the records of such accountholders (with respect to interests of persons other than such accountholders).

Payments of principal on the Global Certificate will be made to the Common Depositary or its respective nominee as the registered owner thereof. None of the Issuer, the Trustee, the Paying Agents and any custodian, transfer agent or registrar will have any responsibility or liability for the accuracy of any of the records relating to, or payments made on account of, ownership interests in the Global Certificate or for any notice permitted or required to be given to holders of Bonds or any consent given or actions taken by such registered holders of Bonds. The Issuer expects that upon receipt of any payment of principal in respect of the Global Certificate representing any Bonds held by the Common Depositary or its nominee, as the case may be, the Common Depositary will immediately credit Euroclear and Clearstream with payments in amounts proportionate to their respective interests in the principal amount of the Global Certificate as shown on their respective records.

Transfers between accountholders in Euroclear and Clearstream will be effected in accordance with their respective rules and operating procedures.

The laws of certain jurisdictions require that certain purchasers of securities take physical delivery of such securities in definitive form. Accordingly, the ability of beneficial owners to own, transfer or pledge beneficial interests in the Global Certificate may be limited by such laws.

Conversion of Bonds will be effected through participants in Euroclear and Clearstream in the ordinary way in accordance with their respective rules and operating procedures.

Euroclear and Clearstream each holds securities for participating organisations and facilitate the clearance and settlement of securities transactions between their respective participants through electronic book-entry changes in accounts of such participants. Euroclear and Clearstream provide to their respective participants, among other things, services for safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Euroclear and Clearstream participants are financial institutions throughout the world, including underwriters, securities brokers and dealers, banks, trust companies, clearing corporations and certain other organisations. Indirect access to Euroclear and Clearstream is also available to others, such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Euroclear or Clearstream participant, either directly or indirectly.

INDIVIDUAL DEFINITIVE CERTIFICATES

In the event that (i) the Common Depositary or any successor to the Common Depositary notifies the Issuer in writing that it is at any time unwilling or unable to continue to act as a depositary and a successor depositary is not appointed by the Issuer within 90 days or (ii) Euroclear or Clearstream (or any other clearing system as shall have been designated by the Issuer and approved by the Trustee on behalf of which the Bonds evidenced by the Global Certificate may be held) is closed for business for a continuous period of 14 days (other than by reason of holidays, statutory or otherwise) or announces an intention permanently to cease business or does in fact do so, the Issuer shall at its own expense cause sufficient individual definitive Certificates to be executed and delivered to the Registrar for completion, authentication and despatch to the relevant Bondholders in accordance with the Trust Deed. Persons exchanging interests in the Global Certificate for individual definitive Certificates will be required to provide to the Registrar, a written order containing instructions and such other information as the Issuer and the Registrar may require to complete, execute and deliver such individual definitive Certificates.

THE GLOBAL CERTIFICATE

The certificate issued in respect of the Global Bond (the "Global Certificate") contains provisions that apply to the Bonds, some of which modify the effect of the terms and conditions of the Bonds set out in this document. The following is a summary of provisions of the Bonds while in global form.

MEETINGS

The registered holder of the Bonds in respect of which the Global Certificate is issued will be treated as being one person for the purposes of any meeting of Bondholders, and at any such meeting, as having one vote in respect of each US$100,000 in principal amount of the Bonds in respect of which the Global Certificate is issued.

CANCELLATION

Cancellation of any Bond following its redemption, purchase or conversion by the Issuer will be effected by a reduction in the principal amount of the Bonds in the register of Bondholders.

NOTICES

So long as the Bonds are represented by the Global Certificate and the Global Certificate is held on behalf of Euroclear or Clearstream, notices to Bondholders may be given by delivery of the relevant notice to Euroclear or Clearstream for communication by it to entitled accountholders in substitution for notification as required by the Conditions provided that, for so long as any Bonds are listed on a stock exchange and the rules of that stock exchange (or any other relevant authority) so require, such notice will be published in a daily newspaper of general circulation in the place or places and/or the website of the Issuer as required by those rules. Any such notice shall be deemed to have been given to the holders of the Bonds on the second day after the day on which the said notice was given to Euroclear and/or Clearstream.

TRUSTEE'S POWERS

In considering the interests of Bondholders while title to the Bonds is registered in the name of a nominee of the Common Depositary for Euroclear or Clearstream, the Trustee may, without being obliged to do so, have regard to any information made available to it by Euroclear or Clearstream as to the identity (either individually or by category) of its participants with entitlements to Bonds and may consider such interests as if such accountholders were the holders of the Bonds.

CONVERSION

The right to require the conversion of the Bonds in respect of which a Global Certificate has been issued is exercisable by presentation to or to the order of the Conversion Agent or to any Paying Agent of one or more Conversion Notices duly completed by or on behalf of a holder of a book-entry interest in such Bond. Delivery of the Conversion Notice will constitute confirmation by the beneficial owner of the Bonds to be converted that the information and the representations in the Conversion Notice are true and accurate on the date of delivery.

REGISTRATION OF TITLE

Except in the limited circumstances described in the Global Certificate, certificates for individual Bonds will not be issued in exchange for the Bonds in respect of which the Global Certificate is issued.

TRANSFERS

Transfers of interests in the Bonds will be effected through the records of Euroclear and Clearstream and their respective participants in accordance with their respective rules and operating procedures.

USE OF PROCEEDS

The net proceeds to the Issuer from the sale of the Bonds will be used by the Issuer primarily for general corporate purposes.

EXCHANGE RATES

The table below sets forth, for the periods and dates indicated, information concerning the Market Average Exchange Rate. There is no implication that that the Won or U.S. dollar amounts referred to herein could have been or could be converted into U.S. dollars or Won, as the case may be, at any particular rate, or at all.

For the year ended December 31	Low	High	Average[1]	At end of period
		(Won per US$1.00)		
2015	1,068.1	1,203.1	1,131.5	1,172.0
2016	1,093.2	1,240.9	1,160.5	1,208.5
2017	1,071.4	1,208.5	1,130.8	1,071.4
2018	1,057.6	1,142.5	1,100.3	1,118.1
2019	1,111.6	1,218.9	1,165.7	1,157.8
2020 (through October 20)	1,142.2	1,280.1	1,198.1	1,142.2
January	1,153.1	1,183.5	1,164.3	1,183.5
February	1,179.8	1,217.7	1,193.8	1,215.9
March	1,185.0	1,280.1	1,220.1	1,222.6
April	1,212.3	1,237.6	1,225.2	1,225.2
May	1,217.7	1,242.0	1,228.7	1,239.4
June	1,192.8	1,237.6	1,210.0	1,200.7
July	1,191.4	1,206.4	1,198.9	1,191.4
August	1,182.3	1,193.7	1,186.9	1,185.1
September	1,160.6	1,190.2	1,178.8	1,173.5
October (through October 20)	1,142.2	1,169.5	1,153.4	1,142.2

Source: Seoul Money Brokerage Services, Ltd.

(1) Represents the average of the daily Market Average Exchange Rates over the relevant period.

CAPITALISATION

The table below sets forth the Company's capitalisation (defined as the sum of its long-term borrowings (net of current portion) and shareholders' equity) as of June 30, 2020, on an actual basis and as adjusted to give effect to the issuance of the Bonds offered hereby.

	As of June 30, 2020	
	Actual	**As Adjusted**
	(in billions of Won)	
Long-term borrowings:		
Long-term borrowings (net of current portion)	₩ 39	₩ 39
Bonds offered hereby[(1)]	–	360
Total long-term borrowings	₩ 39	₩ 399
Stockholders' equity:		
Share capital	₩ 44	₩ 44
Share premium	5,631	5,631
Other components of equity	(23)	(23)
Accumulated other comprehensive loss	(25)	(25)
Retained earnings	378	378
Non-controlling interests	695	695
Total equity	₩6,701	₩6,701
Total capitalisation	₩6,740	₩7,100

(1) Reflects the principal amount of the Bonds not reduced by underwriting commissions or other offering-related expenses and adjustments translated into Won at Won 1,200.7 to US$1.00, the Market Average Exchange Rate in effect as of June 30, 2020.

Except as disclosed or contemplated in this offering circular, there has been no material change in the capitalisation of the Company since June 30, 2020.

SELECTED CONSOLIDATED FINANCIAL INFORMATION

CONSOLIDATED FINANCIAL INFORMATION OF THE COMPANY

The following tables set forth selected financial information of the Company. Such information should be read in conjunction with the Company's consolidated financial statements and related notes and other financial information appearing elsewhere in this offering circular.

The Company's selected consolidated financial information as of June 30, 2020 and for the six months ended June 30, 2019 and 2020 set forth below has been derived from its unaudited condensed consolidated interim financial statements as of June 30, 2020 and for the six months ended June 30, 2020 and 2019 prepared in accordance with K-IFRS 1034, "Interim Financial Reporting," and included elsewhere in this offering circular. The Company's selected consolidated financial information as of December 31, 2017, 2018 and 2019 and for the years ended December 31, 2017, 2018 and 2019 set forth below has been derived from its audited consolidated financial statements as of such dates and for such periods prepared in accordance with K-IFRS and included elsewhere in this offering circular.

The Company's results of operations for the six months ended June 30, 2020 may not be indicative of its results of operations for the full year 2020.

Consolidated Statement of Comprehensive Income Information

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	**2018[1]**	**2019[1][2]**	**2019[1][2]**	**2020[1][2]**
			(In billions of Won)		
Revenue	₩ 1,972	₩ 2,417	₩ 3,070	₩ 1,439	₩ 1,821
Operating expenses	(1,806)	(2,341)	(2,862)	(1,372)	(1,636)
Reversal of allowance for bad debts (impairment loss on trade receivables)	(1)	(3)	(2)	1	(1)
Operating profit	165	73	207	68	186
Other non-operating income	36	75	74	22	122
Other non-operating expenses	(91)	(86)	(521)	(27)	(24)
Interest income	15	42	32	17	12
Other finance income	64	71	39	19	46
Finance costs	(46)	(50)	(44)	(19)	(18)
Share of income of associates and joint ventures	26	32	11	26	32
Share of loss of associates and joint ventures	(17)	(26)	(31)	(12)	(26)
Profit (loss) before income tax	153	131	(234)	94	331
Income tax expense	(28)	(115)	(108)	(46)	(106)
Profit (loss) for the period	₩ 125	₩ 16	₩ (342)	₩ 49	₩ 225

(1) The amounts for 2018, 2019 and the six months ended June 30, 2019 and 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(2) The amounts for 2019 and the six months ended June 30, 2019 and 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

Consolidated Statement of Financial Position Information

	As of December 31,			As of June 30,
	2017	2018[1]	2019[1][2]	2020[1][2]
	(In billions of Won)			
Total assets	₩6,349	₩7,960	₩8,737	₩10,043
Current assets	1,993	2,859	2,830	3,273
Cash and cash equivalents	1,117	1,247	1,918	1,813
Short-term financial instruments	394	924	208	477
Trade receivables	179	194	157	147
Other current financial assets	134	208	252	259
Other current assets	93	224	194	245
Non-current assets	4,356	5,101	5,908	6,302
Financial assets at fair value through profit or loss	–	105	127	179
Financial assets at fair value through other comprehensive income	–	329	419	414
Available-for-sale securities	160	–	–	–
Investments in associates and joint ventures	162	305	979	1,104
Property and equipment	271	315	350	368
Intangible assets	3,690	3,865	3,548	3,714
Total liabilities	₩1,887	₩2,332	₩2,997	₩ 3,342
Current liabilities	1,041	2,039	2,433	2,321
Trade and other payables	280	461	579	644
Short-term borrowings[3]	174	609	449	196
Deposits received	–	130	300	286
Other current liabilities	425	730	920	997
Non-current liabilities	846	293	564	635
Long-term borrowings[4]	621	45	72	39
Long-term lease liabilities	–	–	165	175
Deferred income tax liabilities	140	151	141	169
Total equity	₩4,463	₩5,627	₩5,740	₩ 6,701
Share capital	34	42	43	44
Share premium	3,604	4,648	5,043	5,631
Retained earnings	403	453	148	378

(1) The amounts as of December 31, 2018 and 2019 and June 30, 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(2) The amounts as of December 31, 2019 and June 30, 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

(3) Including redeemable convertible preferred shares issued by the Company's subsidiaries.

(4) Including corporate bonds.

Cash Flow and Other Financial Information

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	2018	2019	2019	2020
			(In billions of Won)		
Net cash inflow from operating activities	₩ 372	₩ 491	₩ 753	₩287	₩ 278
Net cash inflow (outflow) from investing activities	(355)	(1,261)	(414)	170	(749)
Net cash inflow (outflow) from financing activities	468	891	322	(98)	384
Adjusted EBITDA[1]	295	208	426	172	307

(1) Adjusted EBITDA is a metric used by the Company's management to measure operating performance. Adjusted EBITDA represents the Company's operating profit, excluding depreciation and amortisation, for the relevant period. Adjusted EBITDA is not a standard measure under K-IFRS and should not be considered in isolation or construed as an alternative to cash flows, operating profit, net income or any other measure of the Company's operating performance, liquidity, profitability or cash flows generated by operating, investing or financing activities. Adjusted EBITDA has been presented herein because

the Company believes Adjusted EBITDA is a useful supplement to cash flow data as a measure of its performance and its ability to generate cash flows from operations to cover debt service and taxes. The Company's Adjusted EBITDA presented herein may not be comparable to similarly titled measures presented by other companies, because not all use the same definition of Adjusted EBITDA.

A reconciliation of the Company's operating profit to Adjusted EBITDA is as follows:

	For the Year Ended December 31,			For the Six Months Ended June 30,	
	2017	**2018[2]**	**2019[2][3]**	**2019[2][3]**	**2020[2][3]**
			(In billions of Won)		
Operating profit	₩165	₩ 73	₩207	₩ 68	₩186
Depreciation	61	68	139	66	80
Amortisation	69	67	80	38	41
Adjusted EBITDA[1]	₩295	₩208	₩426	₩172	₩307

(2) The amounts for 2018, 2019 and the six months ended June 30, 2019 and 2020 reflect changes in the Company's accounting policies pursuant to the adoption of K-IFRS 1109, "Financial Instruments" and K-IFRS 1115, "Revenue from Contracts with Customers."

(3) The amounts for 2019 and the six months ended June 30, 2019 and 2020 reflect a change in the Company's accounting policies pursuant to the adoption of K-IFRS 1116, "Leases."

THE COMPANY

OVERVIEW

The Company operates Korea's leading mobile platform, Kakao Talk, as well as other leading online platforms in Korea, including the Daum portal and Melon online music platforms. The Company utilises these leading platforms, along with its other platforms developed using its major brands, such as Kakao T, Kakao Pay and Daum Webtoon, to provide users and advertisers with a diverse and expanding array of products and services. The Company provides such products and services through its platform and content operations.

The Company's platform operations allow users to engage in more aspects of their daily affairs using their mobile and other connected devices and PCs at their convenience, while enabling advertisers to access its large and growing user base across the Kakao ecosystem. The Company's platform-related products and services provide users with the ability to communicate, search content, shop and make payments online, as well as use innovative services such as mobile transportation applications, through the Company's platforms. The Company also offers advertisers advertising products and services through its platforms in a variety of online formats that allow advertisers to better target their marketing to their desired audiences among the Company's users. Such platform-based products and services are mainly offered through the Kakao Talk platform and the Daum portal platform as well as the Kakao T and Kakao Pay platforms.

The Company's content operations enable delivery of original and third party-produced content to users through the Company's platforms. Such content-related products and services include games, music, web-comics, web-novels, movies and television shows, and leveraging the success of its platform operations and recognition of major brands, including Kakao, Daum and Melon, the Company provides content through platforms that are specifically tailored to optimise the users' experience with such content, such as the Melon online music, Kakao Page, Daum Webtoon and Kakao Games platforms.

The integration of the Company's products and services through its platforms aims to provide its users with a smoother and richer connection experience that contributes to higher user loyalty and user base growth, which in turn may enhance the Company's ability to accumulate and analyse substantial amounts of user-related data to better understand user preferences and to improve its product and service offerings, including the effectiveness of online advertising through such platforms. Leveraging its content, its user base and their interconnectivity, the Company's platforms have evolved into diversified online gateways that are fundamentally changing social interactions and lifestyle patterns in Korea. The Company's platforms have become integrated into numerous aspects of its users' daily lives. Users add value to the overall Kakao ecosystem each time they engage with other users, advertisers or content or service providers. Increases in user engagement enable the Company to grow its scale by attracting more users, advertisers and content and service providers. In turn, growth in scale in terms of the number of users, advertisers and content and service providers and the interactions among them enhances the value the Company delivers to all of its constituencies and leads to greater monetisation opportunities.

The Company was formed on October 1, 2014, when the Former Kakao merged with and into Daum Communications, its predecessor company. Founded in December 2006 as IWILAB Co., Ltd., the Former Kakao launched Kakao Talk and changed its name to Kakao Corp. in 2010. Daum Communications was established in February 1995 and introduced Korea's first free e-mail service in 1997. The Company acquired the Melon online music platform in March 2016 through the acquisition of a controlling interest in LOEN Entertainment (or the Former Kakao M), a leading music entertainment company in Korea and the former operator of such platform, which was merged with and into the Company in September 2018. Seoul Record, the predecessor company to LOEN Entertainment, was founded in 1978.

The Company generates revenue by leveraging the numerous affiliations and interests that connect the people and entities that constitute its user base and prompting its users to actively and repeatedly engage and interact with the wide variety of products, services and content the Company provides through its online platforms. Its revenue is primarily generated from advertising services, content offerings, and other

services, including e-commerce and character merchandising. The Company's revenue amounted to Won 1,972 billion in 2017, Won 2,417 billion in 2018, Won 3,070 billion in 2019, Won 1,439 billion in the first six months of 2019 and Won 1,821 billion in the first six months of 2020. Its net profit (loss) for the period amounted to a net profit of Won 125 billion in 2017 and Won 16 billion in 2018, a net loss of Won 342 billion in 2019 and a net profit of Won 49 billion in the first six months of 2019 and Won 225 billion in the first six months of 2020. The Company had total assets of Won 10,043 billion and total equity of Won 6,701 billion as of June 30, 2020.

MAJOR BRANDS

The Company's major brands include Kakao, Daum and Melon, each of which has origins in a leading service offered by the Company. Leveraging such brands, the Company provides a diverse and expanding array of products and services through its platform and content operations.

- **Kakao.** The Kakao brand originated with Kakao Talk, the Company's free instant messaging service, which continues to serve as the central entry point through which it introduces many of its users to its other mobile service offerings. See "– Products and Services – Platform Operations – Talk Business – Communication and Search – Messaging." Kakao Talk is Korea's leading mobile instant messaging service based on monthly active user base in Korea in July 2020 according to Nielsen Koreanclick. In the first six months of 2020, Kakao Talk had approximately 52.1 million average monthly active users globally (including 45.5 million in Korea, representing a substantial majority of the Korean population). Monthly active users of Kakao Talk refer to the number of user accounts that logged into and accessed the Kakao Talk application from a mobile device or PC at least once during such month.

- **Daum.** The Daum brand originated with the Daum portal, one of Korea's leading Internet portal sites, which serves as a platform for a variety of portal-related services, including web-based searching, e-mail and online communities. See "– Products and Services – Platform Operations – Portal Business – Search and Communication." Daum.net was the second most accessed web site in Korea based on the number of unique visitors in July 2020 according to Nielsen Koreanclick.

- **Melon.** The Melon brand originated with the Melon online music service, which provides subscription-based access to music and related content. See "– Products and Services – Content Operations – Music Business – Melon." Melon is Korea's leading online music service based on the number of unique visitors to the web site in July 2020 according to Nielsen Koreanclick. As of June 30, 2020, Melon had over 5.1 million paying subscribers. Paying subscribers of Melon online music refer to the number of user accounts subscribing to a music service.

PRODUCTS AND SERVICES

Platform Operations

The Company's platform operations comprise its Talk Business, Portal Business and Other Business, which generally provide users with the ability to communicate, search content, shop and make payments online, as well as use innovative services such as mobile transportation applications, through the Company's platforms. Such services to users also provide abundant and unique advertising opportunities to advertisers through the Company's platforms. Total revenue from the Company's platform operations amounted to Won 1,039 billion in 2018, Won 1,435 billion in 2019, Won 640 billion in the first six months of 2019 and Won 935 billion in the first six months of 2020.

Talk Business

The Company's Talk Business generally refers to products and services that are offered through its Kakao Talk platform and relate to communication and search, e-commerce and advertising, among others. Kakao Talk provides application-based instant messaging services on mobile and other connected devices and PCs and serves as the central entry point through which the Company introduces many of its users to its other mobile service offerings. Launched in March 2010 as a mobile instant messaging service, Kakao Talk is now available for downloading in over 230 countries in over 15 languages.

At registration, user accounts are associated with a user's mobile phone number. Registered users are able to use their Kakao Talk accounts to seamlessly access substantially all of the products and services the Company offers through its various platforms, including Daum PC and mobile services, Kakao T mobility services and Melon online music services, as well as a growing number of partner applications and websites. By providing its users with differentiated services, Kakao Talk acts as a centralised mobile communications channel that conveniently integrates multiple functions.

Communication and Search

Messaging. Kakao Talk's messaging service provides users a free, efficient and reliable tool for communicating with each other individually or in group chats. Users selectively manage their own closed group of "friends" with whom they want to communicate, which typically consists primarily of other individual users but may also be expanded to businesses, organisations and celebrities using the Channel function, an advertising product through which advertisers connect to Kakao Talk users. See "– Advertising – Kakao Talk Channel." Users are also able to initiate chats with others by providing a link, forgoing the step of adding them to such users' friends list and sharing personal information. Users can customise how messages appear and how they are alerted of new received messages by choosing from a wide selection of background themes and alerts or by importing their own images and sounds. In addition to text messages, users can also send Emoticons, images, videos, documents, voice messages, location information and gift vouchers using Kakao Talk.

Sharp (#) Tab. The Sharp (#) Tab function within the Kakao Talk application is a mobile social content hub that connects users with articles and media covering a variety of topics, such as entertainment, sports, fashion and beauty, that are curated from the Company's own proprietary content as well as hosted content. Users are able to indicate "like" on an article while viewing social content and can utilise the Sharp (#) Tab function to recommend applicable content to their Kakao Talk friends. Display advertising is also offered in eye-catching locations in the Sharp (#) Tab function, within the displayed articles and media. See "– Portal Business – Advertising – Display Advertising" for additional information on the Company's display advertising products and services.

Sharp (#) Search. The Sharp (#) Search function is an in-chat search function available to Kakao Talk application users. Users may initiate a search within a chat room by tapping on a sharp (#) symbol and then typing in their queries. Sharp (#) Search query results are customised to the mobile environment and can be shared with other chat room participants. The Company offers its search advertising products and services to advertisers through the Sharp (#) Search function. See "– Portal Business – Advertising – Search Advertising" for additional information on the Company's search advertising products and services.

Voice Talk, Face Talk and Group Call. In addition to messaging, users can communicate with each other through voice calls (Voice Talk) and video calls (Face Talk) made using the Kakao Talk application. Users can also initiate multi-party Group Calls from within a group chat room. Calls can be connected to other Kakao Talk users worldwide through mobile and other connected devices as well as PCs.

Advertising

Kakao Biz Board. Kakao Biz Board offers advertisers access to the Company's Kakao Talk user base with prominent display ad placements on the main chat function of the Kakao Talk application. See "– Portal Business – Advertising – Display Advertising" for additional information on the Company's display advertising products and services. Advertisers can access one of the largest user bases in Korea through the Company's Kakao Talk platform, which is Korea's leading mobile instant messaging service based on active users. In addition, as one of the most heavily accessed displays within Kakao Talk, placement of advertising on the main chat function presents a unique opportunity for advertisers. Such display ads on Kakao Biz Board can also be linked to e-commerce services offered on Kakao Talk, such as Kakao Talk Gift Shop, so that advertisers can seamlessly convert the advertisement into a purchasing experience for users, and users can conveniently conduct all steps from viewing the advertisement of the product to ordering the product for delivery within the Kakao ecosystem.

Kakao Talk Channel. The Channel function within the Kakao Talk application enables users to connect with advertisers, such as businesses, organisations and celebrities, through the creation of an advertiser's Channel, or business profile similar to that of a Kakao Talk user profile, which may contain, among others, additional information on the company, a link to the business' official website and/or its Talk Store. See "– E-commerce – Talk Store." Kakao Talk users can add such Channels to their Kakao Talk friend list, allowing such advertisers to send messages directly to such users. Through the Kakao Talk Channel function, users can easily stay apprised of the latest news and information regarding the advertisers that interest them. On the other hand, Kakao Talk Channel provides advertisers with a mode of communication that aims to promote their products, services and content more efficiently and relevantly than other advertising channels, through direct messaging to their respective target audiences. The Company charges advertisers fees based on a combination of factors, such as the number of times the advertiser is featured as a recommended friend on Kakao Talk and the number of messages sent by the advertiser to Kakao Talk users.

Brand Emoticons. Emoticons are pictorial icons depicting feelings, expressions or actions, often using the persona of proprietary characters, other fictional characters created by third-parties, or real life celebrities. Users can enrich text-based communications by inserting Emoticons into their messages sent through the Company's platforms, including Kakao Talk and Daum portal. Emoticons can also be used to convey a message quickly when typing out a message may be inconvenient. While Emoticons are generally offered to users for purchase through the Kakao Talk application typically at a price of Won 2,500 per set, Brand Emoticons are offered by advertisers to their target audience through Kakao Talk as a method of advertising. Brand Emoticons may be designed to highlight the products, services and brands of a particular advertiser. The Company charges advertisers fees based on a combination of factors, including the number of Brand Emoticons offered by the advertiser, the period the Brand Emoticons offered by the advertiser is available to users and the method by which the Brand Emoticons are provided to users (e.g., by adding the advertiser's Channel, downloading the advertiser's mobile application, or using a specific feature of the advertiser's product or service).

Kakao Style. Accessible within the Kakao Talk application and as a standalone mobile application, Kakao Style offers merchants a way to highlight the latest fashion trends through their merchandise in the format of a curated pictorial blog. Users are able to indicate their likes and dislikes and share such information with their Kakao Talk friends. Kakao Style offers unique fashion items which users can purchase from participating merchants, many of which are small-and medium-sized retailers. Users are able to browse through the products as if viewing an online magazine, and then click through to the applicable retailer's website for purchases. The Company receives fees from participating retailers on either a cost per impression or per click basis.

E-commerce

Kakao Talk Gift Shop. Through Kakao Talk Gift Shop, which is offered on the Kakao Talk application, the Company offers its users a distinctive gifting feature that allows them to purchase and send gifts from leading online retailers and service providers in Korea that register as sellers with the Company. Such gifts may take the form of a mobile coupon sent via a Kakao Talk notification, which the recipient can show at a participating seller's offline store to collect the gift. For physical gifts that are directly delivered to the recipient, the delivery details are provided by the intended recipient of the gift upon receipt of a Kakao Talk notification so that an order may be placed by a Kakao Talk user without the recipient's delivery address or phone number. Users have one-stop access to products and services that are also available on each participating seller's website. However, instead of linking such services to the sellers' own websites, the Company stores the database for their products and services on its own servers. Maintaining the database on its own servers allows it to keep better records of users' purchasing patterns and preferences, to present all the products and services to its users in a consistent format and to address quickly any technical problems on Kakao Talk Gift Shop without having to rely on the sellers to resolve such problems.

When users purchase a product or service through Kakao Talk Gift Shop, the Company is responsible for collecting payment for the product or service purchased, while the sellers are responsible for packaging, delivery and customer service. The Company retains a commission from the purchase price and remits the balance to the seller. Users can pay for their purchases through a variety of methods, including with Kakao Pay or credit cards. See "– Other Platform Business – Fintech – Kakao Pay." From time to time, the Company also acts as a principal to directly offer and sell merchandise in various product categories through Kakao Talk Gift Shop. To enhance customer loyalty and promote shopping activities, the Company has partnered with certain merchandisers to offer reward programs and promotional discounts.

Kakao Makers. Accessible within the Kakao Talk application and as a standalone mobile application, Kakao Makers connects merchants and users to provide a collective purchasing experience to users. Users can choose from a diverse selection of products that are manufactured only when orders fulfilling a specified quantity of units of a certain product are placed. Such purchase may also be made as a gift, in which case the delivery details are provided by the intended recipient in a format analogous to that of Kakao Talk Gift Shop. Other features of Kakao Talk Gift Shop, including the database and payment method, are similarly implemented in the Kakao Makers platform. By allowing merchants to begin production only after orders for a certain number of units are placed, Kakao Makers lowers the risk for new or small merchants attempting to enter the market and provides a platform for merchants to offer experimental or unique products.

Talk Store. Kakao Talk's Talk Stores enable merchants to offer their products to Kakao Talk users through the specific merchant's Talk Store. Such Talk Store is displayed on the Kakao Talk profile of the merchant and can be directly accessed by Kakao Talk users to purchase the merchant's goods, communicate with the merchant through Kakao Talk, make payments for the merchandise through Kakao Pay and receive news and information regarding the merchant through the Channel function. See "– Advertising – Kakao Talk Channel." Adding the merchant's Channel to the user's Kakao Talk friend list also provides additional benefits to the Kakao Talk user in the form of discounts, coupons and free shipping, among others.

Talk Deal. Talk Deals are unique shopping opportunities offered to Kakao Talk users within the Kakao Talk application as part of the Shopping function. New Talk Deals encompassing a variety of products and price points are posted at a specific time every day at discounted prices by merchants with existing Talk Stores. When a product is offered as a Talk Deal, Kakao Talk users may take advantage of the two options of purchasing the product – either as an "immediate purchase" at the regular price or as a Talk Deal at a discounted price, the latter of which the user chooses to purchase the product in a pair with another purchaser. Talk Deal purchasers can either "open" a deal by originating the purchase or participate in the purchase as the second purchaser by joining the originator. The originator can recommend the product to Kakao Talk friends or alternatively wait for another Kakao Talk user to participate in the transaction as

links with "opened" deals are available for other users to join on the relevant Talk Deal page. Once a deal is "opened," other users can participate in the purchase for 24 hours. Depending on the method of participation, the purchaser may be subject to different amounts of points that can be used as cash on the Kakao Talk platform.

Portal Business

The Company's Portal Business generally refers to products and services that are offered by the Company through its Daum portal platform and relate to search and communication and advertising, among others. The Daum webpage, www.daum.net, and the Daum mobile application serve as a platform for a variety of portal-related online services optimised for PCs and mobile devices, respectively. The Daum portal provides comprehensive access to its search engine, online communities, e-mail accounts, online content and online shopping services. The layouts of the Daum webpage and Daum mobile application are intended to facilitate users' navigation through service offerings, while allowing the achievement of persistent branding by featuring the Daum logo prominently on every page. Such Daum portal-related services are also accessible through mobile web browsers on mobile devices. In addition, certain services are accessible through standalone mobile applications, such as Daum Café and Daum Webtoon mobile applications.

Search and Communication

Search Engine. The Daum search engine helps users locate and access the information and services they want quickly and easily. The search engine sorts through a vast and growing amount of information to deliver relevant and useful search results in response to user queries. Search results for a particular item not only include applicable websites but also related images, videos, maps, media articles, blogs, Q&A postings by users on the Daum portal, links to advertisers' websites and links to relevant items currently being sold on its online shopping mall, Shopping How. Users may also elect to conduct searches limited to certain categories, websites or time periods. The Company makes investments in research and development as well as information technology infrastructure to improve the accuracy of the Daum search engine's search results and provide more targeted and context-specific information to its users.

Online Communities. Launched in May 1999, online communities, which are called Daum Cafés, have become one of the most popular features on the Daum portal. Users generally create online communities around a common hobby or topic of interest, such as sports, cinema, relationships, music, politics, religion, academic affiliations or geographic background. Users can create communities that are open to the public or communities where access is restricted to a closed group of users. Members of an online community can post messages for general viewing, and users who are not registered with a particular community can also access the message boards to learn about a community and determine whether to join. In addition to using the message board, community members can host or join real-time chats in one-on-one or group settings. Registered users can also become bloggers on the Daum portal by posting writings periodically on the blogs they create. Registered users can subscribe to these blogs and add their comments to the blogs.

E-mail Accounts. The Daum portal offers free, personalised e-mail accounts, known as daum.net or hanmail accounts, to users who register with it. Such e-mail service is a core feature of the Daum portal which has been integrated with other services. For example, an e-mail is sent to users to let them know that a new article has been posted on the blog they subscribe to and to alert them about upcoming events planned by the online communities to which they belong.

Advertising

On the Daum portal platform as well as through other platforms and mediums, including Kakao Talk, the Company offers a broad range of advertising products and services in a variety of online formats, including search advertising and display advertising (such as advertising on its website pages, mobile applications and online video content), which may also incorporate targeting and interactive functions.

Advertisers use such advertising products and services to promote their brands, products and services and better target their marketing for a more productive connection with their desired audiences from among the Company's user base. Advertisers can choose to subscribe to a single product or service or take advantage of the Company's packaged advertising model, which gives them access to multiple products and services across its platforms. The Company's advertising clients include companies from a variety of industries, including food and beverage, entertainment, retail and online services.

Search Advertising. The Company's search advertising products and services, offered mainly through the Daum search engine and the Sharp (#) Search function of the Kakao Talk application, enable advertisers to present ads to users at the precise moment those users are looking for information related to what the advertiser has to offer. The Company's search advertising model encompasses both cost per click and cost per time products to attract advertisers that are seeking to efficiently obtain high levels of exposure with their advertising budgets.

The Company's flagship search advertising product applies a cost per click pricing model, where an advertiser competes against other advertisers in an auction and bids for a given advertisement spot, typically based on a search keyword. Advertisers can add or delete search keywords, increase or decrease bids for keywords and initiate or discontinue advertisements at any time. Advertisements are ranked for display based on a combination of the maximum cost per click set by the advertiser, click-through rates and other factors used to determine the relevance of the advertisement. This favours advertisements that are the most relevant to users, improving the experience for both users looking for information and advertisers looking for interested customers. If an advertisement does not attract sufficient user clicks, it moves to a less prominent position on the page, even if the advertiser offers to pay a higher amount. The Company generates revenue only when users click on the advertisement.

Display Advertising. The Company's display advertising products and services enable advertisers to display their ads through its platforms services, including but not limited to the Daum portal platform and Sharp (#) Tab and Kakao Biz Board on the Kakao Talk platform. See "– Talk Business – Communication and Search – Sharp (#) Tab" and "– Talk Business – Advertising – Kakao Biz Board."

Display advertisements are typically visually engaging and designed to reach a large number of consumers within a particular user segment. The Company's display advertising products are charged at either cost per time or per impression, with pricing differentiated based on placement, or at cost per click through a bidding system similar to that for its flagship search advertising product. The Company's targeting algorithm enables advertisers to select ad placements based on their desired audiences among its user base.

Shopping How. Through its Daum portal platform, the Company operates a comprehensive online shopping mall, called Shopping How, in association with leading online retailers and service providers in Korea. In Shopping How, users are able to compare the products and services that are available on each participating retailer's website in a consistent format, and then click through to the applicable retailer's website for purchases. The Company receives a commission based on the purchase price for sales that originate from Shopping How.

Other Platform Business

Other Platform Business refers to a new group of innovative products and services that are offered through platforms generally using the Kakao brand in areas including mobility, fintech, artificial intelligence and block chain.

Mobility

Through its subsidiary Kakao Mobility Corporation, in which the Company owned a 69.3% interest as of June 30, 2020, the Company offers a mobile transportation application, Kakao T, which was launched in October 2017. The Company, through such Kakao T platform, offers a variety of transportation-related services that were previously offered through standalone mobile applications that originated with the

Kakao taxi service launched in March 2015, and generally receives a commission based on fees generated from the services. Kakao Mobility Corporation was established in June 2017 and received a series of equity investments totaling Won 450 billion from a consortium of investors including TPG Capital and Orix Corporation for a minority interest in the company.

Taxi. Kakao T's taxi service is the leading mobile taxi application in Korea servicing both taxi drivers and taxi passengers. On mobile devices, users are able to enter their current location (through text search, location pin on a map or GPS location service) and an intended destination (through text search or location pin on a map) to search for and hail the nearest available taxi. Users can send pick-up time and location, drop-off location, vehicle and estimated ride time information as Kakao Talk notifications to friends. In order to improve service quality, taxi drivers and customers are asked to mutually rate each other at the end of each trip. Taxi fares can be processed through Kakao Pay or are paid directly to the taxi driver by the passenger. Kakao T's taxi service offers users a variety of options, including "Smart Call" which allows for the faster matching of a taxi for an additional fee, "Black" which is a premium service that connects passengers with luxury car drivers and "Blue" which directly connects passengers to the Company's own taxi operations conducted through subsidiaries of Kakao Mobility Corporation. Kakao T Blue was launched in November 2019 in select cities in Korea and is expanding its service nationally.

Designated Driver. Kakao T's designated driver service enables users to locate the nearest available designated drivers for their vehicles. On mobile devices, users enter their current location (through text search, location pin on a map or GPS location service) and intended destination (through text search or location pin on a map) and have the option to search for designated drivers based on the user's proposed fee amount or a fee amount to be calculated based on the time and length of the trip. Payments for Kakao T's designated driver service are automatically processed through Kakao Pay or paid directly to the driver in cash at the end of a trip. Kakao T's designated driver service offers multiple options, including "Premium" which provides premium service through uniformed drivers selected according to predetermined criteria.

Parking. The Company launched a mobile parking service in October 2017, which is offered through Kakao T. On mobile devices, users can search for parking lots near their destination, obtain information on the specific availability of spaces and parking fees, reserve spaces prior to their arrival and pay their parking fees through Kakao Pay upon exit.

Navigation. Kakao T incorporates a mobile navigation service that provides point-to-point driving directions with estimates for driving time based on real-time traffic conditions.

Bike. Kakao T offers a bicycle rental service in certain areas of Korea. The process of locating and renting a bicycle, payment for the rental and returning the bicycle is all conducted through the Kakao T platform.

Fintech

Kakao Pay. Kakao Pay is a mobile payment service that simplifies the payment process by enabling users to store their credit card or bank account information and make online payments by entering a six digit Kakao Pay password and offline payments by scanning a QR code. The Company has partnered with 14 Korean credit card companies, including all of the major credit card companies in Korea, for online credit card payments using Kakao Pay and is expanding the number of online and offline retailers accepting Kakao Pay as a form of payment. As of June 30, 2020, Kakao Pay had over 33 million users that were registered as members.

The Company operates Kakao Pay through its subsidiary Kakao Pay Corp., in which it owned a 56.1% interest as of July 31, 2020. In February 2017, the Company entered into a strategic alliance with Ant Financial Services Group, an affiliate of Alibaba Group Holding Limited that manages Alipay and Alibaba's digital banking business, pursuant to which Ant Financial Services Group made a US$200 million investment in Kakao Pay Corp. in June 2017. In July 2020, the Company and Ant Financial

Services Group made further investments of US$37 million and US$95 million, respectively, in Kakao Pay Corp. Under the strategic alliance, the Company is pursuing cooperation in technology sharing as well as access to retailers in Korea and overseas.

In February 2020, the Company acquired a 60% equity interest in Kakao Pay Securities (formerly known as Baro Investment & Securities Co.), which became the Company's consolidated subsidiary. Kakao Pay Securities offers consumer and corporate investment services on the Company's Kakao Pay platform.

Artificial Intelligence

In October 2017, the Company launched an intelligent personal assistant device called Kakao Mini. Kakao Mini incorporates Kakao I, the Company's artificial intelligence service, which enables users to utilise various services offered on the Company's platforms through voice interaction, including sending and receiving Kakao Talk messages, music playback through Melon, hailing taxis through Kakao T, searching the Internet through the Daum search engine, managing their calendars and accessing weather, traffic and other real time information, such as news and stock prices.

In addition, through business partnerships with third parties, Kakao I can be utilised to enable users to control certain elements in homes and home appliances, such as thermostats and lighting, via voice commands, through the Company's Kakao Home platform. Companies with products that utilise Kakao Home include leading construction companies for residences, such as GS E&C Corp., Samsung C&T Corporation and POSCO Engineering & Construction Co., as well as leading home appliance brands, such as Philips and Coway.

Content Operations

The Company's content operations comprise its Game Business, Music Business, Other Content Business and IP Business, offering access to a wide range of digital content supplied by Korea's leading content providers through various platforms using the Kakao, Daum and Melon brands. The Company develops and sources new and compelling content to attract new users and increase user engagement through the development of platforms that optimise the users' experience with such content. Total revenue from the Company's content operations amounted to Won 1,378 billion in 2018, Won 1,635 billion in 2019, Won 799 billion in the first six months of 2019 and Won 887 billion in the first six months of 2020.

Game Business

The Company is one of the global pioneers in social mobile gaming, and it operates its mobile and PC games business through its subsidiary Kakao Games Corp., in which it owned a 59.0% interest as of June 30, 2020. In September 2020, Kakao Games Corp. conducted an initial public offering of common shares and listed its common shares on the KRX KOSDAQ Market of the Korea Exchange on September 10, 2020, following which the Company's ownership interest decreased to 46.1%. Kakao Games Corp. remains a consolidated subsidiary of the Company.

As of June 30, 2020, the Company offered over 1,100 mobile and PC games globally through its Kakao Game and Daum Game platforms. The Company's mobile and PC games are designed to appeal to a broad base of players across demographics and geographies and span a variety of genres, including action role-playing games, strategy role-playing games, MMORPGs, casual games, shooting games, simulation games and miscellaneous other games. The Company also has operations relating to golf, including screen golf, through Kakao VX, a subsidiary of Kakao Games Corp.

Mobile Games. With advancements in smartphone technology and telecommunications infrastructure, it has become possible to play mobile games almost anywhere at any time, including during commutes, office breaks and other situations where such games were previously inaccessible. Leveraging the user base of Kakao Talk, players of the Company's mobile games are able to invite their Kakao Talk friends to play and compete against them. Players can see and compare how their scores for a particular game rank

against those of any of their Kakao Talk friends who have also played such game, and players can interact with each other by sending and requesting in-game items. Combined with the relatively short and simple gameplay on entry-level games optimised for mobile devices, these social features of the Company's mobile games have created an organically growing and loyal user base that is increasingly shifting to more advanced high-engagement games.

The Company's mobile games typically can be downloaded and played for free, and such games generate revenue when players purchase in-game items that enhance, prolong or accelerate game play or augment or customise a particular player's experience. These items enable players to enhance their gaming experience by improving game character performance and skills and making more game features accessible. In 2019, the Company launched Tera Classic in August and Legendary Moonlight Sculptor in September, the first MMORPGs published by Kakao Games Corp., which was followed by the global launch of RPG Guardian Tales in July 2020 in over 200 countries including the United States, France and Taiwan.

PC Games. The Company's PC games can be downloaded onto a PC or played directly in the web browser of a PC and are either free to play, similar to its mobile games, or are subscription-based, which provide users with continual access to the game content during the duration of the user's subscription. In-game items for purchase may be offered in both free-to-play games and subscription-based games. Users can use their Kakao ID to log on and play games. Certain of the Company's PC games are also available through retail distribution channels, such as Internet cafés, including the shooting game PlayerUnknown's Battlegrounds developed by Krafton Inc. (formerly known as Bluehole Studio Inc.), in which the Company owns a minority interest.

While the wide adoption of mobile devices globally and the free-to-play business model for mobile games platforms has increased demand for such games, revenue from PC games continues to constitute a significant portion of the Company's game revenue. The MMORPG Black Desert has continued to attract players globally, including in Europe and North America, since 2015, and the globally popular action RPG Path of Exile was launched in Korea by the Company in June 2019.

Golf. Through Kakao VX, the Company conducts its golf-related operations, including Kakao Golf Reservation, a mobile application for tee time reservations at golf courses in Korea, Kakao Friends Golf, golf merchandising using Kakao Friends characters, and Friend Screen (formerly known as Gswing), a leading screen golf system. The Company also operates indoor screen golf rooms using Friend Screen. Screen golf is a virtual reality golf game in which players play a virtual version of a round of golf in an indoor room equipped with a large screen at which players hit their balls with golf clubs. Famous golf courses in Korea and around the world are simulated on the screen for players to experience via virtual reality.

Music Business

The Company offers users access to music and related content through platforms using its Melon and Kakao brands, including online music streaming and downloading service.

Melon

The Company utilises its Melon online music platform for music-related content as well as subscription-based access to online music streaming and downloading services. The Melon online music service currently offers a variety of music-related content, including the Melon Top 100 chart that ranks the most frequently played songs of Melon online music subscribers on a real-time basis, as well as a selection of more than 40 million songs and possesses one of the largest active user base among online music services in Korea. As of June 30, 2020, the Melon online music service had over 5.1 million paying subscribers.

The Company offers Melon online music services in various formats that are specifically designed for mobile and other connected devices, PCs and televisions. Melon online music subscribers can also stream music through the music player within the Kakao Talk application, offering convenient access to users of the Kakao Talk platform.

The Melon online music service offers a broad selection of Korean and international music, both in streaming and download formats, as well as a variety of features designed to enhance the experience of users. For example, users of streaming services are able to indicate "like" with respect to a song as it is being played, and the Melon online music service makes music recommendations based on data collected from users. The Melon online music service also highlights the latest music releases by popular artists in Korea and abroad.

Such features offered through the Melon online music platform enable the Company to accumulate user information, including their preference for music genres and artists as well as their purchasing patterns. The Company continually monitors and analyses such data to better understand demand trends for various user segments. The Company also develops analytical models based on such customer data to identify and recommend songs of a particular genre or artist to users who are likely to make additional purchases. Through such analyses, the Company is also able to identify the types of offers and promotions to which select users will likely respond, which enables it to more effectively design and target its marketing activities. The Company obtains music content for its Melon online music service both internally from its content distribution business as well as from third-party music distributors in Korea and abroad, and pay fees for such content based on its sales. See "– Content Distribution."

The Company offers a wide range of payment plans that seek to address the individual needs of its Melon online music users. For downloading digital music and music videos, the Company charges for each download based on the file format, as well as offers an option to purchase monthly subscription packages that provide a discount for higher volume downloads of music. For streaming services offered through the Melon online music platform, the Company charges monthly subscription fees. Subscribers are also able to combine streaming services with downloading music in DRM (digital rights management) format that restricts access after a 30-day period. Subscribers may also combine streaming services with packages that enable downloads of music in unrestricted MP3 format.

Music Content Distribution

Through its subsidiary Kakao M, a leading entertainment company in Korea in which the Company owned a 78.2% interest as of June 30, 2020, the Company enters into arrangements, generally on an exclusive basis, with various production companies (including those that are a part of Kakao M's content production operations) for online and offline distribution of music content. See "– IP Business – Content Production." Through the Company's acquisition of LOEN Entertainment in March 2016, the predecessor of which (Seoul Record) was founded in 1978, the Company has accumulated over four decades of experience in distributing music content in Korea that spans all major music genres.

The Company generates sales from the distribution of new releases of current artists as well as existing recordings provided by production companies. Its music content distribution activities consist mainly of the following.

Online Distribution. In Korea, there has been a proliferation of websites and mobile applications that sell digital music on a per-album or per-track basis or offer subscription and streaming services. In addition to its Melon online music service, the Company has music content distribution arrangements with a number of online music service providers, including Genie, FLO, Bugs! and VIBE, to make music content available for access in digital formats such as digital downloads and streaming. Such arrangements require the online music service providers to pay specified fees to the Company based on their sales of such content.

Offline Distribution. Most of the Company's sales of music content in CD or DVD format are made to physical wholesale or retail sellers in Korea, including music specialty stores, general entertainment specialty stores, discount stores, mass merchants and other traditional retailers. In addition, sales to both the online distribution arms of traditional retailers and online retailers have become an increasingly important sales channel for CDs and DVDs.

Global K-pop Content Channel. In light of the increasing popularity of K-pop around the world, the Company operates 1theK, a global K-pop channel that streams music videos on YouTube and offers social network services. As of June 30, 2020, the channel had over 26 million subscribers on YouTube globally.

Such vertical integration and comprehensive range of music-related services provide a competitive edge to the Company in terms of efficiency compared to other music entertainment companies in Korea, which may lead to greater insight into, and more effective response to, rapidly evolving trends in the music industry, as well as a more efficient cost structure. The integrated services, strong brand power and substantial experience in the Korean music market of the Company enhance its position as a leading music entertainment company in Korea to enable taking advantage of business opportunities offered by the increasing global popularity of K-pop.

Melon Ticket

Through Melon Ticket, which can be accessed through Kakao Talk, the Melon online music service mobile application, a standalone mobile application and its own web page, Kakao Talk and Melon online music service users can purchase tickets for concerts, musicals, plays, exhibitions and other events. The Company receives a commission based on the purchase price for sales of such tickets.

Other Content Business

The Company offers a broad range of other contents, including web-comics, web-novels, movies and television shows, that can be accessed by users through platforms using its Kakao, Daum or other brands. For web-comics and web-novels, users may generally access such content under its "wait or pay" model, pursuant to which users either wait for a specified period of time, or pay a fee or view certain compensatory advertisements, to be allowed to view or read an episode or chapter. In April 2017, the Company entered into a licensing agreement with an affiliate of its shareholder MAXIMO PTE. LTD. for the use of its "wait or pay" model on Tencent DongMan, a leading web-comics and animation platform in China, and in December 2018, the Company acquired NeoBazar, one of the leading content platforms in Indonesia.

Kakao Page

Through the Kakao Page function within the Kakao Talk application and the standalone mobile application, users can access a wide variety of web-comics, web-novels, movies and television shows aggregated from leading content providers and optimised for mobile devices. As of June 30, 2020, Kakao Page had a library of over 7,000 titles of original content, including web-comics, web-novels, movies and television shows. The Company operates its Kakao Page platform through its subsidiary, Kakao Page Corp. (formerly known as Podotree Inc.), in which it owned a 63.6% interest as of June 30, 2020. In December 2016, a consortium of investors including Anchor Equity Partners and GIC Private Limited made a Won 125 billion equity investment in Kakao Page Corp. for a minority interest in the company. In January 2020, the Company rebranded Kakao Page as a global application available in certain countries, including China, Indonesia, Taiwan and Thailand, which is expected to launch in other countries with an audience for Korean content.

Piccoma

Through its wholly-owned subsidiary Kakao Japan Corp., the Company operates Piccoma, a leading mobile web-comics application in Japan, which is currently the largest comics market in the world. Following the global trend of digitalisation of comics, Japanese users are increasingly using their mobile and other connected devices to view web-comics, and the Company launched its Piccoma platform in April 2016 to take advantage of potential growth opportunities in Japan. Piccoma offers users access to Japanese-language web-comics provided by both Japanese and non-Japanese authors.

Daum Webtoon

Through Daum Webtoon, which can be accessed through a webpage that forms a part of the Daum portal platform and a standalone mobile application, the Company offers users access to web-comics from leading and up-and-coming authors. The Company also offers amateur authors the opportunity to publish their work through its annual Daum Webtoon League competition.

IP Business

Kakao Friends Merchandising

Through its wholly-owned subsidiary Kakao IX Corp., the Company engages in character marketing using originally-designed Kakao Friends characters in order to promote brand awareness and appeal and to further foster affinity and engagement by its user base. The Company sells official Kakao Friends merchandise, such as stationery goods, plush toys, action figures and limited edition collaboration items, at both permanent and "pop-up" Kakao Friends stores, as well as on Kakao Talk Gift Shop. From time to time, the Company licenses its proprietary Kakao Friends characters to third parties for production and sale of merchandise.

Content Production

In addition to music content distribution, the Company offers other services that cover key components of the entertainment industry value chain, including content production, through Kakao M. See "– Music Business – Music Content Distribution." Kakao M was established as EN Company Co., Ltd. in September 2018 and changed its name to Kakao M shortly thereafter. The Company transferred to Kakao M the content production and distribution operations and general management services of the Former Kakao M (formerly known as LOEN Entertainment), the former operator of Melon online music streaming and downloading service, after the Former Kakao M's merger with and into the Company in September 2018. Anchor Equity Partners has made equity investments in Kakao M totaling Won 210 billion for a minority interest in the company.

The Company operates a network of production companies in Korea for musicians, actors and other entertainment industry personnel. The Company's production companies include Starship Entertainment, Play M Entertainment, Cre.ker Entertainment and Mun Hwa In, each of which generally focuses on a specific entertainment market. Services provided by the Company's music production companies encompass all stages of the production process for music content, including identifying promising recording artists and entering into management contracts with them for their training and development, collaborating with such artists to produce audio and video recordings of their work, and marketing and selling such recordings to music distributors. The Company also provides general management services for artists, including in respect of advertising, merchandising, sponsorships, concerts and other promotional activities. As of June 30, 2020, the Company represented more than 90 musicians and 150 actors, including singer IU, girl group Apink and actors Byung-hun Lee and Yeon-suk Yoo.

Recording artists' contracts define the commercial relationship between the recording artist and the production company. The Company negotiates agreements with artists that define its rights to use the artists' copyrighted recordings. While the duration of the contracts may vary, the Company's contracts with its recording artists typically grant the Company the right to use the artists' recordings for the duration of the copyright. In accordance with the terms of the contract, the artists receive royalties based on sales and other forms of utilisation of the artists' recorded works and performances. A substantial majority of the contracts are "expanded-rights" arrangements, pursuant to which the Company shares in the concert, merchandising, sponsorship/endorsement, fan club and other non-traditional music revenue associated with its artists.

The Company's contracts with established recording artists generally provide for greater advances and higher royalty rates, and entitle it to fewer albums, compared to its contracts with new artists. It is not unusual for the Company to renegotiate contract terms with a successful artist during the term of the existing contract, sometimes in return for an increase in the number of albums or other content that the artist is required to deliver.

The Company also produces visual content, including movies and television shows, through Kakao M's studio subsidiaries including Moonlight Film and Mega Monster.

SALES AND MARKETING

The Company's large user base, as well as the brand power of its platforms and breadth of its content offerings, are key drivers of its user base growth. The Company markets many of its products and services through its platforms by stimulating user awareness and effectively capturing user interest. In the Company's online community, "word of mouth" is an important driver for the adoption of value-added services, as positive feedback from users can be quickly communicated through various channels, including Kakao Talk and Daum Cafés. From time to time, the Company utilises television commercials and Internet and mobile advertising as well as product placements in television shows. The Company conducts a variety of online and offline marketing and promotional activities, including joint marketing activities with mobile game developers and distributors, as well as exhibitions featuring the Company's widely-known Kakao Friends characters.

The Company markets its advertising, content, e-commerce and fintech services through a dedicated sales force, as well as through third-party advertisement agencies. Leveraging its user base, the Company also offers targeted advertising solutions for its participating online shopping mall and e-commerce merchants to reach their target users and increase online sales. This enables participating merchants to lower their marketing costs and achieve higher returns using the Company's user targeting technology. The Company also invests in customer support for its users, business partners and advertisers.

Marketing and promotional activities are also critical aspects of the Company's entertainment business and have significantly contributed to the enhancement of the brand image of Melon, as well as its other entertainment brands. The proliferation and diversity of available marketing channels, including the continual development and adoption of new interactive technologies and media, have made it more difficult and complex for entertainment service providers to reach their target audiences in an effective and efficient manner. Leveraging the Company's long experience in the Korean music industry and its deep understanding of evolving demand trends across different customer segments, the Company utilises a mix of channels to market its entertainment-related products and services to target audiences, including television, the Internet (including social network services), radio and print media. The Company also sponsors various promotional events, including concert performances and celebrity appearances, which increases its exposure to music fans to enhance music entertainment brand recognition. For example, the Company sponsors the Melon Awards, which are weekly awards conferred based on online voting by Melon subscribers. The Company also hosts a major offline music award event held every December.

Melon's VIP Program, a customer rewards program, is also an important component of the Company's marketing and brand loyalty strategy. The VIP Program is designed to recognise and reward Melon's most loyal customers based on the length of their subscription. Program members are able to participate in various promotional events based on their tier status within the VIP Program.

COMPETITION

The Company faces significant competition in almost every aspect of its business. The Company primarily competes for the time, attention and spending of its users with providers of other forms of mobile, online and in-home communication, entertainment and information services. The Company faces competition from mobile telecommunications companies, game companies, e-commerce companies, music and video service companies, financial service companies and other Internet-related companies that offer products and services that may compete with specific features of the Company's products and services, including those offered through its platforms using the Company's Kakao, Daum and Melon brands. In particular, the Company competes directly with other major Korean Internet portal services, such as Naver, to provide comprehensive mobile and online services to users. In addition, the Company competes with international competitors, such as Facebook and Google, which offer a wide range of information and communication services and products as well as online advertising services. Furthermore, the Company competes with offline and online media and advertising businesses for a share of advertisers' budgets and in the development of tools and systems for managing and optimising advertising campaigns.

There is intense competition for users, traffic and advertisers in the Korean market for Internet portals and related services, as a result of which the Company has historically experienced, and may continue to experience, difficulty in maintaining or increasing the market share and revenue of its Daum portal-related services. In addition, although the Company operates the leading mobile messaging service in Korea, the mobile messaging markets outside Korea are dominated by various other companies, many of which have greater financial resources and substantially larger user bases. For example, the Kakao Talk service faces competition from other well-established mobile messaging services, such as Facebook's Whatsapp, Tencent's WeChat, Naver's LINE Messenger and Telegram. The Company may selectively target new categories and markets outside of Korea to leverage its strengths and exclusive content offerings in order to obtain a competitive advantage. Competition in the mobile game market in Korea is also intense, and it may become more challenging for the Company to retain existing users and attract new users as competition from other online game operators, based in Korea as well as overseas, is likely to increase in the future. In addition, the Company's Kakao Friends merchandising business also faces fierce competition from other companies that own and utilise popular character intellectual property based in Korea as well as overseas.

The key areas in which the Company competes include:

- **Users and User Engagement.** The Company competes to attract, engage and retain users. The Company's ability to compete effectively for users depends on several factors, including the utility, ease of use, performance, quality and reliability of its products and services, as well as its ability to establish and maintain relationships with business partners.

- **Advertising.** A significant portion of the Company's revenue is generated from the sale of advertising services, and the Company competes to attract and retain advertisers. The Company's ability to compete effectively for advertiser spending depends on many factors, including the size and composition of its user base, as well as the reach, relevance and engagement capabilities of its advertising targeting tools.

- **Talent.** The Company competes for highly skilled personnel, including senior management, engineers, developers, designers and service managers. Competition for highly skilled personnel is intense, and the Company faces competition for qualified personnel from other mobile and online

businesses, other companies in the technology industry and traditional media businesses. The Company's ability to compete effectively for highly skilled personnel depends on many factors, including a work environment that fosters and rewards creativity and innovation, as well as attractive compensation packages.

In the Company's online music services business, the principal competitors of the Melon online music service include Genie, FLO, Bugs! and VIBE. In the Company's music content distribution business, the principal competitors of Kakao M are Genie Music and Dreamus Company, owned by KT and SK Telecom, respectively. In the Company's content production business, its production companies compete mainly with other production companies in Korea in signing and managing recording artists, as well as actors and other entertainment industry personnel, and in producing and marketing music and video content to distributors. In the Company's web-comic and web-novel content distribution business, the principal competitor of Kakao Page and Daum Webtoon is Naver Webtoon.

Competition relating to the Company's fintech and mobility services is also intense as a growing number of new and existing companies seek to enter or expand into such areas. The principal competitors of Kakao Pay include Samsung Pay, Naver Pay and Toss, while the principal competitors of Kakao T include T map Taxi and Uber.

INTELLECTUAL PROPERTY

The Company owns various trademarks, service marks and related logos, including "Kakao," "Kakao Talk," "Daum" and "Melon." Such brand names of the Company are well-recognised in Korea, and its patents, copyrights, trademarks and other intellectual property are critical to its success. To establish and protect its proprietary rights, the Company relies on a combination of patents, trademarks, copyrights, trade secrets (including know-how), license agreements, confidentiality procedures, non-disclosure agreements with third parties, employee disclosure and invention assignment agreements, and other contractual and implicit rights. The Company also enters into confidentiality and invention assignment agreements with its employees, contractors and business partners and controls access to its proprietary technology and information.

As of June 30, 2020, the Company had 473 issued patents in Korea and 113 issued patents in other countries primarily relating to telecommunications, social networking, web technologies and infrastructure technologies. The Company also pursues registrations of copyrights, domain names, designs, trademarks and service marks in Korea and elsewhere where it deems appropriate.

As of June 30, 2020, the Company had 2,615 registered trademarks and service marks in Korea and 994 registered trademarks and service marks in other countries. While most of the intellectual property the Company uses is developed by itself, from time to time it acquires certain rights to proprietary intellectual property from third parties.

TECHNOLOGY

The Company operates a media research centre in Jeju Island and a research and development centre in Pangyo, near Seoul, and the Company has assembled a team of highly skilled engineers and computer scientists whose expertise spans a broad range of technical areas. The Company competes aggressively for talent, and its engineers and computer scientists drive innovation, technology development and operations. Talented personnel is essential to the Company as it faces significant challenges across systems design, machine learning, data mining, networking, software engineering, distribution systems, cluster design and other areas. In particular, the Company has made significant investments in scalable infrastructure to support large-scale systems, data management and analysis technology, web search technology, online advertising technology and voice and video call quality solutions.

Scalable Infrastructure to Support Large-Scale Systems

Many of the Company's products and services are built on distributed computing architecture. The Company uses a combination of off-the-shelf and custom software running on clusters of commodity computers to amass substantial computing capability. The Company intends to continue to develop server infrastructure that is operationally efficient, scalable and reliable, which is designed to do the following:

- adapt to meet the needs from user base growth and increasing activities on the Company's online platforms, through decentralised data networks;

- improve the functionality of servers through automated server management technology, thereby reducing cost and improving operational agility;

- automatically detect and respond to errors in the Company's infrastructure components, including application servers, storage infrastructure and system networks; and

- maintain reliable redundant systems for the Company's infrastructure components to reduce the possibility of service interruptions.

The Company's infrastructure enables the storage and processing of large datasets and deployment of its services and products to users on a global basis. As its user base grows and the level of engagement and activities on its online platforms continue to increase, the Company may need to continue to expand its computing infrastructure to sustain and further improve its operating efficiency and to provide its products and services quickly and reliably to all users in Korea and elsewhere around the world.

Data Management and Analytics Technology

In order to provide each user with a personalised experience, the Company processes and analyses a vast and growing amount of content shared by its users, business partners and advertisers. Accordingly, the Company has invested in developing technology and analytics in areas including the following:

- a storage infrastructure that enables the Company to securely store large amounts of data generated by its users;

- increased storage capacity for more efficient data distribution;

- a high-volume business intelligence system that enables large-scale data analysis; and

- a data warehouse infrastructure that provides tools to enable easy data summarisation, *ad hoc* querying and analysis of large datasets.

Web Search Technology

The Company's web search technology uses a combination of techniques to determine the significance of a web page independent of a particular search query as well as to determine the relevance of that page to a particular search query. In particular, the Company employs:

- a page ranking technique that determines the significance of a web page by examining the link structure of the web;

- text-matching techniques that compare search queries with the content of web pages to help determine relevance. Many aspects of a page's content are factored into the equation, including the proximity of individual search terms to each other on a given web page; and

- deep learning techniques that improve speech and image recognition, search capabilities and natural-language understanding.

Online Advertising Technology

The Company offers advertisers powerful online media through which they can effectively reach the Company's large user base in a targeted manner. The Company's online advertising technology enables thousands of relevant, targeted advertisements each day based on search terms its users enter or content they view on its online platforms. The key elements of the Company's advertising technology include:

- advertising auction system technology that enables advertisers to compete against other advertisers in an auction and bid for a given advertisement spot, typically based on a search keyword, as well as automatically deliver relevant, targeted advertising;

- contextual advertising technology that employs techniques that consider factors such as keyword analysis, word frequency and the overall link structure of the web to analyse the content of individual web pages and to match advertisements to them almost instantaneously; and

- systems to better analyse user preferences and content consumption patterns in order to provide more personalised advertisements allowing advertisers to effectively manage their advertising budgets.

Audio and Video Quality Solutions

Audio and video quality is critical to the enjoyment of the audio and video services offered through the Company's platforms, and the Company has made significant engineering and development efforts to improve its audio and video quality. Key areas of the Company's investments include the following:

- proprietary audio and video communications technology that can reliably process large amounts of audio/video data transfer and calls on a daily basis; and

- high performance codec and data transmission technology and routing algorithms to improve overall audio/video quality and user experience.

PROPERTIES

As of June 30, 2020, the Company had Won 373 billion of property and equipment, which primarily consisted of the Company's head office building in Jeju Island and its servers and networking equipment. As of June 30, 2020, the Company also leased various office facilities in Korea and other countries, including Japan.

EMPLOYEES

The Company's employees are critical to its success. The Company seeks employees who are motivated to develop new and innovative products and services for the Company's rapidly growing user base as well as for its business partners and advertisers. Many of the Company's new hires have prior experience in the Internet, mobile services, entertainment or related industries, and the Company strives to hire and retain employees with diverse backgrounds in addition to relevant work experience in order to achieve its objective to continue growth.

On a separate basis, the Company had 2,446, 2,775, 2,300 and 2,373 full-time employees, which includes regular employees and contract-based employees other than registered directors, as of December 31, 2017, 2018 and 2019 and June 30, 2020, respectively. From time to time, the Company also employs part-time employees to enhance its operational efficiency. The following table sets forth a breakdown of the Company's full-time employees as of June 30, 2020:

Entity	Number of full-time employees
Kakao Corp.	2,373
Consolidated subsidiaries	6,975
Total	9,348

The Company reviews the salaries of its full-time employees annually. Salaries are adjusted based on individual and team performance, industry standards and inflation. As an incentive, a discretionary bonus may be paid based on the performance of individuals as well as the overall performance of the relevant team or company. The Company also provides a wide range of fringe benefits to its employees, including medical insurance, periodic health examinations, subsidies for significant personal events (such as marriage, childbirth or death of a family member) and meal subsidies.

The Company has a labour union which was formed in 2018. The Company has not experienced any work slowdowns, work stoppages or strikes. From time to time, the union and the Company's management negotiate and enter into new collective bargaining agreements, which was last entered into in June 2019 when a wage rate increase was negotiated. Under applicable Korean labour laws, the Company is restricted from involuntarily terminating a full-time employee except under certain limited circumstances.

The Company's full-time employees in Korea, including executive officers as well as non-executive employees, are subject to a pension insurance system pursuant to the National Pension Act of Korea, under which the Company makes monthly contributions to the pension accounts of the employees, and upon retirement, such employees are paid from their pension accounts. The Company contributes an amount equal to 4.5% of an employee's standard monthly wages, and each employee contributes 4.5% of his or her standard monthly wages, into his or her personal pension account. In addition, in accordance with the Guarantee of Worker's Retirement Benefits Act of Korea, the Company has adopted retirement pension plans for its employees. Contributions under the retirement pension plans are deposited annually into a financial institution, and an employee may elect to receive a monthly pension or a lump-sum amount upon retirement, pursuant to a defined benefit plan or a defined contribution plan. The defined benefit plan guarantees a certain payout at retirement, according to a fixed formula based on the employee's average salary and the number of years for which the employee has been a plan member. The defined contribution plan, in which the employer's contribution is determined in advance on an annual basis, is managed directly by the employees through their individual accounts under the plan. For further information regarding the Company's retirement pension obligations with respect to its employees, see Notes 20 and 21 of the notes to the Company's annual consolidated financial statements as of and for the years ended December 31, 2019 and 2018 appearing elsewhere in this offering circular.

LEGAL AND REGULATORY PROCEEDINGS

The Company is subject to a number of claims and is a party to a number of legal and regulatory proceedings that are incidental to the normal course of its business. The Company is not currently involved in any litigation, administrative proceeding or arbitration, the outcome of which would, in the reasonable judgment of its management, have a material adverse effect on its financial condition or results of operations.

INVESTMENTS

In addition to the Company's operating subsidiaries such as Kakao Mobility Corporation, Kakao Games Corp., Kakao Page Corp. and Kakao M, the Company has investments in a number of entities, some of which are accounted for as consolidated subsidiaries and others as associates or available-for-sale securities. See Notes 1.1, 10 and 16 of the notes to the Company's annual consolidated financial statements as of and for the years ended December 31, 2019 and 2018 and Notes 1-(1), 1-(2), 1-(3) and 9 to the Company's condensed consolidated interim financial statements as of June 30, 2020 and for the six month-periods ended June 30, 2020 and 2019, appearing elsewhere in this offering circular.

Kakao Bank

As of June 30, 2020, the Company owned a 33.5% equity interest in Kakao Bank, which became an associate of the Company in November 2019. While under the Bank Act of Korea, non-financial business group companies such as the Company are prohibited from acquiring beneficial ownership in excess of 10% of a nationwide bank's outstanding voting shares, the Act on Special Cases Concerning the Establishment and Operation of Internet-only Banks, which became effective in October 2019, allows for non-financial investors such as the Company to hold less than 34% of an internet-only bank's outstanding voting shares. Accordingly, the Financial Services Commission approved the Company's acquisition of Kakao Bank shares from Korea Investment Holdings Co., Ltd., the parent company of Korea Investment & Securities Co., Ltd., a major securities company in Korea, and the previous largest shareholder of Kakao Bank. The Company is currently the largest shareholder of Kakao Bank. Other major shareholders of Kakao Bank include Kookmin Bank, one of the leading commercial banks in Korea with a 9.9% interest as of June 30, 2020.

Kakao Bank commenced operations in July 2017 and is the largest Internet-only bank in Korea in terms of asset size. Internet-only banks generally operate without branches and conduct their operations primarily through electronic means, which enable them to minimise costs and offer customers higher interest rates on deposits as well as lower lending rates. As of June 30, 2020, Kakao Bank had over 12 million holders of deposit accounts.

MANAGEMENT

The Company's board of directors has ultimate responsibility for the administration of its affairs. The Company's articles of incorporation currently provide for a board of directors consisting of three to 11 directors. The Company currently has seven directors, three of whom are standing directors and four of whom are outside directors. Standing directors are directors who are full-time executive officers of the Company, while outside directors are non-standing directors elected from among those persons who do not have a special relationship with the Company that would interfere with the exercise of their independent judgment. Directors are elected at a general meeting of shareholders by a majority vote of those present or represented so long as the affirmative votes also represent no less than 25% of the issued and outstanding shares with voting rights. The Company's outside directors are elected at a general meeting of shareholders from among those candidates recommended by its Nomination Committee. The term of office for the Company's directors is a period of less than three years determined at a general meeting of shareholders. However, the term of office will be extended to the close of the annual general meeting of shareholders if the term of office for the director ends before the close of the annual general meeting of shareholders convened with respect to the last fiscal year within such term of office.

The representative director is a director elected by a majority of the board of directors and is empowered to make decisions regarding the Company's day-to-day business as chief executive officer. Min Soo Yeo and Soo Yong Joh, the Company's chief executive officers, currently serve as the Company's representative directors.

The tables below set forth select information about the Company's directors and executive officers as of June 30, 2020. The business address of each of the Company's directors and executive officers is at the Company's registered office at 242, Cheomdan-ro, Jeju-si, Jeju-do, Korea.

Directors

Name	Year of Birth	Position	End of Current Term	Other Positions
Beom Su Kim	1966	Chairman of the board of directors	March 24, 2023	Non-standing director, kcubeholds Co., Ltd.; Standing director, Kakao Brain; Standing director, Kakao Japan Corp.
Min Soo Yeo	1969	Co-chief executive officer and representative director	March 24, 2022	None
Soo Yong Joh	1974	Co-chief executive officer and representative director	March 24, 2022	Standing director, B Media Company
KyuJin Cho	1973	Outside director; Member of the Audit Committee	March 24, 2021	Professor of mechanical and aerospace engineering and head of the Soft Robotics Research Center, Seoul National University
Seok Yun	1962	Outside director; Chairman of the Audit Committee	March 24, 2021	Standing director and representative director, Yoon & Co.
Sejung Choi	1971	Outside director; Member of the Audit Committee	March 24, 2021	Professor of media studies, Korea University; Outside director of media communications, JTBC; President of Korea Media Management Association; Editorial committee chairman, Korea Advertising and Public Relations
Saerom Park	1990	Outside director	March 24, 2021	Assistant professor of convergence security engineering, Sungshin Women's University

Beom Su Kim has served as chairman of the Company's (and the Former Kakao's) board of directors since January 2007. Mr. Kim is the co-founder of K Cube Ventures and the founder of Hangame Communications Corp. (currently part of NHN Entertainment Corp.) and formerly served as co-chief executive officer of NHN Corporation. Mr. Kim has a master's degree in industrial engineering from Seoul National University.

Min Soo Yeo has served as the Company's chief executive officer and representative director since March 2018. Mr. Yeo has previously served as the managing director of the global marketing division of LG Electronics Inc. and had also served as the vice president of the advertisement business division of the Company. He has a bachelor's degree in communications from Korea University and a master's degree in business from the Massachusetts Institute of Technology.

Soo Yong Joh has served as the Company's chief executive officer and representative director since March 2018. He also serves as the chief executive officer of JOH & Company. Mr. Joh previously served as the Company's director of Community Brand Center and has a bachelor's and master's degree in industrial design from Seoul National University.

KyuJin Cho has served as the Company's outside director and Audit Committee member since March 2017. Mr. Cho is a professor of mechanical and aerospace engineering at Seoul National University and has a Ph.D. in mechanical engineering from the Massachusetts Institute of Technology.

Seok Yun has served as the Company's outside director and chairman of the Audit Committee since March 2020. Mr. Yun formerly served as the vice president and management advisor of Samsung Active Asset Management and is the chief executive officer of Yun & Company. He has a bachelor's degree in economics from Yonsei University and a master of business administration degree from New York University.

Sejung Choi has served as the Company's outside director and Audit Committee member since March 2020. Ms. Choi serves as the outside director of media communications at JTBC and the editorial committee chairman of Korea Advertising and Public Relations. She has a Ph.D. in mass media advertisement from Michigan State University.

Saerom Park has served as the Company's outside director since March 2020. Ms. Park serves as an assistant professor of convergence security engineering at Sungshin Women's University. She previously served as a researcher at the centre for mathematics-based industry data analysis at Seoul National University and has a Ph.D. in industrial engineering at Seoul National University.

Board Practices

The Company's articles of incorporation provide for the establishment of the following committees under its board of directors:

- Audit Committee;
- Compensation Committee;
- Nomination Committee; and
- other committees as deemed necessary by the Company's board of directors.

The Company's board of directors appoints the members of these committees, except for members of its Audit Committee, who are appointed at a general meeting of shareholders.

Audit Committee

Under the Korean Commercial Code and the Company's articles of incorporation, the Company is required to have an Audit Committee consisting of three or more directors. The Company's articles of incorporation currently provide that all members of the Audit Committee must be outside directors. The committee reviews all audit and compliance-related matters and makes recommendations to the Company's board of directors. The Audit Committee's primary responsibilities include:

- engaging independent auditors;
- approving audit and non-audit services and fees of independent auditors;
- reviewing audit results and reports, including comments and recommendations to the management;
- reviewing the Company's systems of controls and policies, including those covering conflicts of interest and business ethics;
- considering significant changes in accounting practices; and
- examining improprieties or suspected improprieties.

In connection with the annual general meeting of shareholders, the Company's Audit Committee examines the agenda for, and financial statements and other reports to be submitted by the board of directors at, the meeting. The Company's Audit Committee holds meetings semi-annually and additional meetings as necessary.

Currently, the Audit Committee consists of three outside directors: Seok Yun, KyuJin Cho and Sejung Choi. Seok Yun is the chairman of the committee.

Compensation Committee

The Compensation Committee is responsible for reviewing and determining the operation of its compensation program. The Compensation Committee's primary responsibilities include determining and approving the level and structure of compensation of directors, executive officers and employees as well as other matters relating to compensation including performance evaluation.

Currently, the Compensation Committee consists of three members: KyuJin Cho, Seok Yun and Beom Su Kim. KyuJin Cho is the chairman of the committee.

Nomination Committee

Under the Korean Commercial Code and the Company's articles of incorporation, the Company is required to have a Nomination Committee consisting of two or more directors, at least half of whom must be outside directors. The Nomination Committee is responsible for reviewing and recommending candidates for directors at the general meeting of shareholders.

Currently, the Nomination Committee consists of three members: Sejung Choi, KyuJin Cho and Beom Su Kim. Sejung Choi is the chairman of the committee.

COMPENSATION OF DIRECTORS AND EXECUTIVE OFFICERS

Remuneration

The aggregate remuneration paid and benefits in kind granted to the Company's key management, including the directors, was Won 1,300 million in 2017, Won 2,708 million in 2018, Won 2,850 million in 2019 and Won 3,383 million in the first six months of 2020. As of June 30, 2020, there were no loans granted by the Company to any of its directors or executive officers. The Company does not have service contracts with any of its directors or executive officers.

Stock Options

Under the Korean Commercial Code and the Company's articles of incorporation, subject to certain exceptions, the Company may, by special resolution of its shareholders, grant to its directors, officers and employees who have contributed or are expected to contribute to the Company's management, options to purchase up to an aggregate of 15% of the total number of its issued and outstanding shares.

The Company has granted both cash-settled stock options and equity-settled stock options to its directors, officers and employees, including share-based payment transactions with cash alternatives which the Company has the discretion to settle by the issuance of new Shares, distribution of treasury shares or payment of cash at the time of their exercise. As of June 30, 2020, the Company had outstanding stock options for an aggregate of 2,464,251 Shares, of which 407,751 were exercisable. For further information regarding the Company's stock options, see Note 18 of the notes to the Company's condensed consolidated interim financial statements as of June 30, 2020 and for the six-month periods ended June 30, 2020 and 2019 appearing elsewhere in this offering circular.

Interests of Directors and Executive Officers

As of June 30, 2020, there were no outstanding transactions other than in the ordinary course of business undertaken by the Company in which its directors or executive officers were interested parties.

In addition to the equity-settled stock options discussed above, certain of the Company's directors and executive officers have direct or indirect beneficial interests in the Shares. However, other than as set forth in "– Principal Shareholders," none of them holds more than 5% of the outstanding Shares. Certain of the Company's directors and executive officers have direct or beneficial interests in companies with which the Company has engaged in transactions, including those in the ordinary course of business. As a result, potential conflicts of interest between their duties to the Company and their private interests could arise.

PRINCIPAL SHAREHOLDERS

The following table sets forth information regarding beneficial ownership of the Shares as of June 30, 2020, by each person or entity known to the Company to own beneficially more than 5% of the outstanding Shares:

Shareholder	Number of Shares	Percentage
Beom Su Kim	12,503,461	14.7%
kcubeholds Co., Ltd.[(1)]	9,939,467	11.6
National Pension Service	8,688,086	10.2
MAXIMO PTE. LTD.	5,599,849	6.6
Others	48,614,361	57.0
Total	85,356,224	100.00%

(1) kcubeholds Co., Ltd. is wholly owned by Beom Su Kim.

Other than as set forth above, no other person or entity or group of persons or entities known by the Company to be acting in concert, directly or indirectly, owned 5% or more of the outstanding Shares or exercised control or could exercise control over the Company as of the date of this offering circular. The Company's major shareholders do not have different voting rights from its other shareholders.

INFORMATION RELATING TO THE SHARES

This section provides information relating to the Shares. The following discussion is subject to, and is qualified in its entirety by reference to the Company's articles of incorporation and the applicable provisions of the FSCMA and the Korean Commercial Code.

GENERAL

Under the Company's articles of incorporation, the Company's authorised share capital is 150,000,000 Shares with a par value per Share of Won 500. The Company may also issue class shares, which include shares of voting and non-voting preferred stock, redeemable preferred stock, convertible stock and hybrid securities comprising one or more elements of the foregoing types of shares. Class shares may be issued up to a maximum of 50% of the issued shares.

As of June 30, 2020, there were 87,846,158 Shares issued and 85,356,224 Shares outstanding and no class shares outstanding. All of the issued and outstanding Shares are fully-paid and non-assessable and are in registered form. The Company's articles of incorporation reflect the adoption of the electronic securities system pursuant to the Act on Electronic Registration of Stocks, Bonds, Etc. Accordingly, in lieu of issuing share certificates, the Company electronically registers its shares with the electronic registry.

The Company is registered under the laws of Korea under the commercial registry number 110111-1129497.

DIVIDENDS

The Company distributes dividends to its shareholders in proportion to the number of shares owned by each shareholder, following the approval thereof at the annual general meeting of shareholders that is generally held within three months after the end of each fiscal year. There can be no assurance that the Company will pay dividends in the future.

The Company may distribute its annual dividends in cash or in shares to shareholders or share pledgees listed on its shareholders' register as of December 31 of each year. A dividend in shares must be distributed at par value. Pursuant to the FSCMA, in the case of listed companies, if the market price of the shares is less than par value, a dividend in shares may not exceed one-half of the annual dividends. The Company may also pay interim dividends to shareholders or registered pledgees of record as of June 30 of a given fiscal year. Interim dividends, if any, must be approved by a resolution of the Company's board of directors within 45 days from June 30 of such fiscal year. The Company has no obligation to pay any annual cash dividend unclaimed for five years from the payment date, at which time rights to such dividends lapse. Unclaimed cash dividends revert to the Company.

Under the Korean Commercial Code, the Company may pay its dividends only out of the excess of its net assets, on a separate basis, over the sum of (i) its stated capital, (ii) the total amount of its capital surplus reserve and earned surplus reserve accumulated up to the end of the relevant dividend period, (iii) the earned surplus reserve required to be set aside for the annual dividend and (iv) the unrealised gain equivalent to the increased net assets on its balance sheet, based on its evaluation of assets and liabilities, that are not subject to set-off against unrealised losses. In addition, the Company may not pay any dividend unless it has set aside as a legal reserve an amount equal to at least 10% of the cash portion of the dividend or unless it has accumulated a legal reserve of not less than one-half of its stated capital. The Company may also set aside certain amounts as "other reserves" for certain purposes with the approval of shareholders at the annual general meeting of shareholders instead of distributing such amounts as dividends. The Company may not use legal reserve to pay cash dividends but may transfer amounts from legal reserve to stated capital or use legal reserve to reduce an accumulated deficit. If the total amount of the capital surplus reserve and earned surplus reserve exceeds 150% of the stated capital, the Company may convert such excess amount to retained earnings, which then may be used for dividend payments.

DISTRIBUTION OF FREE SHARES

In addition to paying dividends in shares out of its retained or current earnings, the Company may distribute to its shareholders an amount transferred from its capital surplus or legal reserve to its stated capital in the form of free shares. The Company must distribute such free shares to all of its shareholders in proportion to their existing shareholdings.

PREEMPTIVE RIGHTS AND ISSUANCE OF ADDITIONAL SHARES

The Company may issue authorised but unissued shares at the time and, unless otherwise provided in the Korean Commercial Code, on the terms its board of directors may determine. Subject to the limitation described below, all of the Company's shareholders are generally entitled to subscribe for any newly-issued shares in proportion to their existing shareholdings. The Company must offer new shares on uniform terms to all shareholders who have preemptive rights and are listed on its shareholders' register as of the relevant record date. Under the Korean Commercial Code, the Company may vary, subject to certain limitations, the terms of these preemptive rights for different classes of shares. The Company must give public notice of the preemptive rights regarding new shares and their transferability at least two weeks (excluding any time period during which the shareholders' register is closed) before the relevant record date. The Company's board of directors may determine how to distribute shares for which preemptive rights have not been exercised or forfeited or where fractions of shares occur.

Under its articles of incorporation, the Company may issue new shares pursuant to a board resolution to persons other than existing shareholders, who in these circumstances will not have preemptive rights, if the new shares are:

- issued in a general public offering in accordance with the FSCMA, provided that the total number of shares issued does not exceed 50% of its total issued and outstanding capital stock;
- issued upon the exercise of stock options in accordance with the Korean Commercial Code;
- issued upon issuance of depositary receipts;
- issued abroad to be listed on any foreign stock exchange or automated quotation system; or
- issued to specified persons (including existing shareholders) for the purpose of achieving certain management purposes, including the introduction of new technology and improvement of its financial condition.

In addition, under the FSCMA, each member of an employee stock ownership association, whether or not they are shareholders, has a preemptive right, subject to certain exceptions, to subscribe for up to 20% of any shares the Company publicly offers. This right is exercisable only so long as the total number of shares so acquired and held by the members does not exceed 20% of the total number of shares then outstanding.

In case the Company issues new shares to persons other than the existing shareholders, the Company must notify the shareholders or give public notice of the major terms of the new share issuance by no later than two weeks prior to the date of payment of the subscription price for such new shares.

GENERAL MEETING OF SHAREHOLDERS

The Company holds its annual general meeting of shareholders within three months after the end of each fiscal year. Subject to a board resolution or court approval, the Company may hold an extraordinary general meeting of shareholders as necessary.

The Company must give shareholders written or electronic notice setting out the date, place and agenda of the meeting at least two weeks before the date of the general meeting of shareholders. However, the Company may give notice to holders of no more than 1% of the total number of its issued and outstanding voting shares by posting such notice on the electronic disclosure system operated by the Korea Exchange or the Financial Supervisory Service at least two weeks in advance of the meeting or by placing at least two public notices in The Seoul Economic Daily and The Herald Business, both daily newspapers published in Seoul. Shareholders not on the shareholders' register as of the record date are not entitled to receive notice of the general meeting of shareholders or attend or vote at the meeting.

The Company's general meetings of shareholders are held at its principal office or at a place adjacent to the principal office.

VOTING RIGHTS

Holders of the Company's voting shares are entitled to one vote for each voting share, except that voting rights of voting shares held by the Company, or by a corporate shareholder for which more than 10% of the outstanding shares of capital stock is directly or indirectly owned by the Company and/or its subsidiaries, individually or in the aggregate, may not be exercised.

In the case of listed companies, for the purpose of electing or dismissing a statutory auditor or a member of the Audit Committee who is not an independent director, if the number of shares with voting rights held by any of the following shareholders exceeds, in the aggregate, 3% of the total number of the Company's shares with voting rights, then such shareholder may not exercise its voting rights with respect to the shares held in excess of the 3%:

- the largest shareholder;
- a shareholder specially related to the largest shareholder;
- any shareholder who holds the Company's common shares for the account of the largest shareholder or a person specially related to the largest shareholder; or
- any shareholder who appoints the largest shareholder or a person specially related to the largest shareholder as a proxy for the exercise of voting rights.

In addition, in the case of listed companies with total assets of Won 2 trillion or more as of the end of the latest fiscal year, if the aggregate number of shares with voting rights held by any shareholder exceeds 3% of the total number of issued and outstanding shares with voting rights, then such shareholder may not exercise its voting rights with respect to the shares it holds in excess of such 3% threshold for the purpose of electing a member of the Audit Committee who is an independent director. While the articles of incorporation of a company may prescribe a threshold shareholding percentage that is lower than 3%, the Company's articles of incorporation do not provide for a lower threshold shareholding percentage.

The Korean Commercial Code permits cumulative voting, under which each shareholder would have multiple voting rights corresponding to the number of directors to be appointed at the general meeting of shareholders and may exercise all voting rights cumulatively to elect one director. However, the Company's shareholders have decided not to adopt cumulative voting.

The Company's shareholders may adopt a resolution at a general meeting by an affirmative majority vote of the voting shares present or represented at the meeting, where the affirmative votes also represent at least one-fourth of its total voting shares then issued and outstanding. However, under the Korean Commercial Code, the following matters, among others, require approval by the holders of at least two-thirds of the voting shares present or represented at a meeting, where the affirmative votes also represent at least one-third of the Company's total voting shares then issued and outstanding:

- amending the Company's articles of incorporation;
- removing a director;
- effecting any dissolution, merger or consolidation;
- transferring the whole or any significant part of the Company's business;
- effecting its acquisition of the whole or part of the business of another company that may have a material effect on the Company's business;
- issuing any new Shares at a price lower than their par value; or
- reducing capital.

Shareholders may exercise their voting rights by proxy.

RIGHTS OF DISSENTING SHAREHOLDERS

In some limited circumstances, including the transfer of the whole or any significant part of the Company's business and the Company's merger or consolidation with another company, dissenting shareholders may have the right to require the Company to purchase their Shares. In order for a dissenting shareholder to be entitled to such right, the Shares must have been acquired before the relevant resolution of the board of directors was disclosed to the public or the legal action resulting in the acquisition of the Shares must have been taken no later than the date immediately following the date on which the resolution was disclosed. To exercise this right, shareholders must submit to the Company a written notice of their intention to dissent before the general meeting of shareholders. Within 20 days after the relevant resolution is passed at a meeting, the dissenting shareholders must request the Company in writing to purchase their Shares. The Company is obligated to purchase the Shares of dissenting shareholders within one month after the expiration of the 20-day period.

The purchase price for the Shares is required to be determined through negotiation between the dissenting shareholders and the Company. Under the FSCMA, if a listed company cannot agree on a price through negotiation with the dissenting shareholders, the purchase price will be the average of (1) the weighted average of the daily common share price on the Korea Exchange for the two-month period before the date of the adoption of the relevant board resolution, (2) the weighted average of the daily common share price on the Korea Exchange for the one-month period before the date of the adoption of the relevant resolution, and (3) the weighted average of the daily common share price on the Korea Exchange for the one-week period before the date of the adoption of the relevant resolution. However, if either the company or the relevant shareholder objects to the purchase price calculated using the method above, then the objecting party may ask the court to determine the purchase price.

REGISTER OF SHAREHOLDERS AND RECORD DATES

The Company's transfer agent, Kookmin Bank, maintains the register of the Company's shareholders at its office at 26, Gukjegeumyung-ro 8-gil, Yeongdeungpo-gu, Seoul, Korea. It registers transfers of the Shares on the register of shareholders on presentation of the share certificates.

The record date for annual dividends is December 31. For the purpose of determining the shareholders or the Share pledgees entitled to the rights pertaining to the Shares for an extraordinary shareholders' meeting or other necessary circumstances, the Company may, on at least two weeks' public notice and upon a board's resolution, set a record date or close the register of shareholders for not more than three months. The trading of Shares and the delivery of Share certificates may continue while the register of shareholders is closed.

ANNUAL REPORT

At least one week before its annual general meeting of shareholders, the Company must make its annual report and audited financial statements available for inspection at its principal office and at all of its branch offices. In addition, copies of annual reports, the audited financial statements and any resolutions adopted at the general meeting of shareholders will be available to the Company's shareholders.

The Company must file with the Financial Services Commission and the Korea Exchange (1) an annual business report within 90 calendar days after the end of its fiscal year and (2) interim reports with respect to the three month period, six month period and nine month period from the beginning of each fiscal year within 45 calendar days following the end of each period under the FSCMA. Copies of these reports are or will be available for public inspection at the Financial Services Commission and the Korea Exchange.

TRANSFER OF SHARES

Under the Korean Commercial Code, the transfer of common shares is effected by delivery of share certificates. However, to assert shareholders' rights against the Company, the transferee must have his name and address registered on the Company's shareholders' register. For this purpose, a shareholder is required to file his name, address and seal or specimen signature with the Company's transfer agent. In addition, a non-resident shareholder must appoint an agent authorised to receive notice on his behalf in Korea and file a mailing address in Korea.

Under current Korean regulations, Korean brokers, dealers and collective investment managers ("financial investment firms") and foreign exchange banks in Korea (including licensed branches of non-Korean financial investment firms and banks), internationally recognised foreign custodians and the Korea Securities Depository may act as agents and provide related services for foreign shareholders. Certain foreign exchange controls and securities regulations apply to the transfer of common shares by non-residents of Korea or non-Koreans. See "Korean Foreign Exchange and Securities Regulations."

LIQUIDATION RIGHTS

In the event of the Company's liquidation, after payment of all debts, liquidation expenses and taxes, the Company's remaining assets will be distributed among shareholders in proportion to their shareholdings.

Market Price Information for the Shares

The Shares were listed on the KRX KOSPI Market of the Korea Exchange on July 10, 2017. Prior to such date, the Shares were listed on the KRX KOSDAQ Market of the Korea Exchange. The following table sets forth the high and low closing prices and the average daily volume of trading activity on the KRX KOSPI Market or the KRX KOSDAQ Market, as applicable, for the Shares for the periods indicated.

Period	Closing Price		Average Daily Trading Volume
	High	Low	
	(In Won)		*(Number of Shares)*
2015	120,800	100,400	622,357
2016	119,800	71,300	313,287
2017	161,000	76,100	709,933
2018	159,500	87,600	551,083

Period	Closing Price		Average Daily Trading Volume
	High	Low	
	(In Won)		*(Number of Shares)*
2019	157,500	95,600	475,205
First Quarter	108,500	95,600	399,277
January	103,500	98,500	329,835
February	105,000	95,600	531,184
March	108,500	102,000	363,541
Second Quarter	134,000	100,500	627,421
April	120,000	100,500	437,422
May	134,000	121,500	970,704
June	131,500	119,500	468,001
Third Quarter	138,500	122,000	437,439
July	136,000	126,000	476,744
August	134,500	122,000	438,293
September	138,500	132,000	388,915
Fourth Quarter	157,500	130,500	433,617
October	141,500	130,500	412,008
November	157,500	145,500	485,121
December	157,000	146,500	402,228
2020 (through October 20)	412,000	134,000	1,033,965
First Quarter	190,500	134,000	745,822
January	171,500	152,500	451,415
February	190,500	159,500	668,275
March	179,500	134,000	1,083,962
Second Quarter	282,500	150,500	1,267,973
April	185,500	150,500	829,825
May	270,000	186,500	1,737,242
June	282,500	249,500	1,261,012
Third Quarter	412,000	269,500	1,183,984
July	355,500	269,500	1,347,329
August	410,500	352,500	1,405,580
September	412,000	351,500	794,037
Fourth Quarter (through October 20)	381,500	352,500	487,528
October (through October 20)	381,500	352,500	487,528

Source: The Korea Exchange

The trading price and the daily closing price of the Shares are available on the Korea Exchange's website at http://eng.krx.co.kr. For the avoidance of doubt, none of the information contained on the Korea Exchange's website is incorporated by reference into this offering circular and should not be considered a part of this offering circular.

Dividends

The following table sets forth dividends declared and paid on the outstanding Shares to the Company's shareholders of record in respect of the periods indicated, as well as the number of outstanding Shares entitled to such dividends. The dividends set forth for each of the years below were paid in the immediately following year.

As of and for the Year Ended December 31,	Number of outstanding Shares	Dividends per Share	Total amount of dividends declared and paid in the following year
		(in Won)	*(in millions of Won)*
2017	67,903,339	₩148	₩10,050
2018	79,154,281	₩127	₩10,053
2019	81,989,144	₩127	₩10,413

The Company's dividend policy is to declare annual dividends, if any, in amounts that take into consideration various factors, including its profitability and financial condition, as well as legal requirements for such declaration. Annual dividends, if any, on the Shares are recommended by its board of directors and must be approved at the annual general meeting of shareholders. This meeting is generally held within three months after December 31, and the annual dividend is generally paid shortly thereafter to the shareholders or registered pledgees of record as of the end of the preceding fiscal year. The Company may distribute annual dividends in cash or in Shares.

The Company may also pay interim dividends to shareholders or registered pledgees of record as of June 30 of a given fiscal year. Interim dividends, if any, must be approved by a resolution of its board of directors within 45 days from June 30 of such fiscal year. The Company has not declared any interim dividends to date.

REGULATION OF THE COMPANY

As a general matter, the Company and its Korean subsidiaries are subject to rules and regulations applicable to corporations established under the Korean Commercial Code. The Company's business operations are also regulated by a number of other Korean laws and regulations, including in particular those described below. In addition to the foregoing, the Company may be subject to government regulations of other jurisdictions where it undertakes business activities.

Regulations Relating to Online Services in General

Under the Telecommunications Business Act (the "TBA"), telecommunications services are divided into two categories: telecommunications services such as telephone and online connection (including the business of leasing telecommunications line facilities) and additional communications services. The online services and the online content services the Company provides are classified as additional communications services under the TBA, and the Company is registered as an additional communications services business operator.

Additional communications services offered by the Company are recognised as an online service provider's additional communications services for the purpose of transmitting of intellectual properties among different individuals, and are subject to the Copyright Act. Under the Copyright Act, if requested by the proprietor of the relevant intellectual property, the Company must take necessary measures including technical measures to block any illegal transmission of the relevant intellectual property. In addition, a telecommunications business operator is a provider of information and communications services under the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc., and the Company is obligated to protect users' personal information in accordance with such Act.

Regulations Relating to Online News Services

In order to electronically publish online newspapers or offer online news services, the Company is required to be registered under the Act on Promotion of Newspapers, Etc. and it has completed its registration in connection with its offering of online news services. As an online news service operator, the Company is required to distinguish between the news it publishes and the news for which it acts solely as an intermediary. If any of the news for which the Company acts solely as an intermediary is retransmitted to it by the original publisher due to changes in the title, content or other circumstances, the Company is required to immediately update the news using the retransmitted versions.

Regulations Relating to Location Information Business

In relation to online mapping and location-based services, the Company offers services for collecting and providing location information, and location-based services using location information collected, which are subject to the Act on Protection and Utilization of Location Information (the "PULI Act"). The PULI Act is a special act enacted for the purpose of protecting sensitive personal location information. Under the PULI Act, a location-based service provider is required to make a filing with the Korea Communications Commission if, among other things, any of the following occurs: (i) any change in the name of the business entity, the address and the location of the information system, (ii) any change in standardised contractual terms and conditions for the services, (iii) suspension or closing of the business, or (iv) merger or acquisition of the business. Further, under the PULI Act, the Company is required to obtain consent from the proprietor of the relevant personal location information when utilising or providing the personal location information, and if the Company wishes to provide such personal location information to a third party designated by the proprietor of the respective personal location information, it must immediately notify the proprietor. The Company is prohibited from utilising or providing personal location information beyond the scope set out in or as agreed to by the proprietor in the standardised contractual terms and conditions for the applicable services. The Company must immediately delete all relevant information including personal location information once it has fulfilled the purpose for which it collected such information.

Regulations Relating to Online Advertising Services

The Company is subject to the Act on Fair Labeling and Advertising in respect of its online advertising services. The Fair Trade Commission of Korea may issue a public notice pertaining to matters necessary to protect consumers and maintain fair transactions, requiring business operators to disclose such items in their advertisements ("Material Information") which (i) frequently have harmful effects on consumers if absent from the relevant advertisement or (ii) may affect consumers' decisions on the purchasing of goods or have harmful or dangerous effects on the life, body or personal property of the consumer if not properly forewarned. If any of the above are applicable, a business operator is required to include such Material Information in its advertisements.

Regulations Relating to Mobile Game Services

Among other applicable laws, the Game Industry Promotion Act (the "GIPA") and the Juvenile Protection Act (the "JPA") regulate mobile game businesses. Game production and distribution businesses are regulated under an advance registration scheme. The GIPA requires that a person who intends to engage in the game production or distribution business register with the relevant government authority. An amendment of important business matters must be registered as well. The Company is a registered game developer and a registered game distributor under the GIPA. The GIPA requires game companies to take certain measures to prevent gamers' excessive preoccupation with and addiction to games.

The JPA requires online game companies to restrict those under the age of 16 from accessing their online game websites between midnight and 6:00 a.m. (known as the "shutdown" system). In addition, the JPA requires that juveniles under the age of 16 obtain parental/guardian consent before purchasing an online game subscription. The JPA also requires game companies to publish basic information including the nature, rating, and fee-charging policy of the game offered, hours of permissible game use and payment information.

Regulations Relating to Mobile Content and Mobile Commerce Businesses

Among other applicable laws, the Act on Consumer Protection in Electronic Commerce, Etc. and the Electronic Financial Transactions Act apply in connection with electronic financial businesses such as the mobile commerce and mobile content businesses.

Under the Act on Consumer Protection in Electronic Commerce, Etc., a business entity considering providing information on the sale of goods or services by means of mail, electronic communication or similar means and selling such goods or services (with an exception for solicitation by phone which is governed by the Act on Door-to-Door Sales, Etc.) is required to file for registration of a mail order distributorship with any of the Fair Trade Commission of Korea, a relevant provincial governor, a mayor, a municipal governor (*gunsu*) or a head of a borough (*gucheongjang*), as applicable. The Company has completed the relevant mail order distributorship registration.

In connection with (a) the issuance and management of an electronic prepayment means (i.e., any certificate, or information on such certificate, of transferable monetary values stored and issued in electronic form, which meets all requirements of the following items: (i) to be used to purchase goods or services from a third party and pay the prices thereof and (ii) to be used to purchase goods or services included in not less than two business categories), and (b) electronic payment settlement agency service (i.e., any service rendered to transmit or receive payment settlement information in connection with the purchasing of goods or using services in an electronic form or to undertake duties as an agent or mediate the settlement of prices thereof), the Company is registered with the FSC in accordance with the Electronic Financial Transactions Act (the "EFTA") and is subject to such Act.

The FSS monitors electronic financial business operators' compliance with the EFTA or the administrative orders issued pursuant to the EFTA. If the FSS believes that an electronic financial business operator will likely violate the EFTA or the aforementioned administrative orders, the FSS may take any one of the following measures: an order for the remedying of the violation, a warning, a warning to an executive and/or an employee, an order for the reprimanding of an executive and/or an employee or a request for removal of an executive or suspension of duty.

Regulations Governing Music Related Businesses

Among other applicable laws, online music services and related businesses are governed by the Copyright Act and the Music Industry Promotion Act, which were enacted to promote music related businesses and to protect the rights of the music writers.

The Copyright Act enforces the Korea-EU and Korea-U.S. free trade agreements in Korea through: (i) increasing the protection of a music writer's property rights to 70 years (previously 50 years) after the death of the music writer; (ii) increasing the protection of neighboring rights (pertaining to musical performance and music recordings) to 70 years (previously 50 years) effective from August 1, 2013, while any neighboring rights acquired during the period between July 1, 1987 and June 30, 1994 will be protected for 50 years; and (iii) the introduction of a legal remedy for the claim of damages. Such amendments are anticipated to enhance the protection of music-related copyrights in Korea and to further contribute to the growth of the online music service industry in general.

The Music Industry Promotion Act was enacted in 2006 to replace the previously repealed Act on Music Record/Video and Game Materials. The Act provides a legal framework and guidelines for digital music sources and development of relevant technology, and generally encompasses protection of copyrights, promotion of the music industry, online music streaming and musical performances, among other things.

The royalties for digital music copyrights payable to music distributors and copyright holders are governed by the royalty collection regulations (the "Royalty Regulation") approved by the Ministry of Culture, Sports and Tourism. The Royalty Regulation was amended in February 2016 to promote the copyright holders' rights, and in particular, raise the profit distribution ratio for copyright holders, prohibit unreasonable discounts and raise applicable royalty rates. As a result, all online music service providers in Korea recently raised their subscription fees to accommodate such changes in the Royalty Regulation.

Since the purpose of the Royalty Regulation is to protect the copyright holders' rights, the Royalty Regulation may be amended again from time to time based on discussions among interested parties and the approval of the Ministry of Culture, Sports and Tourism.

Regulation Governing Mobility (Transportation) Related Businesses

With the recent trend in Korea where an increasing number of companies provide transport services using online or mobile platforms, the Passenger Transport Service Act has been amended to establish new frameworks on the "transport platform business" and the amended law will come into effect starting from April 2021. The amendment classifies the transport platform business largely into three types: (1) platform transport business, (2) platform transport franchise business and (3) platform transport intermediary business. First, platform transport business is a type of business in which the operator secures a transport platform and cars (including rental cars) and provides passenger transport and other additional services at a certain cost. Running this type of business requires an approval from the Minister of Land, Infrastructure and Transport, and the allowed number of cars is limited. In addition, business operators are obligated to pay contributions and report their fares or charges. Second, platform transport franchise business is a type of business in which the operator secures a transport platform and requests franchisees to provide the passenger transport service via such platform. An example of this type of business is a franchised taxi business. This type of business requires a license granted by mayors, provincial governors or the Minister of Land, Infrastructure and Transport, and the minimum number of cars required to acquire the license in Seoul has been recently sharply decreased. Third, platform transport intermediary business is a business that connects passenger transport service providers with passengers through a transport platform. An example is an intermediary service based on mobile applications. To provide such services, business operators must register their businesses with the Ministry of Land, Infrastructure and Transport and are obligated to report the usage fees of their transport platforms to the Minister of Land, Infrastructure and Transport.

In addition, the current Passenger Transport Act prohibits paid carpooling services except during commuting hours (defined as 7:00 to 9:00 a.m. and 18:00 to 20:00 p.m. on weekdays). However, as the Act on the Promotion and Support of Commercialization of Self-Driving Car Services came into effect as of May 1, 2020, within the pilot districts designated by the Minister of Land, Infrastructure and Transport, paid transport (carpooling) services using privately-owned autonomous cars became available to a limited degree, for which many transport business operators are closely monitoring related developments and additional relaxation of regulation.

Regulations Relating to Protection of Personal Information

The Company is subject to the Act on Use and Protection of Credit Information, which regulates companies utilising databases of personal credit information for its business. The Company is also subject to the Personal Information Protection Act, which regulates the collection, utilisation and provision of personal information, and the procedure for obtaining consents on handling personal information.

In the course of its business, the Company acquires a large amount of personal and financial information related to its users. In addition, certain third-party vendors may provide services to the Issuer using personal and financial information of their customers. As required by the above-described laws, the Company takes precautionary measures, including the implementation of internal compliance procedures, to prevent and detect misuse or unauthorised disclosure of users' personal information.

Regulations under the Monopoly Regulation and Fair Trade Act

The Company is part of the Kakao Group and thus is subject to certain restrictions, including the following, under the Monopoly Regulation and Fair Trade Act:

- **Restrictions on debt guarantees among affiliates.** Any affiliate within the Kakao Group may not guarantee the debt of another domestic affiliate to domestic financial institutions, except for certain guarantees prescribed in the Monopoly Regulation and Fair Trade Act, such as, among others, those relating to the debt of a company acquired for purposes of industrial rationalisation, bid deposits for overseas construction work and technology development funds.

- **Restrictions on cross-shareholding.** A member company of the Kakao Group may not newly acquire or hold shares in an affiliate belonging to the Kakao Group that owns shares in such member company except for certain cases prescribed by the Monopoly Regulation and Fair Trade Act, such as the acquisition of shares in the context of a merger of companies or a transfer of business and exercise of security interests. Existing cross-shareholdings are required to be publicly disclosed.

- **Public notice of board resolutions on large-scale transactions with specially-related persons.** If a member of the Kakao Group engages in certain transactions with a specially-related person in the amount of (i) 5% or more of its total capital and paid-in capital, whichever is greater, or (ii) Won 5 billion or more, the transaction must be approved by a resolution of such member's board of directors in advance, and such member must publicly disclose the transaction.

In August 2013, the Monopoly Regulation and Fair Trade Act was amended to strengthen restrictions on transactions between certain affiliated group entities, which amendments became effective in February 2014 (and further amended in April 2017). In particular, the amendments explicitly provide that a company belonging to a business group subject to disclosure (as defined in the Monopoly Regulation and Fair Trade Act) is restricted from providing profits to its specially-related persons (including the de facto controlling person of such company or his or her respective relatives (as defined in the Korean Civil Code)) by, among other things, engaging in the following transactions with its specially-related persons or affiliated companies in which such specially-related person has an ownership interest of, in the case of listed companies, 30% or more or, in the case of non-listed companies, 20% or more:

- transactions with terms that are significantly more favourable than terms of transactions with non-affiliates;

- the company passes to such specially-related persons or affiliated companies its business opportunities that would bring substantial profits or other benefits to the company if such transactions were entered into by the company itself or another company under such company's control;

- transactions with specially-related persons in cash or involving financial instruments under terms that are significantly more favourable than arms' length terms; or

- transactions of a substantial scale with certain specially-related persons or affiliated companies, unless the company underwent an appropriate arms' length selection process of choosing its counterparty, such as the assessment of business capacity, financial status, credit ratings and quality of products or services of the counterparty as well as the terms and conditions of the transaction. Such restriction does not apply if (i) the aggregate transaction amount for goods and services between the relevant parties in that year neither exceeds Won 20 billion nor 12% of the average revenue of the counterparty or (ii) such affiliated transactions are inevitable in order to achieve certain specific purposes, such as efficiency, security or urgency for the company.

Violation of the above restrictions may subject the company to a corrective order or a fine imposed by the Fair Trade Commission up to 5% of such company's average revenue during the immediately preceding three fiscal years or, in certain cases (including where the company has no revenue), up to Won 2 billion.

KOREAN FOREIGN EXCHANGE AND SECURITIES REGULATIONS

GENERAL

The Foreign Exchange Transactions Act of Korea and the Presidential Decree and regulations under that Act and Decree, which are referred to collectively as the Foreign Exchange Transaction Laws, regulate investments in Korean securities by non-residents and issuances of securities outside Korea by Korean companies. Non-residents may invest in Korean securities pursuant to the Foreign Exchange Transaction Laws. The FSC has also adopted, pursuant to its authority under the FSCMA, regulations that regulate investments by foreigners in Korean securities and issuances of securities outside Korea by Korean companies.

Subject to certain limitations, the Ministry of Economy and Finance has the authority to take the following actions under the Foreign Exchange Transaction Laws, for a period of up to six months, or longer under extraordinary circumstances:

- if the Government deems it necessary on account of war, armed conflict, natural disaster or grave and sudden and significant changes in domestic or foreign economic circumstances or similar events or circumstances, the Ministry of Economy and Finance may (i) temporarily suspend payment, receipt or performance under any or all foreign exchange transactions, in whole or in part, to which the Foreign Exchange Transaction Laws apply (including suspension of payment and receipt of foreign exchange), (ii) impose an obligation to deposit, safe-keep or sell precious metal or any means of payment to The Bank of Korea, a foreign exchange equalisation fund or certain other governmental agencies or financial companies, or (iii) require resident creditors to collect and recover debts owed by non-resident debtors and to send such amounts to the creditors' accounts in Korea; and

- if the Government concludes that the international balance of payments and international financial markets are experiencing or are likely to experience significant disruption or that the movement of capital between Korea and other countries is likely to adversely affect its currency policies, exchange rate policies or other macroeconomic policies, the Ministry of Economy and Finance may take action to require any person who intends to effect a capital transaction to obtain permission or to require any person who effects a capital transaction to deposit a portion of the means of payment acquired in such transaction with The Bank of Korea, a foreign exchange equalisation fund or certain other governmental agencies or financial companies.

Such authority of the Ministry of Economy and Finance would not, however, be applicable to foreign investments made pursuant to the Foreign Investment Promotion Act of Korea.

REPORTING REQUIREMENTS FOR HOLDERS OF SUBSTANTIAL INTERESTS

Under the FSCMA, any person whose direct or beneficial ownership of a listed company's shares with voting rights, equity-related debt securities, including convertible bonds, bonds with warrants, exchangeable bonds, certificates representing the rights to subscribe for common shares, derivatives-linked securities and depositary receipts for the aforementioned securities, which are referred to collectively as equity securities, together with the equity securities directly or beneficially owned by certain related persons or by any person acting in concert with the person, accounts for 5% or more of the total outstanding equity securities (including treasury shares) of such listed company is required to report the status and purpose (in terms of whether the purpose of the shareholding is to participate in the management of the issuer) of the holdings, the major terms and conditions of the agreements relating to the equity securities and other matters prescribed by the Presidential Decree under the FSCMA to the FSC and the Korea Exchange within five business days after reaching the 5% ownership interest.

In addition, (A) any change in the number of the owned equity securities that is 1% or more of the total outstanding equity securities subsequent to the report or (B) any change in (i) the purpose of the shareholding or ownership of the equity securities, (ii) the major terms and conditions of the agreements relating to the equity securities owned (such as trust agreements and collateral agreements) to the extent the number of relevant equity securities is 1% or more of the total outstanding equity securities or (iii) the type of the ownership (direct ownership or holdings) to the extent the number of relevant equity securities is equal to or exceeds 1% of the total outstanding equity securities, subsequent to the report, must be reported to the FSC and the Korea Exchange, provided that clauses (B)(ii) and (B)(iii) are only applicable to shareholders whose investment purpose is to participate in the management of the company. Changes set forth in clauses (A) and (B) above must be reported within five business days from the date of such change (or by the tenth day of the month following the month in which the change described in (A) above occurs, in the case of a person (other than certain professional investors prescribed by the Presidential Decree under the FSCMA) with no intent to seek management control).

Notwithstanding the foregoing, certain professional investors prescribed by the Presidential Decree of the FSCMA may report the 5% ownership status and the changes described in (A) above to the FSC and the Korea Exchange by the tenth day of the month immediately following the end of the quarter in which such 5% ownership interest is reached or the change occurs.

When filing a report to the FSC and the Korea Exchange in accordance with the reporting requirements described above, a copy of such report must also be sent to the relevant listed company.

Violation of these reporting requirements may subject a person to sanctions, such as prohibition on the exercise of voting rights with respect to the equity securities for which the reporting requirement was violated, or fines and/or imprisonment. Furthermore, the FSC may order the disposal of the equity securities for which the reporting requirement was violated or may impose a monetary penalty.

A person reporting to the FSC and the Korea Exchange that its purpose of holding the equity securities is to participate in the management of the listed company is prohibited from acquiring additional equity securities of the listed company and exercising voting rights, during the period commencing from the date on which the event triggering the reporting requirement occurs and ending on the fifth day from the date on which the report is made.

In addition to the reporting requirements described above, any person whose direct or beneficial ownership of the Company's voting stock and/or depositary receipts for the Company's voting stock accounts for 10% or more of the total issued and outstanding voting stock, who is referred to as a major shareholder, must file a report to the Securities and Futures Commission of Korea and to the Korea Exchange within five business days after the date on which the person reached such shareholding percentage. In addition, such person must file a report to the Securities and Futures Commission of Korea and to the Korea Exchange regarding any subsequent change in its shareholding. Such report on subsequent change in shareholding must be filed within five business days of the occurrence of any such change. Violation of these reporting requirements may subject a person to criminal sanctions such as fines and/or imprisonment.

RESTRICTIONS APPLICABLE TO COMMON SHARES

As a result of amendments to the Foreign Exchange Transaction Laws and FSC regulations adopted in connection with the stock market opening from January 1992, which are referred to collectively as the Investment Rules, foreigners may invest, with limited exceptions and subject to certain procedural requirements, in shares of all Korean companies listed on the KRX KOSPI Market or the KRX KOSDAQ Market unless prohibited by specific laws. Foreign investors may trade shares listed on the KRX KOSPI Market or the KRX KOSDAQ Market only through the KRX KOSPI Market or the KRX KOSDAQ Market, except in limited circumstances, including, among others, the following:

- odd lot trading of shares;

- acquisition of shares, which are referred to as converted shares, by exercise of warrants, conversion rights or exchange rights under bonds with warrants, convertible bonds or exchangeable bonds, or withdrawal rights under depositary receipts issued outside of Korea by a Korean company;

- acquisition of shares as a result of inheritance, donation, bequest or exercise of shareholders' rights, including preemptive rights or rights to participate in free distributions and receive dividends;

- over-the-counter transactions between foreigners of shares of a public service corporation for which the upper limit on aggregate ownership by foreigners as explained below, has been reached or exceeded;

- shares acquired by way of foreign direct investment and/or the disposal of such shares by the investor;

- disposal of shares pursuant to the exercise of appraisal rights of dissenting shareholders;

- acquisition or disposal of shares in connection with a tender offer;

- acquisition of underlying shares by a foreign depositary in connection with the issuance of depositary receipts;

- acquisition and disposal of shares through overseas stock exchange market if such shares are simultaneously listed on the KRX KOSPI Market or the KRX KOSDAQ Market and such overseas stock exchange; and

- arm's-length transactions between foreigners, if all of such foreigners belong to the investment group managed by the same person.

For over-the-counter transactions of shares of a public service corporation between foreigners outside the KRX KOSPI Market or the KRX KOSDAQ Market for shares with respect to which the limit on aggregate foreign ownership has been reached or exceeded, an investment broker licensed in Korea must act as an intermediary. Odd-lot trading of shares outside the KRX KOSPI Market or the KRX KOSDAQ Market must involve an investment dealer licensed in Korea as the other party. Foreign investors are prohibited from engaging in margin transactions by borrowing shares from investment brokers or investment dealers with respect to shares that are subject to a foreign ownership limit.

The Investment Rules require a foreign investor who wishes to invest in or dispose of shares on the KRX KOSPI Market or the KRX KOSDAQ Market (including shares being issued or sold for initial listing on the KRX KOSPI Market or the KRX KOSDAQ Market) to register its identity with the FSS prior to making any such investment or disposal unless it has previously registered. However, the registration requirement does not apply to foreign investors who (i) acquire converted shares by exercising rights attached to securities offered by Korean companies outside Korea (including upon exercise of rights attached to convertible bonds, bonds with warrants, exchangeable bonds, depositary receipts, distribution depository securities and any other similar securities) with the intention of selling such converted shares within three months from the date of acquisition of the converted shares or (ii) acquire or dispose of shares outside the KRX KOSPI Market or the KRX KOSDAQ Market in connection with a foreign direct investment under the Foreign Investment Promotion Act of Korea. Upon registration, the FSS will issue to the foreign investor an investment registration certificate which must be presented each time the foreign investor opens a dealing account or a brokerage account with an investment dealer or an investment broker licensed in Korea. Foreigners eligible to obtain an investment registration certificate include foreign nationals who have not been residing in Korea for a consecutive period of six months or more, foreign governments, foreign municipal authorities, foreign public institutions, international financial institutions or similar international organisations, corporations incorporated under foreign laws and any person in any additional category designated by a decree promulgated under the FSCMA. The offices of a foreign corporation in Korea are not subject to investment registration and are treated as a Korean national separately from the offices of the corporation outside Korea for the purpose of investment registration. A foreign corporation or depositary issuing depositary receipts may obtain one or more investment registration certificates in its name in certain circumstances as described in the relevant regulations.

Upon a purchase of shares through the KRX KOSPI Market or the KRX KOSDAQ Market by a foreign investor with a designated investment account at a foreign exchange bank in accordance with the Presidential Decree of the FSCMA and Investment Rules, no separate report by the investor is required because the investment registration certificate system is designed to control and oversee foreign investment through a computer system. However, a foreign investor's acquisition or sale of shares outside the KRX KOSPI Market or the KRX KOSDAQ Market (as discussed above) must be reported by the foreign investor or his standing proxy to the Governor of the FSS at the time of each such acquisition or sale; provided, however, that a foreign investor must ensure that any acquisition or sale by it of shares outside the KRX KOSPI Market or the KRX KOSDAQ Market in the case of trades in connection with a tender offer, odd-lot trading of shares, trades of shares of a public service corporation for which the aggregate foreign ownership limit has been reached or exceeded or any other case set forth in the Investment Rules, is reported to the Governor of the FSS by the investment dealer or investment broker engaged to facilitate such transaction.

A foreign investor may appoint a standing proxy from among the Korea Securities Depository, foreign exchange banks (including domestic branches of foreign banks), investment dealers, investment brokers and collective investment companies ("financial investment firms") (including domestic branches of foreign financial investment firms) and internationally recognised custodians which will act as a standing proxy to exercise shareholders' rights or perform any matters related to the foregoing activities if the foreign investor does not perform these activities itself. Generally, a foreign investor may not permit any person, other than its standing proxy, to exercise rights relating to its shares or perform any tasks related thereto on its behalf. However, a foreign investor may be exempted from complying with these standing proxy rules with the approval of the Governor of the FSS in cases deemed inevitable by reason of conflict between the laws of Korea and those of the home country of the foreign investor.

Shares of a Korean company owned by a foreign investor must be kept in custody with an eligible custodian in Korea. Only foreign exchange banks (including domestic branches of foreign banks), financial investment firms (including domestic branches of foreign financial investment firms), the Korea Securities Depository and internationally recognised custodians are eligible to act as a custodian of shares for a foreign investor. The custodian of a foreign investor must register such foreign investor's shares with the Korea Securities Depository.

Under the Investment Rules, with certain exceptions, foreign investors may own shares of a Korean company without being subject to any foreign investment ceiling. As one such exception, no person may hold for its own account shares issued by a designated public service corporation in excess of certain ceilings, regardless of the legal ownership of such shares. However, as of the date of this offering circular, the Company is not such a designated public service corporation.

Furthermore, in the case of investments amounting to Won 100 million or more, (i) an investment by a foreign investor in 10% or more of the outstanding shares with voting rights of a Korean company or (ii) an acquisition of the right by a foreign investor holding shares of a Korean company to second or appoint directors or officers of such company constitutes a foreign direct investment for purposes of the Foreign Investment Promotion Act of Korea. Generally, under the Foreign Investment Promotion Act of Korea, a foreign direct investment must be reported to a foreign exchange bank or Korea Trade-Investment Promotion Agency designated by the Ministry of Trade, Industry and Energy prior to such investment (within 60 days after the date of such investment, if the investment is made by acquiring outstanding shares of a Korean company listed on the Korea Exchange). The acquisition of shares of a Korean company by a foreign investor may also be subject to certain foreign or other shareholding restrictions in the event that the restrictions are prescribed in a specific law that regulates the business of the Korean company. Changes in ownership of shares of a Korean company by a foreign direct investor, as well as changes in certain aspects of the foreign direct investment (including change in the foreign direct investor's name, address or business), are subject to reporting requirements.

Under the Foreign Exchange Transaction Laws, a foreign investor who wishes to trade shares without obtaining separate governmental approvals or submitting separate reports to the Government must designate a foreign exchange bank and open a foreign currency account and a Korean Won account with the bank exclusively for stock investments. No approval is required for remittance of foreign currency funds into Korea or for deposit of foreign currency funds in the foreign currency account. Foreign currency funds may be transferred from the foreign currency account to a Korean Won account opened with an investment dealer or an investment broker at the time the foreign investor is required to place a deposit for, or settle the purchase price of, a stock purchase transaction to an investment dealer or investment broker's Won account. Funds in the foreign currency account may be remitted abroad without any governmental approval.

Dividends on shares of Korean companies are paid in Korean Won. No governmental approval is required for foreign investors to receive dividends on, or the Korean Won proceeds of the sale of, any shares to be paid, received and retained in Korea. Dividends paid on, and the Korean Won proceeds of the sale of, any shares held by a non-resident of Korea may be deposited either in a Korean Won account with the investor's investment dealer or investment broker or its Korean Won account with the foreign exchange bank. Funds in the investor's Korean Won account may be transferred to its foreign currency account or withdrawn for local living expenses, provided that any withdrawal of local living expenses in excess of a certain amount must be reported to the Governor of the FSS by the foreign exchange bank at which the Korean Won account is maintained. Funds in the Korean Won account in Korea may also be used for future investment in shares or for payment of the subscription price of new shares acquired through the exercise of preemptive rights.

Investment dealers and investment brokers are allowed to open foreign currency accounts with foreign exchange banks exclusively for accommodating foreign investors' stock investments in Korea. Through these accounts, investment dealers and investment brokers may enter into foreign exchange transactions on a limited basis, such as conversion of foreign currency funds and Korean Won funds, either as a counterparty to or on behalf of foreign investors, without the investors having to open their own accounts with foreign exchange banks.

THE KOREA EXCHANGE

On January 27, 2005, the Korea Exchange was established pursuant to the Korea Securities and Futures Exchange Act by consolidating the Korea Stock Exchange, the Korea Futures Exchange, the KOSDAQ Stock Market, Inc., or the KOSDAQ, and the KOSDAQ Committee of the Korea Securities Dealers Association, which had formerly managed the KOSDAQ. On July 1, 2013, the Korea Exchange launched the Korea New Exchange (KONEX, a new securities exchange market that focuses on small-and medium-sized enterprises). There are four different markets operated by the Korea Exchange: the KRX KOSPI Market, the KRX KOSDAQ Market, the KONEX Market and the KRX Derivatives Market. The Korea Exchange has three trading floors located in Seoul, one for the KRX KOSPI Market, one for the KRX KOSDAQ Market and one for the KONEX Market, and one trading floor in Busan for the KRX Derivatives Market. The Korea Exchange is a stock corporation ("*chusik hoesa*" in Korean), the shares of which are held by (i) investment brokers and investment dealers that were formerly members of the Korea Futures Exchange or the Korea Stock Exchange and (ii) the stockholders of the KOSDAQ. Currently, the Korea Exchange is the only stock exchange in Korea and is operated by membership, having as its members most of the Korean investment brokers and investment dealers and some Korean branches of foreign investment brokers and investment dealers.

According to data published by the Korea Exchange, as of December 30, 2019, the aggregate market value of equity securities listed on the KRX KOSPI Market was approximately Won 1,475 trillion, and the average daily trading volume of equity securities in December 2019 was approximately 509 million shares with an average daily transaction value of Won 5.1 trillion.

The Korea Exchange has the power in some circumstances to suspend trading in the shares of a specific company or to de-list a security pursuant to the Regulation on Listing on the Korea Exchange. The Korea Exchange also restricts share price movements. All listed companies are required to file accounting reports annually, semi-annually and quarterly and to release immediately certain information that may affect trading in a security.

The Korea Exchange publishes the KOSPI every 10 seconds, which is an index of all equity securities listed on the KRX KOSPI Market. On January 1, 1983, the method of computing KOSPI was changed from the Dow Jones method to the aggregate value method. In the new method, the market capitalisations of all listed companies are aggregated, subject to certain adjustments, and this aggregate is expressed as a percentage of the aggregate market capitalisation of all listed companies as of the base date, January 4, 1980.

Movements in KOSPI are set out in the following table:

	Opening	High	Low	Closing
1985	139.53	163.37	131.40	163.37
1986	161.40	279.67	153.85	272.61
1987	264.82	525.11	264.82	525.11
1988	532.04	922.56	527.89	907.20
1989	919.61	1,007.77	844.75	909.72
1990	908.59	928.82	566.27	696.11
1991	679.75	763.10	586.51	610.92
1992	624.23	691.48	459.07	678.44
1993	697.41	874.10	605.93	866.18
1994	879.32	1,138.75	855.37	1,027.37
1995	1,013.57	1,016.77	847.09	882.94
1996	888.85	986.84	651.22	651.22
1997	653.79	792.29	350.68	376.31
1998	385.49	579.86	280.00	562.46
1999	587.57	1,028.07	498.42	1,028.07

	Opening	High	Low	Closing
2000	1,059.04	1,059.04	500.60	504.62
2001	520.95	704.50	468.76	693.70
2002	724.95	937.61	584.04	627.55
2003	635.17	822.16	515.24	810.71
2004	821.26	936.06	719.59	895.92
2005	893.71	1,379.37	870.84	1,379.37
2006	1,389.27	1,464.70	1,203.86	1,434.46
2007	1,435.26	2,064.85	1,355.79	1,897.13
2008	1,853.45	1,888.88	938.75	1,124.47
2009	1,157.40	1,718.88	1,018.81	1,682.77
2010	1,696.14	2,051.00	1,552.79	2,051.00
2011	2,070.08	2,228.96	1,652.71	1,825.74
2012	1,826.37	2,049.28	1,769.31	1,997.05
2013	2,031.10	2,059.58	1,780.63	2,011.34
2014	1,967.19	2,082.61	1,886.85	1,915.59
2015	1,926.44	2,173.41	1,829.81	1,961.31
2016	1,918.76	2,068.72	1,835.28	2,026.46
2017	2,026.16	2,557.97	2,026.16	2,467.49
2018	2,479.65	2,598.19	1,996.05	2,041.04
2019	2,010.00	2,248.63	1,909.71	2,197.67
2020 (through October 20)	2,175.17	2,443.58	1,457.64	2,358.41

Source: The Korea Exchange

Shares are quoted "ex-dividend" on the trading day immediately preceding the last trading day of the relevant company's accounting period. Since the calendar year is the accounting period for the majority of listed companies, this may account for the drop in KOSPI between the closing price of the second trading day preceding the last trading day of one calendar year and the opening price of the trading day immediately preceding the last trading day of such calendar year.

With certain exceptions, principally to take account of a share being quoted "ex-dividend" and "ex-rights," permitted upward and downward movements in share prices of any category of shares on any trading day are limited under the rules of the Korea Exchange to 30% of the previous trading day's closing price of the shares, rounded down as set out below:

Previous trading day's closing price (Won)	Rounded down to (Won)
Less than 1,000	1
1,000 to less than 5,000	5
5,000 to less than 10,000	10
10,000 to less than 50,000	50
50,000 to less than 100,000	100
100,000 to less than 500,000	500
500,000 or more	1,000

As a consequence, if a particular closing price is the same as the price set by the fluctuation limit, the closing price may not reflect the price at which persons would have been prepared, or would be prepared to continue, if so permitted, to buy and sell shares. Orders are executed on an auction system with priority rules to deal with competing bids and offers.

Due to deregulation of restrictions on brokerage commission rates, the brokerage commission rate on equity securities transactions may be determined by the parties, subject to commission schedules being filed with the Korea Exchange by the investment brokers and the investment dealers. In addition, a securities transaction tax (including any agricultural and fishery special surtax thereon) of 0.25% of the sales price will generally be imposed on the transfer of shares or certain securities representing rights to subscribe for shares on the KRX KOSPI Market or the KRX KOSDAQ Market. See "Taxation – Korean Taxation Relating to the Shares."

The number of companies listed on the KRX KOSPI Market, the corresponding total market capitalisation at the end of the periods indicated and the average daily trading volume for those periods are set forth in the following table:

	Market capitalisation on the last day of each period		Average daily trading volume, value	
Year	Number of listed companies	(Billions of Won)	Thousands of shares	(Millions of Won)
1981	343	₩ 2,959	10,565	₩ 8,708
1982	334	3,000	9,704	6,667
1983	328	3,490	9,325	5,941
1984	336	5,149	14,847	10,642
1985	342	6,570	18,925	12,315
1986	355	11,994	31,755	32,870
1987	389	26,172	20,353	70,185
1988	502	64,544	10,367	198,364
1989	626	95,477	11,757	280,967
1990	669	79,020	10,866	183,692
1991	686	73,118	14,022	214,263
1992	688	84,712	24,028	308,246
1993	693	112,665	35,130	574,048
1994	699	151,217	36,862	776,257
1995	721	141,151	26,130	487,762
1996	760	117,370	26,571	486,834
1997	776	70,989	41,525	555,759
1998	748	137,799	97,716	660,429
1999	725	349,504	278,551	3,481,620
2000	704	188,042	306,163	2,602,211
2001	689	255,850	473,241	1,997,420
2002	683	258,681	857,245	3,041,598
2003	684	355,363	542,010	2,216,636
2004	683	412,588	372,895	2,232,108
2005	702	655,075	467,629	3,157,662
2006	731	704,588	279,096	3,435,180
2007	745	951,900	363,732	5,539,588
2008	763	592,635	355,205	5,189,643
2009	770	887,935	485,657	5,795,426
2010	777	1,141,885	380,859	5,619,768
2011	791	1,041,999	353,759	6,863,146
2012	784	1,154,294	486,480	4,823,643
2013	777	1,185,974	328,325	3,993,422
2014	773	1,119,253	278,082	3,983,580
2015	770	1,242,832	455,256	5,351,734
2016	779	1,308,440	376,773	4,523,044
2017	774	1,605,821	340,457	5,325,760
2018	788	1,343,972	397,972	6,548,622
2019	799	1,475,909	470,723	4,989,807
2020 (through October 20)	797	1,616,231	843,765	11,307,687

Source: The Korea Exchange

The Korean securities markets are principally regulated by the FSC under the regulations set forth in the FSCMA. In August 2007, the National Assembly of Korea enacted the FSCMA. The FSCMA, which came into effect on February 4, 2009, comprehensively regulates the Korean capital markets, the financial investment businesses (including collective investment businesses and trust businesses) and financial investment products (such as securities and derivatives). The FSCMA imposes, among others, restrictions on insider trading and price manipulation, requires specified information to be made available by listed companies to investors and establishes rules regarding margin trading, proxy solicitation, takeover bids, acquisition of treasury shares and reporting requirements for shareholders holding substantial interests. The FSCMA regulates the operation and monitoring of the securities and derivatives markets.

PROTECTION OF CUSTOMER'S INTEREST IN CASE OF INSOLVENCY OF INVESTMENT BROKERS OR INVESTMENT DEALERS

Under Korean law, the relationship between a customer and an investment broker or an investment dealer in connection with a securities sell or buy order is deemed to be a consignment and the securities acquired by a consignment agent (i.e., the investment broker or the investment dealer) through such sell or buy order are regarded as belonging to the customer insofar as the customer and the consignment agent's creditors are concerned. Therefore, in the event of a bankruptcy or reorganisation procedure involving an investment broker or an investment dealer, the customer of the investment broker or the investment dealer is entitled to claim the securities acquired by the investment broker or the investment dealer for the customer's account.

Under the FSCMA, the Korea Exchange is obliged to indemnify any loss or damage incurred by a counterparty as a result of a breach by members of the KRX KOSPI Market or the KRX KOSDAQ Market. If an investment broker or an investment dealer that is a member of the KRX KOSPI Market or the KRX KOSDAQ Market breaches its obligation in connection with a buy order, the Korea Exchange is obliged to pay the purchase price on behalf of the breaching member. Therefore, the customer can acquire the securities subject to the buy order that it has placed with the breaching member.

When a customer places a buy order with a non-member company and the non-member company places a buy order with a member company, the customer has the legal right to the securities received by the non-member company from the member company because the purchased securities are regarded as belonging to the customer insofar as the customer and the non-member company's creditors are concerned.

As cash deposited with an investment broker or an investment dealer is regarded as belonging to the investment broker or investment dealer, which is liable to return the same at the request of its customer, the customer cannot take back deposited cash from the investment broker or the investment dealer if a bankruptcy or rehabilitation procedure is instituted in respect of the investment broker or the investment dealer and, therefore, can suffer a loss or damage as a result. However, the Depositor Protection Act provides that the Korea Deposit Insurance Corporation will, upon the request of an investor, pay the investor up to Won 50 million of cash deposited with an investment broker or an investment dealer in case of the investment broker or the investment dealer's bankruptcy, liquidation, cancellation of investment broker or investment dealer license or other insolvency events. Investment brokers and investment dealers pay premiums to the Korea Deposit Insurance Corporation for this insurance. Pursuant to the FSCMA, investment brokers or investment dealers are required to deposit cash received from its customers at the Korea Securities Finance Corporation, a special entity established pursuant to the FSCMA. Set-off or attachment of any such cash deposits by investment brokers or investment dealers is prohibited.

CLEARANCE AND SETTLEMENT

The settlement of trades on the Korea Exchange is required to be handled by a settlement agency of the Korea Exchange. The Korea Securities Depository is the institution commissioned by the Korea Exchange to handle all such settlement of trades.

The settlement of trades on the Korea Exchange takes place through a clearance and settlement procedure. The Korea Exchange has adopted the multilateral netting system and carries out the clearance of the trades by netting the sales and purchases of each Korea Securities Depository participant. The Korea Exchange is required to provide the daily net settlement results of the trades to the Korea Securities Depository by 6 p.m. on the business day immediately prior to the settlement date. The Korea Securities Depository then handles settlement of the securities and the funds based on the information received from the Korea Exchange. The securities are settled through book-entry changes in the accounts of Korea Securities Depository participants and the funds are settled by transfer to accounts at a bank designated by the Korea Securities Depository. Settlement of trades is generally required to take place on the third trading day following the day of the sale and purchase contract (with the day of the sale and purchase contract being the first trading day).

TAXATION

The following is a summary of the principal Korean tax consequences to owners of the Bonds or the Shares, as the case may be, who are non-resident individuals or non-resident corporations without a permanent establishment in Korea to which the relevant income is attributable or with which the relevant income is effectively connected ("Non-resident Holders"). Owners of the Bonds or the Shares, as the case may be, who are non-resident individuals or non-resident corporations with such permanent establishments in Korea are taxed in accordance with different rules. The statements regarding Korean tax laws set forth below are based on the laws in force and as interpreted by the Korean tax authorities as of the date hereof. This summary is not exhaustive of all possible tax considerations which may apply to a particular investor and potential investors are advised to consult their own tax advisers as to the tax consequences of the acquisition, ownership and disposition of the Bonds or the Shares, including the effect of any national, state or local tax laws.

KOREAN TAXATION RELATING TO THE BONDS

Tax on Capital Gains

Capital gains earned by a Non-resident Holder from the sale of the Bonds to a non-resident purchaser (other than to its permanent establishment in Korea) are currently excluded from Korean taxation under the Corporate Income Tax Law (the "CITL") and the Individual Income Tax Law (the "IITL"). In addition, gains earned by a Non-resident Holder from a transfer of the Bonds taking place outside Korea are currently exempt from taxation by virtue of the Special Tax Treatment Control Law of Korea (the "STTCL"), provided that the issuance of the Bonds is deemed to be an overseas issuance under the STTCL.

If the exclusion or exemption from Korean taxation referred to above were to cease to be in effect, in the absence of an applicable tax treaty reducing or eliminating tax on capital gains, the applicable tax rate would be the lower of 11% (including local income tax) of the gross realisation proceeds or (subject to the production of satisfactory evidence of the acquisition cost and certain direct transaction costs of the relevant Bond) 22% (including local income tax) of the realized gain (i.e., the excess of the gross realisation proceeds over the acquisition cost and certain direct transaction costs) made. If such evidence shows that no gain (or a loss) was made on the sale, no Korean tax is payable. There is no provision under relevant Korean tax law to allow offsetting of gains and losses or otherwise aggregating transactions for the purpose of computing the net gains attributable to sales of the Bonds. The purchaser or any other designated withholding agent of the Bonds is obliged under Korean tax law to withhold the applicable amount of Korean tax and make payment thereof to the relevant Korean tax authorities. Unless the seller can claim the benefit of an exemption from tax under an applicable tax treaty or on the failure of the seller to produce satisfactory evidence of the acquisition cost and certain direct transaction costs in relation to the Bonds being sold, the purchaser or such withholding agent must withhold an amount equal to 11% of the gross realisation proceeds. Any amounts withheld by the purchaser or such withholding agent must be paid to the Korean tax authorities no later than the tenth day of the month following the month in which the payment for the purchase of the Bonds occurred. Failure to transmit the withheld tax to the Korean tax authorities in time subjects the purchaser or such withholding agent to penalties under Korean tax law. The Korean tax authorities may attempt to collect such tax from a non-resident purchaser or a non-resident withholding agent who is obliged to withhold such tax, through proceedings against payments due to such purchaser or withholding agent from its Korean investments and the assets or revenues of any of its branches or representative offices in Korea.

Conversion

It is unclear under Korean tax law whether the conversion of the Bonds into Shares would constitute a taxable event for the Non-resident Holders of the Bonds for Korean capital gains tax purposes.

If the relevant payment is made by cash upon the conversion right being exercised, it is likely to trigger a taxable event for Korean income tax purpose. However, it is not clear whether the gain from the conversion will be treated as interest income, capital gains or "other income" and how the amount subject to such tax would be calculated. If treated as interest income, the gain from the exercise may be exempt under the STTCL, provided that the issuance of the Bonds is deemed to be an overseas issuance under the STTCL. If treated as capital gains, such gain may be exempt from Korean taxation under an applicable Korean tax treaty. If treated as "other income, "such gain will be subject to the Korean withholding tax at the rate of 22% (including local income tax), unless reduced or exempt under an applicable Korean tax treaty.

KOREAN TAXATION RELATING TO THE SHARES

Tax on Dividends

Dividends on the Shares paid (whether in cash or in shares) to a Non-resident Holder will be subject to Korean withholding tax at the rate of 22% (including local income tax) or such lower rate as is applicable under a treaty between Korea and such Non-resident Holder's country of tax residence. Free distributions of shares representing a capitalisation of certain capital surplus reserves may be subject to Korean withholding taxes.

The tax is withheld by the payer of the dividend. In order to obtain an exemption or reduction of withholding tax pursuant to an applicable tax treaty, a Non-resident Holder must submit certain application to the payer of dividend income prior to the dividend payment date. See "– Tax Treaties" below for a discussion on the application of relevant tax treaties.

Tax on Capital Gains

As a general rule, capital gains earned by Non-resident Holders upon transfer of the Shares are subject to Korean withholding tax at the lower of (i) 11% (including local income tax) of the gross proceeds realized or (ii) 22% (including local income tax) of the net realized gains (subject to the production of satisfactory evidence of the acquisition costs and certain direct transaction costs), unless exempt from Korean income taxation under an applicable tax treaty between Korea and such Non-resident Holder's country of tax residence. See "– Tax Treaties" below for a discussion on the application of relevant tax treaties.

However, a Non-resident Holder will not be subject to Korean income taxation on capital gains realized upon the sale of the Shares through the Korea Exchange if the Non-resident Holder (i) has no permanent establishment in Korea and (ii) did not or has not owned (together with any shares owned by any entity with certain special relationships with such Non-resident Holder) 25% or more of the Company's total issued and outstanding shares at any time during the calendar year in which the sale occurs and during the five calendar years prior to the calendar year in which the sale occurs.

KOREAN INHERITANCE TAX AND GIFT TAX

Korean inheritance tax is imposed upon (a) all assets (wherever located) of the deceased if at the time of his death he was domiciled in Korea or resided in Korea for at least 183 days immediately prior to his death and (b) all property located in Korea that passes on death (irrespective of the domicile or residence of the deceased). Gift tax is imposed in similar circumstances to the above. The taxes are imposed if the value of the relevant property is above a certain limit and the rate varies from 10% to 50% depending on the value of the relevant property and the nature of the relationship between the parties.

Under the Korean Inheritance Tax and Gift Tax Law, bonds, shares and other securities issued by Korean corporations are deemed located in Korea irrespective of where they are physically located or by whom they are owned, and, consequently, the Korean inheritance and gift taxes will be imposed on transfers of the Bonds or the Shares by inheritance or gift. Prospective purchasers should consult their personal tax advisers regarding the consequences of the imposition of the Korean inheritance or gift tax.

KOREAN STAMP DUTY AND SECURITIES TRANSACTION TAX

No stamp, issue or registration duties will be payable in Korea by Non-resident Holders in connection with the issue of the Bonds except for a nominal amount of stamp duty on certain documents executed in Korea which will be paid by the Issuer.

No Korean securities transaction tax will be imposed upon the transfer of the Bonds.

Korean securities transaction tax is imposed on the transfer of shares issued by a Korean corporation generally at the rate of 0.45% of the sales price. In the case of the transfer of shares listed on the Korea Exchange (such as the Shares), the securities transaction tax is imposed generally at the rate of (i) 0.25% of the sales price of such shares (including agricultural and fishery special surtax thereon) if traded on the Korea Exchange or (ii) subject to certain exceptions, 0.45% of the sales price of such shares if traded outside the Korea Exchange.

Korean securities transaction tax or the agricultural and fishery special surtax is not applicable if (i) the shares are listed on a designated foreign stock exchange and (ii) the sale of the shares takes place on such exchange.

Korean securities transaction tax, if applicable, must be paid by the transferor of the shares, in principle. When the transfer is effected through a securities settlement company, such settlement company is generally required to withhold and pay (to the tax authorities) the tax, and when such transfer is made through a financial investment company with a brokerage license, such company is required to withhold and pay the tax. Where the transfer is effected by a Non-resident Holder, other than through a securities settlement company or a financial investment company with a brokerage license, the transferee is required to withhold the securities transaction tax and pay the same to Korean taxation authorities. Failure to do so will result in the imposition of penalties equal to the sum of (i) between 10% to 60% of the tax amount due, depending on the nature of the improper reporting, and (ii) 9.125% per annum on the tax amount due for the default period.

TAX TREATIES

At the date of this offering circular, Korea has tax treaties with over 90 countries including, inter alia, Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Luxembourg, Malaysia, the Netherlands, New Zealand, Norway, Singapore, Sweden, Switzerland, the United Kingdom and the United States of America, under which the rate of withholding tax on dividend and interest is reduced, generally to between 5.0% and 16.5% (including local income tax), and the tax on capital gains is often eliminated.

Each Non-resident Holder of the Bonds or the Shares should inquire whether it is entitled to the benefit of a tax treaty with respect to any transaction involving the Bonds or the Shares. It is the responsibility of the party claiming the benefits of a tax treaty in respect of interest payments and other transactions to file with the payer of Korean source income or any other designated withholding agent certain applications and documents as outlined below. In the absence of such filings, the payer or such withholding agent must withhold taxes in accordance with the above discussion.

In order for a Non-resident Holder to obtain the benefit of a tax exemption on certain Korean source income, such as capital gains, under an applicable tax treaty, Korean tax law requires such Non-resident Holder (or its agents) to submit to the payer of such Korean source income an application for tax exemption under Korean tax law along with a certificate of tax residency of such Non-resident Holder issued by a competent authority of the Non-resident Holder's country of tax residence, subject to certain exceptions. If the Korean source income is paid to an overseas investment vehicle, such investment vehicle, subject to certain exceptions, must obtain an application for tax exemption along with a certificate of tax residency from each of its non-resident beneficial owners seeking a tax exemption under an applicable tax treaty and submit to the payer of such Korean source income a report of overseas investment

vehicle, together with the applications for tax exemption prepared by the non-resident beneficial owners and a schedule of non-resident beneficial owners. The payer of such Korean source income, in turn, is required to submit such application to the relevant district tax office by the ninth day of the month following the date of the first payment of such income. However, this requirement does not apply to exemptions under Korean tax law.

Furthermore, in order for a Non-resident Holder to obtain the benefit of a tax reduction on certain Korean source income, such as interest and dividends, under an applicable tax treaty, Korean tax law generally requires such Non-resident Holder (or its agents) to submit to the payer of such Korean source income an application for entitlement to a reduced tax rate prior to the Non-resident Holder's receipt of such Korean source income. If the Korean source income is paid to an overseas investment vehicle, such investment vehicle must, subject to certain exceptions, obtain an application for entitlement to a reduced tax rate from each of its non-resident beneficial owners seeking a tax reduction under an applicable tax treaty and submit to the payer of such Korean source income a report of overseas investment vehicle together with a schedule of non-resident beneficial owners. An application for entitlement to a reduced tax rate submitted by a Non-resident Holder remains effective for three years from submission, and if any changes occur with respect to information provided in the application, an application reflecting such change must be newly submitted.

Effective from January 1, 2020, an overseas investment vehicle that was not established for the purpose of unfairly reducing Korea income tax liabilities and bears tax liabilities in the country of which it is a resident is deemed as the beneficial owner of Korean source income. The benefits under an applicable tax treaty between Korea and the country of which the overseas investment vehicle is a resident will apply with respect to the relevant income paid to such overseas investment vehicle, subject to certain application requirements as prescribed by the CITL and the IITL such as an application for tax exemption or application for entitlement to a reduced tax rate, as the case may be, along with a certificate of tax residency of such overseas investment vehicle, a report of overseas investment vehicle treated as beneficial owner of Korean source income and documents required to be attached thereto.

Withholding and Gross Up

In the event that any withholding or deduction for or on account of any Korean taxes is required by law in relation to any payments in respect of the Bonds (as more fully described in "Terms and Conditions of the Bonds – Taxation"), the Issuer will pay (subject to the customary exceptions as set out in "Terms and Conditions of the Bonds – Taxation") such Additional Amounts as may be necessary in order that the net amounts received by the holder of the Bonds after such withholding or deduction shall equal the amounts which would have been receivable in respect of the Bonds in the absence of such withholding or deduction.

SUBSCRIPTION AND SALE

The Issuer has entered into a subscription agreement (the "Subscription Agreement") dated 2020 with Citigroup Global Markets Limited and J.P. Morgan Securities plc (together, the "Managers") pursuant to which, and subject to certain conditions contained therein, it has agreed to sell to the Managers and the Managers have agreed to subscribe and pay for, or to procure subscribers to subscribe and pay for, the Bonds at the issue price of 100% of the aggregate principal amount of the Bonds less a combined management and underwriting commission as agreed between the Managers and the Issuer.

The Issuer has agreed to indemnify the Managers against certain liabilities incurred in connection with the issue of the Bonds. The Subscription Agreement provides that the obligations of the Managers are subject to certain conditions precedent and entitle the Managers to terminate it in certain circumstances prior to payment of the issue price to the Issuer.

The Issuer has undertaken to the Managers that neither it nor any person acting on its behalf will, beginning from the date of the Subscription Agreement up to 90 days after the Closing Date, without the prior written consent of the Managers, issue, offer, sell, pledge, contract to sell or otherwise dispose of or grant options, issue warrants or offer rights entitling persons to subscribe for or purchase any interest in, or any securities convertible into, exchangeable for or which carry rights to subscribe for or purchase, the Shares or securities of the same class as the Shares or other instruments representing interests in the Shares or other securities of the same class as them (collectively, the "Securities"), (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of the ownership of the Shares, whether any such transaction of the kind described in (a) or (b) is to be settled by delivery of Shares or other securities, in cash or otherwise or (c) announce or otherwise make public an intention to do any of the foregoing; except for (i) the Shares delivered on conversion of the Bonds, (ii) any offer, sale and pledge of, contract to sell or other disposal of, any Securities to any of its subsidiaries or affiliates, so long as the subsidiary or affiliate agrees in writing to be bound by the restrictions on the Securities for the remainder of the 90 day period in the same manner as set out herein, (iii) issuance of Securities in connection with granting of stock options to the Issuer's directors, officers or employees, and (iv) any public announcement of an intention to effect any transaction described in (i) through (iii) above.

In connection with the offering of the Bonds, the Managers or any of their respective affiliates may purchase the Bonds for its own account and enter into transactions, including (i) credit derivatives (including convertible asset swaps, repackaging transactions and credit default swaps) relating to the Bonds and/or our securities and (ii) equity derivatives and stock loan transactions relating to the Shares. Such transactions may occur either at the same time as the offer and sale of the Bonds, or in secondary market transactions. Such transactions would be carried out as bilateral transactions with selected counter-parties and separately from any existing sale or resale of the Bonds to which this offering circular relates (notwithstanding that such selected counter-parties may also be purchasers of the Bonds).

The Managers and certain of their respective affiliates may have performed certain investment banking and advisory, brokerage, commercial banking, financial advisory and fiduciary services for the Issuer, our affiliates and/or any other persons from time to time for which they have received customary fees and expenses and may, from time to time, engage in transactions with and perform services for the Issuer and/or our affiliates in the ordinary course of their business and which may have conflicting interests with respect to any potential investor of the Bonds (including, without limitation, the provision of services in respect of acquiring long or short positions in the Bonds or derivatives or in the Shares or buy or sell the Bonds or derivatives or the Shares).

GENERAL

No representation is made by the Issuer that any action has been or will be taken in any jurisdiction by the Issuer that would permit a public offering of the Bonds, or possession or distribution of this offering circular in any country or jurisdiction where action for that purpose is required.

UNITED STATES

The Bonds and the Shares to be issued upon conversion of the Bonds have not been and will not be registered under the Securities Act and may not be offered or sold within the United States except in accordance with Regulation S or pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. Each Manager has represented, warranted and agreed that it has not offered or sold, and will not offer or sell, any Bonds constituting part of its allotment within the United States except in reliance on Regulation S under the Securities Act. Accordingly, neither it nor its affiliates nor any persons acting on its or their behalf have engaged or will engage in any directed selling efforts with respect to the Bonds. Terms used in this paragraph have the meanings given to them by Regulation S.

KOREA

A registration statement for the offering and sale of the Bonds has not been filed with the FSC and under the current laws and regulations of Korea. Accordingly, the Bonds may not be offered, sold or delivered, directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as such term is defined under the Foreign Exchange Transaction Law of Korea and its enforcement decree), except as otherwise permitted under applicable Korean laws and regulations.

SINGAPORE

Each Manager has acknowledged that this offering circular has not been and will not be registered as a prospectus with the Monetary Authority of Singapore under the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"). Accordingly, each Manager has represented and agreed that it has not offered or sold any Bonds or caused any Bonds to be made the subject of an invitation for subscription or purchase, and will not offer or sell any Bonds or cause any Bonds to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, and will not circulate or distribute, this offering circular or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of any Bonds, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor under Section 274 of the SFA, (ii) to a relevant person pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA and (where applicable) Regulation 3 of the Securities and Futures (Classes of Investors) Regulations 2018 of Singapore, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Bonds are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Bonds pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law;

(4) as specified in Section 276(7) of the SFA; or

(5) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018 of Singapore.

HONG KONG

Each Manager has represented and agreed that:

(a) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Bonds other than (i) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "SFO") and any rules made under the SFO; or (ii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong (the "C(WUMP)O") or which do not constitute an offer to the public within the meaning of the C(WUMP)O; and

(b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Bonds, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to Bonds which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under the SFO.

UNITED KINGDOM

Each Manager has represented, warranted and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (the "FSMA")) received by it in connection with the issue or sale of any Bonds in circumstances in which section 21(1) of the FSMA does not apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the Bonds in, from or otherwise involving the United Kingdom.

PROHIBITION OF SALES TO EEA AND UK RETAIL INVESTORS

Each Manager has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Bonds to any retail investor in the EEA or in the UK. For the purposes of this provision:

(a) the expression "retail investor" means a person who is one (or more) of the following:

  (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "MiFID II");

  (ii) a customer within the meaning of Directive (EU) 2016/97, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or

  (iii) not a qualified investor as defined in Regulation (EU) 2017/1129; and

(b) the expression "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Bonds to be offered so as to enable an investor to decide to purchase or subscribe for the Bonds.

Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the Bonds or otherwise making them available to retail investors in the EEA or in the UK has been prepared and therefore offering or selling the Bonds or otherwise making them available to any retail investor in the EEA or in the UK may be unlawful under the PRIIPs Regulation.

TRANSFER RESTRICTIONS

Because of the following restrictions, purchasers are advised to consult with legal counsel prior to making any offer, resale, pledge or other transfers of the Bonds, or the Shares deliverable upon conversion of the Bonds.

Transfer restrictions under Korean law

Each purchaser of the Bonds, by accepting delivery of this offering circular, will be deemed to have acknowledged and represented and agreed that the Bonds have not been registered under the FSCMA, accordingly, the Bonds may not be offered, sold or delivered, directly or indirectly, in Korea or to, or for the account or benefit of, any resident of Korea (as such term is defined under the Foreign Exchange Transaction Law of Korea and its enforcement decree), for a period of one year from the date of issuance of the Bonds, except as otherwise permitted under applicable Korean laws and regulations. In addition, until the expiration of one year after the issuance of the Bonds, the Bonds may not be transferred to any resident of Korea.

Transfer restrictions applicable to the Bonds, and the Shares deliverable upon conversion of the Bonds

The Bonds, and the Shares deliverable upon conversion of the Bonds have not been and will not be registered under the Securities Act. The Bonds and the Shares deliverable upon conversion of the Bonds may not be offered or sold to any person in the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. In addition, no transfer of any interest in the Bond may be made to any U.S. person (as defined in Regulation S under the Securities Act) or for the account or benefit of a U.S. person for a period of 40 days after the later of when the Bonds were first offered to persons other than distributors or the Closing Date of this offering.

Except in certain limited circumstances, interests in the Bonds may only be held through interests in the Global Certificate. Such interests in the Global Certificate will be shown on, and transfers thereof will be effected only through, records maintained by Euroclear and Clearstream and their respective direct and indirect participants. See "Terms and Conditions of the Bonds" and "The Global Certificate."

Each purchaser of the Bonds, by accepting delivery of this offering circular, will be deemed to have acknowledged and represented and agreed as follows:

1. The Bonds, and the Shares deliverable upon conversion of the Bonds, have not been and will not be registered under the Securities Act or with any securities regulatory authority of any state of the United States and are subject to significant restrictions on transfer.

2. Until 40 days after the commencement of offering of the Bonds, an offer or sale of Bonds or Shares to be delivered upon conversion of the Bonds within the United States by any dealer (whether or not participating in the offering) may violate the registration requirements of the Securities Act.

3. Such purchaser will not offer, sell, pledge or otherwise transfer any interest in the Bonds, or the Shares deliverable upon conversion of the Bonds, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act.

4. The Bonds will bear legends to the following effect, unless the Issuer determines otherwise in compliance with applicable law, and such purchaser will observe the restrictions contained therein:

THIS BOND (OR ITS PREDECESSOR) WAS ORIGINALLY ISSUED IN A TRANSACTION EXEMPT FROM REGISTRATION UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND MAY NOT BE TRANSFERRED IN THE UNITED STATES EXCEPT PURSUANT TO AN AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND ALL APPLICABLE STATE SECURITIES LAWS. TERMS USED ABOVE HAVE THE MEANINGS GIVEN TO THEM IN REGULATION S UNDER THE SECURITIES ACT.

THE BONDS HAVE NOT BEEN REGISTERED UNDER THE FINANCIAL INVESTMENT SERVICES AND CAPITAL MARKETS ACT OF KOREA. ACCORDINGLY, THE BONDS MAY NOT BE OFFERED, SOLD OR DELIVERED, DIRECTLY OR INDIRECTLY, IN KOREA OR TO, OR FOR THE ACCOUNT OR BENEFIT OF, ANY RESIDENT OF KOREA (AS SUCH TERM IS DEFINED UNDER THE FOREIGN EXCHANGE TRANSACTION LAW OF KOREA AND ITS ENFORCEMENT DECREE), FOR A PERIOD OF ONE YEAR FROM THE DATE OF ISSUANCE OF THE BONDS, EXCEPT AS OTHERWISE PERMITTED UNDER APPLICABLE KOREAN LAWS AND REGULATIONS. IN ADDITION, UNTIL THE EXPIRATION OF ONE YEAR AFTER THE ISSUANCE OF THE BONDS, THE BONDS MAY NOT BE TRANSFERRED TO ANY RESIDENT OF KOREA.

LEGAL MATTERS

Certain legal matters relating to this offering will be passed upon for the Issuer by Cleary Gottlieb Steen & Hamilton LLP as to matters of English law and Kim & Chang as to matters of Korean law, and for the Managers by Linklaters LLP as to matters of English law. Cleary Gottlieb Steen & Hamilton LLP and Linklaters LLP may rely as to all matters of Korean law on the opinion of Kim & Chang. Kim & Chang may rely as to all matters of English law on the opinion of Cleary Gottlieb Steen & Hamilton LLP.

INDEPENDENT ACCOUNTANTS

The Company's consolidated financial statements as of and for the years ended December 31, 2019 and 2018 and the Company's consolidated financial statements as of and for the years ended December 31, 2018 and 2017, included in this offering circular, have been audited by Samil PricewaterhouseCoopers, independent accountants, as stated in their reports appearing herein.

With respect to the Company's unaudited condensed consolidated interim financial statements as of June 30, 2020 and for the six-month period ended June 30, 2020, included in this offering circular, KPMG Samjong Accounting Corp. have reported that they applied limited procedures in accordance with professional standards for a review of such information. However, their separate report included in this offering circular states that they did not audit and do not express an opinion on such interim financial information. Accordingly, the degree of reliance on their report on such information should be restricted in light of the limited nature of the review procedures applied.

With respect to the Company's unaudited financial information for the six-month period ended June 30, 2019 included in this offering circular, Samil PricewaterhouseCoopers reported that they have applied limited procedures in accordance with professional standards for a review of such information. However, their separate report dated August 14, 2019 appearing herein states that they did not audit and they do not express an opinion that such financial information. Accordingly, the degree of reliance on their report on such information should be restricted in light of the limited nature of the review procedures applied.

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KPMG SAMJONG

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Independent Auditors' Review Report

The Board of Directors and Shareholders
Kakao Corp.:

Reviewed financial statements
We have reviewed the accompanying condensed consolidated interim financial statements of Kakao Corp. and subsidiaries (the "Group") which comprise the condensed consolidated interim statement of financial position as of June 30, 2020, the condensed consolidated interim statements of comprehensive income for the three-month and six-month periods ended June 30, 2020, statements of changes in equity and cash flows for the six-month periods ended June 30, 2020, and notes comprising a summary of significant accounting policies and other explanatory information.

Management's responsibility
Management is responsible for the preparation and fair presentation of these condensed consolidated interim financial statements in accordance with Korean International Financial Reporting Standards No. 1034, *Interim Financial Reporting*, and for such internal controls as management determines is necessary to enable the preparation of condensed consolidated interim financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' review responsibility
Our responsibility is to issue a report on these condensed consolidated interim financial statements based on our review.

We conducted our review in accordance with the Review Standards for Quarterly and Semiannual Financial Statements established by the Security and Futures Commission of the Republic of Korea. A review of interim financial information consists principally of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Korean Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Conclusion
Based on our review, nothing has come to our attention that causes us to believe that the condensed consolidated interim financial statements referred to above are not presented fairly, in all material respects, in accordance with Korean International Financial Reporting Standards No. 1034, *Interim Financial Reporting*.

Other matters
The procedures and practices utilized in the Republic of Korea to review such condensed consolidated interim financial statements may differ from those generally accepted and applied in other countries.

The accompanying condensed consolidated interim statements of comprehensive income, changes in equity and cash flows for the three-month and six-month periods ended June 30, 2019, presented herein for comparative purposes, were reviewed by other auditors, whose report thereon dated August 14, 2019 stated that nothing came to their attention that causes them to believe those condensed consolidated interim financial statements are not prepared, in all material respects, in accordance with K-IFRS No. 1034, *Interim Financial Reporting*.

The accompanying consolidated statement of financial position of the Group as of December 31, 2019, and the related consolidated statements of comprehensive income, changes in equity and cash flows for the year then ended, which are not accompanying this report, were audited by other auditors in accordance with Korean Standards on Auditing, whose report thereon dated March 17, 2020, expressed an unqualified opinion. The accompanying consolidated statement of financial position as of December 31, 2019, presented herein for comparative purposes, is consistent, in all material respects, with the above audited consolidated statement of financial position from which it has been derived.

KPMG Samjong Accounting Corp.

Seoul, Korea
August 14, 2020

This report is effective as of August 14, 2020, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying condensed consolidated interim financial statements and notes thereto. Accordingly, the readers of the review report should understand that the above review report has not been updated to reflect the impact of such subsequent events or circumstances, if any.

Report on Review of Interim Financial Statements

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
Kakao Corp.

Reviewed Financial Statements

We have reviewed the accompanying consolidated interim financial statements of Kakao Corp. and its subsidiaries (collectively the "Company"). These financial statements consist of the consolidated interim statements of comprehensive income for the three-month and six-month periods ended June 30, 2019, and consolidated interim statements of changes in equity and cash flows for the six-month period ended June 30, 2019, and a summary of significant accounting policies and other explanatory notes, expressed in Korean won.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated interim financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("Korean IFRS") 1034 *Interim Financial Reporting*, and for such internal control as management determines is necessary to enable the preparation of consolidated interim financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to issue a report on these consolidated interim financial statements based on our review.

We conducted our review in accordance with quarterly or semi-annual review standards established by the Securities and Futures Commission of the Republic of Korea. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Korean Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Conclusion

Based on our review, nothing has come to our attention that causes us to believe the accompanying consolidated interim financial statements are not presented fairly, in all material respects, in accordance with Korean IFRS 1034 *Interim Financial Reporting.*

Other Matter

Review standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to review such financial statements may differ from those generally accepted and applied in other countries.

/s/ Samil PricewaterhouseCoopers
August 14, 2019
Seoul, Korea

This report is effective as at August 14, 2019, the review report date. Certain subsequent events or circumstances, which may occur between the review report date and the time of reading this report, could have a material impact on the accompanying consolidated interim financial statements and notes thereto. Accordingly, the readers of the review report should understand that there is a possibility that the above review report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

KAKAO CORP. AND SUBSIDIAIRIES

Condensed Consolidated Interim Statements of Financial Position

As of June 30, 2020 and December 31, 2019

(Unaudited)

(In thousands of won)	**Note**		**June 30, 2020**	**December 31, 2019**
Assets				
Current assets				
Cash and cash equivalents	6	₩	1,812,572,517	1,918,225,199
Short-term financial instruments	6		476,786,539	207,766,855
Financial assets at fair value through profit or loss	4,6,7		283,020,769	49,512,474
Derivative financial assets	4,6,7		1,111,592	1,111,592
Trade receivables	6,7		146,669,089	157,220,905
Other current financial assets	6,7		258,739,683	252,486,445
Inventories			49,967,577	49,449,772
Other current assets	8		244,571,160	193,921,212
Total current assets			3,273,438,926	2,829,694,454
Non-current assets				
Long-term financial instruments	6		10,172,667	50,061,893
Financial assets at fair value through profit or loss	4,6,7		178,979,373	127,148,334
Financial assets at fair value through other comprehensive income	4,6,7		414,210,055	419,265,484
Investments in associates and joint venture	9		1,104,360,568	978,943,948
Other non-current financial assets	6,7		111,216,565	92,354,874
Property and equipment	10		367,551,327	349,818,319
Intangible assets	12		3,713,713,312	3,548,415,768
Investment property	11		25,202,662	2,843,015
Right-of-use assets	13		240,916,785	227,458,397
Other non-current assets	8		73,226,797	50,547,990
Deferred income tax assets			62,178,393	60,703,280
Total non-current assets			6,301,728,504	5,907,561,302
Assets of financial services business				
Cash and cash equivalents	6,16		25,712,409	-
Deposits	6,16		8,505,891	-
Financial assets at fair value through profit or loss	4,6,7		289,836,090	-
Financial assets at fair value through other comprehensive income	4,6,7		200,000	-
Property and equipment	10		5,792,695	-
Intangible assets	12		40,504,034	-
Right-of-use assets	13		1,218,623	-
Other financial assets	6,7		95,861,325	-
Other assets			196,502	-
Total assets of financial services business			467,827,569	-
Total assets		₩	10,042,994,999	8,737,255,756

See accompanying notes to the condensed consolidated interim financial statements.

(In thousands of won)	Note		June 30, 2020	December 31, 2019
Liabilities				
Current liabilities				
Trade and other payables	6	₩	644,112,593	578,566,878
Short-term borrowings	6,14		195,603,934	448,595,787
Deposits received	6		286,387,761	299,564,327
Other current financial liabilities	6		31,526,628	25,256,212
Income tax payable			63,788,984	68,348,251
Provisions			7,388,102	7,080,585
Derivative financial liabilities	4,6		21,190,905	18,290,148
Short-term lease liabilities	13		73,652,762	68,076,544
Other current liabilities	8		997,131,291	919,543,404
Total current liabilities			2,320,782,960	2,433,322,136
Non-current liabilities				
Non-current trade and other payables	6		51,393,406	32,872,443
Long-term borrowings	6,14		38,644,951	72,269,299
Non-current provisions			16,581,167	14,843,785
Long-term lease liabilities	13		175,117,394	164,988,889
Net defined benefit liabilities	15		21,113,923	3,554,861
Other long-term employee benefits liabilities			49,833,732	43,591,935
Non-current derivative financial liabilities	4,6		13,846,554	7,371,532
Deferred income tax liabilities			169,088,657	141,056,456
Other non-current financial liabilities	6		62,340,935	62,843,093
Other non-current liabilities	8		37,234,603	20,423,575
Total non-current liabilities			635,195,322	563,815,868
Liabilities of financial services business				
Deposits received	6		282,493,110	-
Deferred income tax liabilities			236,803	-
Net defined benefit liabilities	15		167,184	-
Other long-term employee benefit liabilities			173,273	-
Provisions			43,758	-
Lease liabilities	13		1,198,520	-
Other financial liabilities	6		98,990,487	-
Other liabilities			2,243,851	-
Total liabilities of financial services business			385,546,986	-
Total liabilities		₩	3,341,525,268	2,997,138,004
Stockholders' equity				
Share capital	17	₩	43,973,079	43,161,318
Share premium	17		5,631,396,677	5,043,198,615
Other components of equity			(22,785,143)	7,238,239
Accumulated other comprehensive loss			(24,501,925)	(16,393,294)
Retained earnings			377,922,999	148,154,242
Equity attributable to owners of the Parent Company			6,006,005,687	5,225,359,120
Non-controlling interests			695,464,044	514,758,632
Total equity			6,701,469,731	5,740,117,752
Total equity and liabilities		₩	10,042,994,999	8,737,255,756

See accompanying notes to the condensed consolidated interim financial statements.

KAKAO CORP. AND SUBSIDIAIRIES

Condensed Consolidated Interim Statements of Comprehensive Income

For the three-month and six-month periods ended June 30, 2020 and 2019

(Unaudited)

(In thousands of won, except for earnings per share)	**Notes**		**June 30, 2020**		**June 30, 2019**	
			Three-month period	**Six-month period**	**Three-month period**	**Six-month period**
Revenue	5,8	₩	952,853,055	1,821,230,086	733,035,282	1,439,347,700
Operating expenses	19		854,816,524	1,635,825,845	692,948,183	1,371,904,256
Bad debt expense (reversal of allowance for bad debts)			265,341	(577,668)	(371,481)	(678,520)
Operating profit			97,771,190	185,981,909	40,458,580	68,121,964
Other non-operating income			100,713,495	122,460,411	13,462,816	22,299,401
Other non-operating expense			14,581,956	24,122,745	10,955,287	27,003,448
Interest income			5,607,268	11,781,878	8,572,006	17,167,404
Other finance income			15,716,542	46,388,526	4,746,747	18,952,252
Finance costs			1,986,631	17,931,686	13,769,556	19,498,545
Share of income of associates and joint venture	9		18,067,881	32,402,335	16,756,614	25,772,762
Share of loss of associates and joint venture	9		17,184,527	26,238,485	5,704,834	11,732,929
Profit before income tax			204,123,262	330,722,143	53,567,086	94,078,861
Income tax expense	20		58,900,898	105,600,365	22,574,592	45,522,699
Profit for the period			145,222,364	225,121,778	30,992,494	48,556,162
Profit (loss) attributable to:						
Equity holders of the Parent Company			139,761,393	217,221,902	38,774,841	66,286,629
Non-controlling interests			5,460,971	7,899,876	(7,782,347)	(17,730,467)
Other comprehensive income (loss)						
Items not to be reclassified subsequently to profit or loss:						
Remeasurement of net defined benefit liabilities			(7,332)	81,452	-	(190,070)
Gain (loss) on valuation of equity instruments at fair value through other comprehensive income			44,371,101	8,903,650	(4,391,286)	(3,750,232)
Revaluation surplus			352,184	360,210	-	-
Items to be reclassified subsequently to profit or loss:						
Share of other comprehensive income (loss) of associates and joint ventures, net of tax	9		2,538,426	5,572,787	510,507	(2,935,024)
Foreign currency translation adjustments, net of tax			(510,018)	4,482,399	5,649,750	7,290,412
Other comprehensive income for the period, net of tax			46,744,361	19,400,498	1,768,971	415,086
Total comprehensive income for the period		₩	191,966,725	244,522,276	32,761,465	48,971,248

See accompanying notes to the condensed consolidated interim financial statements.

(In thousands of won, except for earnings per share)	Notes		June 30, 2020		June 30, 2019	
			Three-month period	Six-month period	Three-month period	Six-month period
Total comprehensive income (loss) for the period is attributable to:						
Equity holders of the Parent Company		₩	183,774,461	232,072,748	43,111,687	68,640,206
Non-controlling interests			8,192,264	12,449,528	(10,350,222)	(19,668,958)
Earnings per share to the equity holders of the Parent Company:						
Basic earnings per share (in won)	21	₩	1,648	2,598	490	837
Diluted earnings per share (in won)	21		1,625	2,552	481	827

See accompanying notes to the condensed consolidated interim financial statements.

KAKAO CORP. AND SUBSIDIAIRIES

Condensed Consolidated Interim Statements of Changes in Equity

For the three-month and six-month periods ended June 30, 2020 and 2019

(Unaudited)

(In thousands of won)

	Notes	Attributable to equity holders of the Parent Company							
		Share capital	Share premium	Other components of equity	Accumulated other comprehensive loss	Retained earnings	Sub-total	Non-controlling interests	Total equity
Balance at January 1, 2019		₩ 41,743,887	4,647,543,419	1,492,215	(7,329,380)	453,400,468	5,136,850,609	490,306,955	5,627,157,564
Total comprehensive income (loss):									
Profit (loss) for the period		-	-	-	-	66,286,629	66,286,629	(17,730,467)	48,556,162
Foreign currency translation adjustments, net of tax		-	-	-	6,250,178	-	6,250,178	1,040,234	7,290,412
Share of other comprehensive loss of associates, net of tax		-	-	-	(2,935,024)	-	(2,935,024)	-	(2,935,024)
Gain (loss) on valuation of financial instruments at fair value through other comprehensive income		-	-	-	(872,457)	-	(872,457)	(2,877,775)	(3,750,232)
Remeasurement of net defined benefit liabilities		-	-	-	(89,120)	-	(89,120)	(100,950)	(190,070)
Total comprehensive income (loss) for the period		-	-	-	2,353,577	66,286,629	68,640,206	(19,668,958)	48,971,248
Transactions with equity holders:									
Exercise of stock options		35,500	6,816,640	(865,582)	-	-	5,986,558	636,508	6,623,066
Share-based compensation	18	-	-	4,948,521	-	-	4,948,521	4,779,864	9,728,385
Cash dividends		-	-	-	-	(10,052,594)	(10,052,594)	(199,978)	(10,252,572)
Change in ownership interest		-	7,530,281	-	-	-	7,530,281	19,137,310	26,667,591
Change in scope of consolidation		-	-	-	-	-	-	(42,908,226)	(42,908,226)
Total transactions with equity holders:		35,500	14,346,921	4,082,939	-	(10,052,594)	8,412,766	(18,554,522)	(10,141,756)
Balance at June 30, 2019		₩ 41,779,387	4,661,890,340	5,575,154	(4,975,803)	509,634,503	5,213,903,581	452,083,475	5,665,987,056

See accompanying notes to the condensed consolidated interim financial statements.

KAKAO CORP. AND SUBSIDIAIRIES

Condensed Consolidated Interim Statements of Changes in Equity, Continued

For the three-month and six-month periods ended June 30, 2020 and 2019

(Unaudited)

(In thousands of won)

	Notes	Attributable to equity holders of the Parent Company							
		Share capital	Share premium	Other components of equity	Accumulated other comprehensive loss	Retained earnings	Sub-total	Non-controlling interests	Total equity
Balance at January 1, 2020		₩ 43,161,318	5,043,198,615	7,238,239	(16,393,294)	148,154,241	5,225,359,119	514,758,632	5,740,117,751
Total comprehensive income (loss):									
Profit for the period		-	-	-	-	217,221,902	217,221,902	7,899,876	225,121,778
Foreign currency translation adjustments, net of tax		-	-	-	3,820,373	-	3,820,373	662,026	4,482,399
Share of other comprehensive loss of associates, net of tax		-	-	-	5,569,406	-	5,569,406	3,381	5,572,787
Gain on valuation of financial instruments at fair value through other comprehensive income		-	-	-	5,048,290	-	5,048,290	3,855,360	8,903,650
Reclassification of gain on valuation of financial instruments at fair value through other comprehensive income		-	-	-	(22,729,383)	22,729,383	-	-	-
Revaluation surplus		-	-	-	337,933	-	337,933	22,277	360,210
Reclassification of revaluation surplus		-	-	-	(230,094)	230,094	-	-	-
Remeasurement of net defined liabilities		-	-	-	74,844	-	74,844	6,608	81,452
Total comprehensive income (loss) for the period		-	-	-	(8,108,631)	240,181,379	232,072,748	12,449,528	244,522,276
Transactions with equity holders:									
Exercise of stock options	17	216,577	43,092,813	(6,092,936)	-	-	37,216,454	947,122	38,163,576
Share-based compensation	18	-	-	6,901,879	-	-	6,901,879	7,261,855	14,163,734
Conversion of convertible bonds	17	595,184	140,621,265	-	-	-	141,216,449	-	141,216,449
Conversion of exchangeable bonds	17	-	262,871,570	(30,832,325)	-	-	232,039,245	-	232,039,245
Cash dividends		-	-	-	-	(10,412,621)	(10,412,621)	-	(10,412,621)
Change in ownership interest		-	141,612,414	-	-	-	141,612,414	152,717,508	294,329,922
Change in scope of consolidation		-	-	-	-	-	-	7,329,399	7,329,399
Total transactions with equity holders:		811,761	588,198,062	(30,023,382)	-	(10,412,621)	548,573,820	168,255,884	716,829,704
Balance at June 30, 2020		₩ 43,973,079	5,631,396,677	(22,785,143)	(24,501,925)	377,922,999	6,006,005,687	695,464,044	6,701,469,731

See accompanying notes to the condensed consolidated interim financial statements.

KAKAO CORP. AND SUBSIDIAIRIES

Condensed Consolidated Interim Statements of Cash Flows

For the six-month periods ended June 30, 2020 and 2019

(Unaudited)

(In thousands of won)	Notes		June 30, 2020	June 30, 2019
Cash flows from operating activities				
Cash flows generated from operating activities	22	₩	338,583,415	334,825,420
Interest received			11,633,231	23,631,612
Interest paid			(6,641,169)	(3,644,739)
Dividend received			13,948,437	-
Income tax paid			(79,425,790)	(68,081,068)
Net cash provided by operating activities			278,098,124	286,731,225
Cash flows from investing activities				
Decrease (increase) in short-term financial instruments			(221,096,898)	432,903,259
Increase in long-term financial instruments			(110,653)	(929,563)
Purchase of property and equipment			(48,572,437)	(52,761,988)
Disposal of property and equipment			3,394,902	1,690,004
Purchase of intangible assets			(21,484,995)	(39,376,572)
Disposal of intangible assets			5,185,663	4,569,127
Acquisition of financial assets at fair value through profit or loss			(348,643,459)	(225,314,739)
Disposal of financial assets at fair value through profit or loss			78,811,527	102,446,575
Acquisition of financial assets at fair value through other comprehensive income			(66,351,862)	(1,010,165)
Disposal of financial assets at fair value through other comprehensive income			67,583,687	-
Acquisition of associates and joint ventures			(59,062,169)	(20,447,340)
Disposal of associates and joint ventures			85,914,056	16,645,895
Acquisition of subsidiaries and change in scope of consolidation, net of cash acquired			(166,723,798)	(5,902,088)
Disposal of subsidiaries and change in scope of consolidation, net of cash acquired			(39,966,552)	(37,319,918)
Increase in other non-current financial assets			(14,247,238)	(2,395,583)
Decrease in other non-current financial assets			6,805,784	-
Increase in short-term loans			(954,264)	(948,433)
Increase in long-term loans			(1,046,563)	(204,080)
Other cash outflow from investing activities			(8,634,115)	(1,335,945)
Net cash provided by (used in) investing activities			(749,199,384)	170,308,446
Cash flows from financing activities				
Proceeds from short-term borrowings	14		62,564,399	309,865,531
Repayments of short-term borrowings	14		(5,138,501)	(414,661,852)
Payments of lease liabilities	13		(32,720,476)	(21,825,435)
Proceeds from long-term borrowings	14		33,000,615	8,839,760
Repayments of long-term borrowings	14		(12,981,408)	(6,022,764)
Exercise of stock options			38,123,461	6,623,066
Dividends paid			(10,412,621)	(10,252,572)
New shares issued by subsidiaries (to non-controlling interest shareholders)			311,993,241	30,115,755
Stock issuance costs			-	(399,443)
Other cash outflow from financing activities			(464,350)	-
Net cash provided by (used in) financing activities			383,964,360	(97,717,954)
Net increase (decrease) in cash and cash equivalents			(87,136,900)	359,321,717
Cash and cash equivalents at January 1			1,918,225,199	1,247,013,250
Effect of exchange rate changes			7,196,627	10,919,422
Cash and cash equivalents at June 30		₩	1,838,284,926	1,617,254,389

See accompanying notes to the condensed consolidated interim financial statements.

1. General Information

Kakao Corp. (the "Parent Company") has prepared the consolidated interim financial statements in accordance with Korean International Financial Reporting Standards ("K-IFRS") No. 1110, Consolidated Financial Statements, and its consolidated subsidiaries include Daum Global Holdings and 110 entities.

(1) Description of the Parent Company

The Parent Company was incorporated in February 1995 to develop computer programs and to provide internet services and engages in providing mobile internet services such as online advertising and transaction services, mobile messenger, application and mobile platform development.

The Parent Company was listed on the KOSDAQ market in Korea on November 9, 1999 and was transferred to the KOSPI market in Korea on July 10, 2017.

The Parent Company's headquarters is located in Youngpyong-dong, Jeju City, in Jeju Province, Korea. As of June 30, 2020, the Parent Company's share capital amounted to ₩ 43,973 million and the Parent Company's shareholders are as follows:

	Number of shares (in shares)	Percentage of ownership
Kim Bum Soo	12,503,461	14.2%
K Cube Holdings Co., Ltd.	9,939,467	11.3%
National Pension Service	8,688,086	9.9%
MAXIMO PTE. LTD.	5,599,849	6.4%
Other related parties	177,976	0.2%
Treasury shares	2,489,934	2.8%
Others	48,447,385	55.2%
Total	87,846,158	100.0%

(2) Consolidated subsidiaries

Except for the subsidiaries that are newly included in or excluded from the scope of consolidation during the six-month period ended June 30, 2020, the consolidated subsidiaries and percentage of ownership as of June 30, 2020 are not materially different from those disclosed in the 2019 annual financial statements.

(3) Changes in scope of consolidation

1) Subsidiaries that were newly included in consolidation during the six-month period ended June 30, 2020, are as follows:

(in thousands of won)

	Share capital	Primary business	Location	Fiscal year end	Number of shares (in shares)	Percentage of ownership (%)
Kakaopay Securities Corp.	₩ 24,820,000	Financial services	Korea	December	2,978,400	60.0
XL Games, Inc.	4,328,341	Game development and services	Korea	December	4,585,703	52.9
B Media Co., Ltd.	500,000	Books, online e-books and magazine publications	Korea	December	50,000	100.0
U-Camp Corp.	30,000	Proxy driving services agency	Korea	December	60,000	100.0

1. General Information, Continued

(3) Changes in scope of consolidation, continued

1) Subsidiaries that were newly included in consolidation during the six-month period ended June 30, 2020, are as follows, continued:

(in thousands of won)

	Share capital	Primary business	Location	Fiscal year end	Number of shares (in shares)	Percentage of ownership (%)
GLOHOW HOLDINGS PTE. LTD.	₩ 1,668,985	Development and provision of game software	Singapore	December	14,001	54.9
GLOHOW Co., Ltd.	101,866	Development and provision of game software	Thailand	December	26,198	99.9
Remote Monster Corp.	26,529	Provision of internet- and web-based communication and broadcasting solutions	Korea	December	53,057	100.0
LOGOS FILM Co.	50,000	Drama production etc.	Korea	December	10,000	100.0
STORY&PICTURES MEDIA Corp.	100,000	Broadcasting program production	Korea	December	20,000	100.0
Wind Pictures Corp.	100,000	Drama production etc.	Korea	December	20,000	100.0

2) The reasons why the aforementioned subsidiaries are newly included in consolidation during the six-month period ended June 30, 2020, are as follows:

	Reason
Kakaopay Securities Corp.	Classified to a subsidiary through acquisition of control
XL Games, Inc.	Included in consolidation through acquisition of control
B Media Co., Ltd.	Newly established through corporate spinoff
U-Camp Corp.	Newly established
GLOHOW HOLDINGS PTE. LTD.	Reclassified from an associate to a subsidiary through acquisition of additional shares above 50% percentage of ownership
GLOHOW Co., Ltd.	Classified to a subsidiary through acquisition of control
Remote Monster Corp.	Classified to a subsidiary through acquisition of control
LOGOS FILM Co.	Classified to a subsidiary through acquisition of control
STORY&PICTURES MEDIA Corp.	Classified to a subsidiary through acquisition of control
Wind Pictures Corp.	Classified to a subsidiary through acquisition of control

3) Subsidiaries that were excluded from consolidation during the six-month period ended June 30, 2020, are as follows:

	Reason
Stagefive Co., Ltd.	Reclassified to an associate due to loss of control
Buzzpia Co., Ltd.	Excluded from consolidation due to liquidation

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the periods presented, unless otherwise stated.

(1) Basis of preparation

The condensed consolidated interim financial statements of the Parent Company and its subsidiaries (collectively referred to as the "Group") have been prepared in accordance with K-IFRS No. 1034 *Interim Financial Reporting*. These condensed consolidated interim financial statements are prepared in accordance with K-IFRSs which are effective as of June 30, 2020. During the six-month period ended June 30, 2020, the Group newly acquired Kakaopay Securities Corp., which engages in financial services business. Accordingly, assets and liabilities for non-financial services and financial services business are separately presented in financial statements.

- New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for their annual and interim reporting period commencing January 1, 2020.

1) Amendments to K-IFRS No. 1001 *Presentation of Financial Statements* and K-IFRS No. 1008 *Accounting Policies, Changes in Accounting Estimates and Errors* – Definition of Material

The amendments clarified the definition of materiality and amended K-IFRS No. 1001 and K- IFRS No, 1008 in accordance with the clarified definitions. Materiality is assessed by reference to omission or misstatement of material information as well as effects of immaterial information, and to the nature of the users when determining the information to be disclosed by the Group. The Group does not expect that these amendments have a significant impact on the financial statements.

2) Amendments to K-IFRS No. 1103 *Business Combinations* – Definition of a Business

To consider the integration of the required activities and assets as a business, the amended definition of a business requires an acquisition to include an input and a substantive process that together significantly contribute to the ability to create outputs and excludes economic benefits from the lower costs. An entity can apply a concentration test, an optional test, where substantially all of the fair value of gross assets acquired is concentrated in a single asset or a group of similar assets, the assets acquired would not represent a business. The Group does not expect that these amendments have a significant impact on the financial statements.

3) Amendments to K-IFRS No. 1109 *Financial Instruments*, K-IFRS No. 1039 *Financial Instruments: Recognition and Measurements*, K-IFRS No. 1107 *Financial Instruments: Disclosures* – Interest Rate Benchmark Reform

Under the amendments, when there is uncertainty as to the transition for replacing existing interest rate benchmark, exceptions may be applied for determining a forecast transaction regarding hedge accounting requirements. Specifically, when determining whether a forecast transaction is highly probable and whether the hedge is expected to be highly effective, an entity assumes the interest rate benchmark on which the hedged cash flows are based is not altered as a result of interest rate benchmark reform. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

4) Amendments to References to Conceptual Framework in K-IFRS Standards

The amendments set out new concepts for measurement, presentation and disclosures, and derecognition and update definitions and basis of recognition for assets and liabilities, and clarify fiduciary responsibility, uncertainty in measurements, and priority in substance. The Group does not expect that these amendments have a significant impact on the consolidated financial statements.

2. Significant Accounting Policies, Continued

(1) Basis of preparation, continued

- New standards and interpretations not yet adopted by the Group

The following new standards, interpretations and amendments to existing standards have been published and are not mandatory for the Group for reporting periods beginning January 1, 2020, and the Group has not early adopted them.

- Amendment to K-IFRS No. 1116 *Leases* – practical expedient for forgiveness, concession, waiver of rent payments

The amendment permits lessees, as a practical expedient, not to assess whether rent concessions that occur as a direct consequence of the COVID-19 pandemic are lease modifications. If changes in lease payments due to rent concession are not lease modifications, lessees applying the practical expedient shall account for rent concessions consistent with approach that are already specified by the standard. The amendment is effective from annual reporting periods beginning after June 1, 2020, with early adoption permitted. The Group does not expect that these amendments will have a significant impact on the consolidated financial statements.

(2) Significant accounting policies

Significant accounting policies and basis of measurement used in the preparation of the condensed consolidated interim financial statements are consistent with those of the consolidated financial statements for the year ended December 31, 2019, except for the changes due to the application of amendment and enactments of standards and interpretations described in Note 2 (1) and the following.

- Income tax expense

Income tax expense for the interim period is recognized based on management's best estimate of the annual effective tax rate expected for the full financial year. The estimated average annual effective tax rate is applied to the pre-tax income.

3. Critical Accounting Estimates and Assumptions

The preparation of financial statements requires the Group to make estimates and assumptions concerning the future. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, differ from the actual results.

Critical accounting estimates and assumptions applied in the preparation of these condensed consolidated interim financial statements are the same as those applied to the consolidated financial statements as of and for the year ended December 31, 2019, except for the estimates used to determine income tax expense.

- Impact of COVID-19 pandemic on the Group

Due to global outbreak of COVID-19, governments of each country are taking measures such as factory shutdowns, shelter-in-place orders, restrictions on travel and public transport etc. The ultimate impact of COVID-19 pandemic on the Group's operation is uncertain and it will change in accordance with the circumstances happening afterwards. The Group is unable to estimate the magnitude and duration of COVID-19. In addition, the Group's operations can be suspended and operational results can be negatively impacted due to protective measures taken by the government or the Group. Although it is unable to reasonably estimate the financial impact, the management expects that the Group's operational segments can be negatively impacted by the pandemic. The Group is not yet able to estimate the magnitude and duration of COVID-19 impact on the Group's operations.

4. Fair Value

(1) There are no significant changes in the business and economic environments that affect the fair value of financial assets and liabilities of the Group for the six-month period ended June 30, 2020.

(2) To provide an indication about the reliability of the inputs used in determining fair value, the Group classifies its financial instruments into the three levels prescribed under the accounting standards.

Financial instruments that are measured at fair value are categorized by the fair value hierarchy, and the defined levels are as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs)

The following table presents the Group's financial assets and financial liabilities based on the fair value hierarchy as of June 30, 2020 and December 31, 2019:

(A) Non-financial services business

1) June 30, 2020

(*In thousands of won*)

		June 30, 2020			
		Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩	42,488,687	271,694,670	147,816,785	462,000,142
Financial assets at fair value through other comprehensive income (*1,2)		318,655,124	-	95,554,931	414,210,055
Derivative financial assets		-	-	1,111,592	1,111,592
Total financial assets	₩	361,143,811	271,694,670	244,483,308	877,321,789
Derivative financial liabilities	₩	-	-	35,037,459	35,037,459

(*1) During the six-month period ended June 30, 2020, the Group disposed all shares of HANJINKAL.
(*2) During the six-month period ended June 30, 2020, the Group acquired 1,919,300 shares of Kadokawa Corporation, a Japanese contents company.

2) December 31, 2019

(*In thousands of won*)

		December 31, 2019			
		Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩	21,357,334	-	155,303,474	176,660,808
Financial assets at fair value through other comprehensive income (*1,2,3)		331,440,655	-	87,824,829	419,265,484
Derivative financial assets		-	-	1,111,592	1,111,592
Total financial assets	₩	352,797,989	-	244,239,895	597,037,884
Derivative financial liabilities	₩	-	-	25,661,680	25,661,680

(*1) During 2019, the Group acquired shares of SK TELECOM CO.,LTD and HANJINKAL, and categorized them as Level 1.

4. Fair Value, Continued

(2) The following table presents the Group's financial assets and financial liabilities measured and recognized at fair value as of June 30, 2020 and December 31, 2019, continued:

(*2) During 2019, the Group recognized valuation loss for ITOXI Corp. (formerly, YD Online Corp.) as the carrying amount exceeded the recoverable amount.
(*3) KakaoBank Corp. (formerly, KakaoBank Corp. of Korea), which was classified as financial assets at fair value through other comprehensive income as at December 31, 2018, was reclassified as investments in associates considering potential voting rights under the notice of exercise of the call option in 2019.

There were no transfers between levels for the six-month periods ended June 30, 2020 and for the year ended December 31, 2019.

(B) Financial services business

(*In thousands of won*)

	June 30, 2020			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩ -	-	289,836,090	289,836,090
Financial assets at fair value through other comprehensive income	-	-	200,000	200,000
Total financial assets	₩ -	-	290,036,090	290,036,090

(3) Valuation technique and inputs

The following tables show the valuation techniques used in measuring Level 3 fair values as of June 30, 2020, as well as the significant inputs used.

(A) Non-financial services business

(*In thousands of won*)

	Fair value	**Level**	**Valuation technique**	**Inputs**
Financial assets at fair value through profit or loss				
Compound financial instruments	₩ 271,694,670	2	Market approach	Market value
Compound financial instruments	74,754,384	3	Binomial tree model, net asset value method and others	Net asset value, risk neutral probability, risk neutral increase rate, risk neutral decrease rate and others
Beneficiary securities and fund	73,062,401	3		
Total	₩ 419,511,455			
Financial assets at fair value through other comprehensive				
Unlisted equity securities	₩ 95,554,931	3	Discounted cashflows, net asset value method and others	Net asset value, discount rate, estimated cash flows and others
Derivative financial assets and liabilities				
Derivative financial assets	₩ 1,111,592	3	Binomial tree Model and others	Risk neutral probability, risk neutral increase rate, risk neutral decrease rate and others
Derivative financial liabilities	₩ 35,037,459			

4. Fair Value, Continued

(3) Valuation technique and inputs, continued

(B) Financial services business

(*In thousands of won*)

	Fair value	Level	Valuation technique	Inputs
Financial assets at fair value through profit or loss				
Beneficiary securities and fund	₩ 289,836,090	3	Discounted cashflows, net asset value method and others	Price of the underlying asset, net asset value and others
Financial assets at fair value through other comprehensive				
Others	₩ 200,000	3	Cost approach	Acquisition cost

(4) Valuation processes and sensitivity analysis for fair value measurements categorized within level 3

The Group performs the fair value measurements required for financial reporting purposes, including level 3 fair values. The Group reports to the Chief Financial Officer ("CFO") and the Audit Committee, and discusses valuation processes and results with CFO and Audit Committee at least once every quarter depending on the materiality.

The results of the sensitivity analysis for the effect on profit or loss (before income tax) or other comprehensive income (before income tax) from changes in the amount of fair value (1%) of Level 3 financial instruments for the six -month period ended June 30, 2020, are as follows:

(A) Non-financial services business

(*In thousands of won*)

	June 30, 2020	
	Favorable changes	Unfavorable changes
Financial assets at fair value through profit or loss	₩ 4,195,115	(4,195,115)
Financial assets at fair value through other comprehensive income	955,549	(955,549)
Derivative financial assets	11,116	(11,116)
Total financial assets	5,161,780	(5,161,780)
Derivative financial liabilities	350,375	(350,375)
Total	₩ 350,375	(350,375)

(B) Financial services business

(*In thousands of won*)

	June 30, 2020	
	Favorable changes	Unfavorable changes
Financial assets at fair value through profit or loss	₩ 2,898,361	(2,898,361)
Financial assets at fair value through other comprehensive income	2,000	(2,000)
Total financial assets	₩ 2,900,361	(2,900,361)

5. Segment Information

(1) The Group is operated as a single operating segment. The financial information reported to the chief operating decision-maker is consistent with the disclosed consolidated financial statements.

(2) Breakdown of the Group's revenue for the three-month and six-month periods ended June 30, 2020 and 2019, is as follows:

1) For six-month period ended June 30, 2020

(*In thousands of won*)

		June 30, 2020		
		Platform (*)	**Contents**	**Total**
Revenue	₩	1,161,270,022	1,056,406,287	2,217,676,309
Inter-company revenue		(226,754,491)	(169,691,732)	(396,446,223)
Net revenue	₩	934,515,531	886,714,555	1,821,230,086

(*) Platform revenue includes revenue related to financial services business amounting to ₩ 16,552 million.

2) For three-month period ended June 30, 2020

(*In thousands of won*)

		June 30, 2020		
		Platform (*)	**Contents**	**Total**
Revenue	₩	636,482,541	534,430,070	1,170,912,611
Inter-company revenue		(143,792,060)	(74,267,496)	(218,059,556)
Net revenue	₩	492,690,481	460,162,574	952,853,055

(*) Platform revenue includes revenue related to financial services business amounting to ₩ 13,644 million.

3) For six-month period ended June 30, 2019

(*In thousands of won*)

		June 30, 2019		
		Platform	**Contents**	**Total**
Revenues	₩	803,375,712	943,924,949	1,747,300,661
Inter-company revenues		(163,426,294)	(144,526,667)	(307,952,961)
Net revenues	₩	639,949,418	799,398,282	1,439,347,700

4) For three-month period ended June 30, 2019

(*In thousands of won*)

		June 30, 2019		
		Platform	**Contents**	**Total**
Revenue	₩	411,074,278	475,955,416	887,029,694
Inter-company revenue		(84,238,713)	(69,755,699)	(153,994,412)
Net revenue	₩	326,835,565	406,199,717	733,035,282

(3) Geographical information

For the six-month periods ended June 30, 2020 and 2019, most of the Group's revenue is derived in Korea, and most of non-current assets held by the Group as of June 30, 2020 and December 31, 2019 are located in Korea.

(4) There are no external customers with revenue amounting to 10 percent or more of the Group's revenues for the six-month periods ended June 30, 2020 and 2019.

6. Financial Instruments by Category

(A) Non-financial services business

(1) Carrying amounts of financial assets and liabilities by category as of June 30, 2020 and December 31, 2019, are as follows:

1) Financial assets

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Financial assets at fair value through profit or loss	₩	462,000,142	176,660,808
Financial assets at fair value through other comprehensive income		414,210,055	419,265,484
Financial assets at amortized costs			
Cash and cash equivalents		1,812,572,517	1,918,225,199
Trade receivables, net		146,669,089	157,220,905
Short-term financial instruments		476,786,539	207,766,855
Long-term financial instruments		10,172,667	50,061,893
Other current financial assets		258,739,683	252,486,445
Other non-current financial assets		111,216,565	92,354,874
Sub-total		2,816,157,060	2,678,116,171
Derivative financial assets		1,111,592	1,111,592
Total	₩	3,693,478,849	3,275,154,055

2) Financial liabilities

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Financial liabilities at amortized costs			
Trade and other payables	₩	644,112,593	578,566,878
Short-term borrowings		195,603,934	448,595,787
Deposits received		286,387,761	299,564,327
Other current financial liabilities		31,526,628	25,256,212
Non-current trade and other payables		51,393,406	32,872,443
Long-term borrowings		38,644,951	72,269,299
Other non-current financial liabilities (*)		62,340,935	62,843,093
Sub-total		1,310,010,208	1,519,968,039
Derivative financial Liabilities			
Current derivative financial liabilities		21,190,905	18,290,148
Non-current derivative financial liabilities		13,846,554	7,371,532
Sub-total		35,037,459	25,661,680
Total	₩	1,345,047,667	1,545,629,719

(*) As of June 30, 2020, the Group recognized non-controlling interests as financial liabilities for funds with maturity amounting to ₩ 44,339 million (as of December 31, 2019: ₩ 46,236 million).

6. Financial Instruments by Category, Continued

(A) Non-financial services business, continued

(2) Gains or losses of financial instruments by category for the six-month periods ended June 30, 2020 and 2019 are as follows:

1) June 30, 2020
(*In thousands of won*)

	June 30, 2020					
	Loss on valuation (other comprehensive income, net of tax)	**Loss on valuation / disposal (profit or loss)**	**Interest income (expenses)**	**Dividend income**	**Impairment loss**	**Gain (loss) on foreign currency translation**
Financial assets						
Financial assets at fair value through profit or loss	₩ -	8,932,998	24,699	1,542,704	-	-
Financial assets at fair value through other comprehensive income	8,903,650	(249,172)	-	11,555,836	-	-
Financial assets at amortized costs and other financial assets	-	-	11,610,440	-	477,875	14,480,017
Financial liabilities						
Financial liabilities at amortized costs and other financial liabilities	-	-	(1,608,435)	-	-	(221,691)
Derivative financial liabilities	-	(1,263,774)	-	-	-	-

2) June 30, 2019
(*In thousands of won*)

	June 30, 2019					
	Loss on valuation (other comprehensive income)	**Loss on valuation / disposal (profit or loss)**	**Interest income (expenses)**	**Dividend income**	**Impairment loss**	**Gain (loss) on foreign currency translation**
Financial assets						
Financial assets at fair value through profit or loss	₩ -	(1,099,956)	-	348	-	-
Financial assets at fair value through other comprehensive income	(4,947,536)	-	-	-	-	-
Financial assets at amortized costs and other financial assets	-	-	17,167,404	-	551,855	15,588,711
Derivative financial assets	-	(1,173,466)	-	-	-	-
Financial liabilities						
Financial liabilities at amortized costs and other financial liabilities	-	-	(6,244,644)	-	-	(2,122,391)
Derivative financial liabilities	-	57,689	-	-	-	-

6 Financial Instruments by Category, Continued

(B) Financial services business

(1) Carrying amounts of financial assets and liabilities by category as of June 30, 2020 are as follows:

1) Financial assets

(*In thousands of won*)

		June 30, 2020
Financial assets at fair value through profit or loss	₩	289,836,090
Financial assets at fair value through other comprehensive income		200,000
Financial assets at amortized costs		
Cash and cash equivalents		25,712,409
Deposits		8,505,891
Other financial assets		95,861,325
Sub-total		130,079,625
Total	₩	420,115,715

2) Financial liabilities

(*In thousands of won*)

		June 30, 2020
Financial liabilities at amortized costs		
Deposits received	₩	282,493,110
Other financial liabilities		98,990,487
Total	₩	381,483,597

(2) Gains or losses of financial instruments by category for the six-month period ended June 30, 2020 are as follows:

(*In thousands of won*)

		Loss on valuation / disposal (profit or loss)	**Interest income (expenses)**
Financial assets			
Financial assets at fair value through profit or loss	₩	1,889,472	777,645

7. Financial Assets

(A) Non-financial services business

(1) Financial assets at fair value through profit or loss and derivative financial assets

1) Financial assets at fair value through profit or loss and derivative financial assets include the following classes of financial assets:

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Financial assets at fair value through profit or loss			
Non-current assets:			
Beneficiary securities and fund	₩	63,659,373	60,942,674
Listed shares		42,045,617	20,924,635
NEPTUNE Corp.		19,180,916	20,924,635
COM2US Corp.		15,131,592	-
Webzen Inc.		7,733,109	-
Compound financial instruments		73,274,383	45,281,025
Sub-total		178,979,373	127,148,334
Current assets:			
Beneficiary securities and fund		27,127,914	6,526,589
Listed shares		443,070	432,699
Studiodragon Corp.		415,570	390,019
SHOWBOX Corp.		27,500	42,680
Compound financial instruments		255,449,785	42,553,186
Sub-total		283,020,769	49,512,474
Total	₩	462,000,142	176,660,808
Derivative financial assets			
Derivative financial assets	₩	1,111,592	1,111,592

2) The amounts recognized in profit or loss for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Gain (loss) on financial assets at fair value through profit or loss	₩	10,500,401	(1,099,608)
Loss on derivative financial assets		-	(1,173,466)

(2) Financial assets at fair value through other comprehensive income

1) Financial assets at fair value through other comprehensive income include the following classes of financial assets:
(*In thousands of won*)

		June 30, 2020	December 31, 2019
Non-current assets			
Listed shares	₩	318,655,124	331,440,655
FNC ENTERTAINMENT		4,036,500	5,473,000
SK TELECOM CO., LTD.		267,256,820	301,455,560
Kadokawa Corporation(*1)		47,360,389	-
HANJINKAL. (*2)		-	24,510,800
Action Square Co., Ltd.		1,415	1,295
Unlisted shares		95,554,931	87,824,829
Total	₩	414,210,055	419,265,484

7. Financial Assets, Continued

(A) Non-financial services business, continued

(2) Financial assets at fair value through other comprehensive income, continued

(*1) During the six-month period ended June 30, 2020, the Group acquired 1,919,300 shares of Kadokawa Corporation, a Japanese contents company.
(*2) During the six-month period ended June 30, 2020, the Group disposed all shares of HANJINKAL.

2) The amounts recognized in profit or loss for the six-month periods ended June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Gain (loss) on financial assets at fair value through other comprehensive income(*)	₩	11,306,664

(*) Includes the amount of incidental costs recognized for disposal of financial instruments at fair value through other comprehensive income during the six-month period ended June 30, 2020.

Upon disposal of these equity investments, any balance within the accumulated other comprehensive income for these equity investments is reclassified to retained earnings and is not reclassified to profit or loss.

(3) Trade receivables, other current financial assets and other non-current financial assets

1) Trade receivables and allowance for doubtful accounts as of June 30, 2020 and December 31, 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	**December 31, 2019**
Trade receivables	₩	151,673,524	162,404,482
Less: allowance for doubtful accounts		(5,004,435)	(5,183,577)
Trade receivables, net	₩	146,669,089	157,220,905

There is no collateral held by the Group in respect of these receivables.

7. Financial Assets, Continued

(A) Non-financial services business, continued

(3) Trade receivables, other current financial assets and other non-current financial assets, continued

2) Details of other current financial assets, other non-current financial assets, and allowance for doubtful accounts as of June 30, 2020 and December 31, 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Other current financial assets			
Non-trade receivables	₩	259,343,114	239,437,776
Accrued revenues		3,329,545	2,132,074
Short-term loans receivable		6,504,674	21,708,617
Short-term loans to employees		102,211	177,100
Others		29,415	32,897
Sub-total		269,308,959	263,488,464
Other non-current financial assets			
Long-term non-trade receivables		42,332,349	39,832,349
Long-term accrued revenues		575,127	209,137
Long-term loans receivable		20,435,763	19,359,493
Leasehold deposits		79,942,880	65,342,726
Long-term loans to employees		171,760	202,794
Others		413,753	63,440
Sub-total		143,871,632	125,009,939
Total	₩	413,180,591	388,498,403
Less: allowance for doubtful accounts		(43,224,343)	(43,657,083)
Other current financial assets and other non-current financial assets, net	₩	369,956,248	344,841,320

(B) Financial services business

(1) Financial assets at fair value through profit or loss

1) Financial assets mandatorily measured at fair value through profit or loss include the following classes of financial assets:

(*In thousands of won*)

		June 30, 2020
Financial assets at fair value through profit or loss		
Equity securities	₩	2,623,000
Others (money in trust etc.)		287,213,090
Total	₩	289,836,090

2) The amounts recognized in profit or loss are as follows:

(*In thousands of won*)

		June 30, 2020
Gain on financial assets at fair value through profit or loss	₩	2,667,117

7. Financial Assets, Continued

(B) Financial services business, continued

(2) Financial assets at fair value through other comprehensive income

(*In thousands of won*)

		June 30, 2020
Others	₩	200,000

Upon disposal of these equity investments, any balance within the accumulated other comprehensive income for these equity investments is reclassified to retained earnings and is not reclassified to profit or loss.

(3) Other financial assets

(*In thousands of won*)

		June 30, 2020
Other financial assets		
Non-trade receivables	₩	93,451,691
Accrued revenues		185,911
Leasehold deposits		2,488,722
Total	₩	96,126,324
Less: allowance for doubtful accounts		(264,999)
Other financial assets, net	₩	95,861,325

8. Contract Assets and Liabilities

(1) Details of incremental costs of obtaining a contract (other current assets and other non-current assets), costs to fulfil a contract (other non-current assets), contract assets (other current assets) and contract liabilities (other current liabilities and non-current liabilities), recognized in relation to contracts with customers, as of June 30, 2020 and December 31, 2019, are as follows:

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Contract assets			
Contract assets – platform	₩	614,723	2,851,223
Contract assets – contents		817,923	281,349
Total	₩	1,432,646	3,132,572
Incremental costs			
Incremental costs – platform	₩	390,335	376,388
Incremental costs – contents		6,683,602	6,840,732
Total	₩	7,073,937	7,217,120
Costs to fulfil a contract			
Costs to fulfil a contract - platform	₩	10,081,963	6,542,994
Costs to fulfil a contract - contents		21,933,015	18,284,578
Total	₩	32,014,978	24,827,572
Contract liabilities			
Contract liabilities – platform	₩	127,117,881	116,753,279
Contract liabilities – contents		194,015,067	167,016,822
Total	₩	321,132,948	283,770,101

8. Contract Assets and Liabilities, Continued

(2) Significant changes in incremental costs and contract liabilities

Contract liabilities of the Group consist of deferred income from the payment amount for game goods that were not used, permanent items, paid platform goods and cryptocurrency ("Klaytn") issued as of the end of the reporting period. Costs to fulfil a contract are the capitalized commission fees. Incremental costs are the capitalized fees paid to the open market (app market) and fees related to the sales of cryptocurrency.

Although the amount of incremental costs of obtaining a contract as of June 30, 2020 decreased compared to December 31, 2019, due to consumption of unused paid game goods, permanent items and paid platforms, the amount of decrease is not significant. The amount of costs to fulfil a contract as of June 30, 2020 increased compared to December 31, 2019 due to advance payments paid to certain contents production companies that are included in the scope of consolidation during the six-month period ended June 30, 2020, but the amount of increase is not significant. The amount of contract liabilities as of June 30, 2020 increased compared to December 31, 2019 due to increase in deferred revenues from certain paid game goods and paid platform goods, but the amount of increase is not significant.

(3) Expenses and revenue recognized in relation to contract assets and contract liabilities

The following table presents the amount of the revenue and expenses recognized with respect to carried-forward contract assets and contract liabilities for the six-month periods ended June 30, 2020 and 2019.

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Expenses recognized that were included in the contract liability balance at the beginning of the period			
Incremental costs - contents	₩	6,710,188	3,818,685
Revenues recognized that were included in the contract liability balance at the beginning of the period			
Contract liabilities - platform	₩	59,217,517	43,856,930
Contract liabilities – contents		129,598,008	102,280,198
Total	₩	188,815,525	146,137,128

(4) Classification of revenue from contracts with customers

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Timing of revenue recognition			
At a point in time	₩	987,863,826	890,458,201
Over time		833,366,260	548,889,499
Total	₩	1,821,230,086	1,439,347,700

9. Investments in Associates and Joint Venture

(1) Investments in associates and joint venture as of June 30, 2020 and December 31 2019, are as follows:

(*In thousands of won*)

		June 30, 2020				December 31, 2019
Name (*1)	**Location**	**Percentage of ownership**	**Acquisition cost**	**Net asset value**	**Book value**	**Book value**
Associates						
Adcredit (*3)	Korea	17.7%	₩ 314,303	147,813	147,813	93,103
DMS Network, Inc. (*3)	USA	19.7%	1,986,836	-	-	-
Tapas Media, Inc. (*3)	USA	19.8%	2,101,400	1,026,228	1,026,229	1,125,010
NBT Inc. (*3)	Korea	10.4%	1,781,992	1,864,139	1,864,139	1,220,289
DAUM Venture Fund	Korea	39.5%	7,179,873	10,252,780	10,252,780	9,663,583

9. Investments in Associates and Joint Venture, Continued

(1) Investments in associates and joint venture as of June 30, 2020 and December 31, 2019 are as follows, continued:

(*In thousands of won*)		June 30, 2020				December 31, 2019
Name (*1)	**Location**	**Percentage of ownership**	**Acquisition Cost**	**Net asset value**	**Book value**	**Book value**
Associates						
Dunamu Inc.	Korea	22.4%	₩ 4,480,264	56,957,251	61,923,995	59,384,555
Oscar Entertainment.	Korea	20.0%	1,997,334	(24,352)	-	-
CNT TECH CO., LTD. (*3)	Korea	18.0%	5,000,783	2,795,853	4,782,234	5,670,349
Korea Credit Data	Korea	28.6%	4,256,412	3,458,195	4,807,505	5,360,005
MANNACEA	Korea	23.8%	10,000,000	3,074,599	3,074,599	3,877,220
Left Right Co., Ltd.	Korea	40.0%	400,200	(22,224)	9,949	1,808
LUXROBO CO., LTD. (*3)	Korea	13.1%	5,287,152	1,784,976	5,642,004	6,080,620
Deleo Korea Co., Ltd. (*3)	Korea	9.0%	2,999,936	2,999,936	2,999,936	877,115
Skelter Labs, Inc.(*3)	Korea	15.5%	2,500,507	1,126,025	1,431,207	1,674,192
TOROOC Inc.	Korea	20.9%	2,499,989	116,828	500,559	845,136
DIGISONIC CO., LTD. (*3)	Korea	11.8%	100,000	103,635	103,983	51,837
D&C MEDIA CO.,LTD (*3)	Korea	18.2%	12,614,034	8,419,370	15,906,508	15,025,813
K Cube NEO Fund (*3)	Korea	15.5%	2,520,000	1,806,888	1,808,494	1,976,863
BUNJANG Corp. (*5)	Korea	-	-	-	-	279,730
Supergene Inc. (*10)	Korea	-	-	-	-	1,448,095
InnoSignal CO., LTD. (*3)	Korea	14.5%	100,000	122,751	166,201	165,011
CLAIR, Inc. (*3)	Korea	2.7%	500,000	424,476	424,475	586,196
KIF-Kakao Wooribank Technology Financing Fund (*3)	Korea	19.7%	15,000,000	13,850,733	13,850,733	13,603,435
13MILE.CO.LTD	Korea	31.7%	4,434,908	(932,623)	1,835,342	3,321,056
ADSOTA CORP.	Vietnam	49.0%	2,260,240	1,447,465	2,530,764	2,413,483
CARDOC Inc.	Korea	27.3%	6,381,351	185,812	5,953,588	3,895,401
YANADOO Co., Ltd.	Korea	27.1%	2,793,907	7,067,410	1,953,601	8,073,626
NOWBUSKING (*2,8)	Korea	26.0%	5,087,642	(68,662)	2,087,536	2,160,159
LINE WORK Corp.	Korea	35.5%	2,999,996	1,580,417	2,580,863	2,868,840
CHEQUER GLOBAL Inc.	USA	21.1%	400,000	7,119	307,399	453,345
Hasys co.,ltd	Korea	47.2%	17,729,213	1,671,927	14,524,661	15,418,639
Mycelebs (*3)	Korea	14.9%	5,000,000	-	5,000,000	5,038,067
DAIWAON. C. I. INC (*3)	Korea	19.8%	15,048,165	2,452,340	9,121,171	9,244,000
Haksan Publishing Co Ltd (*3)	Korea	19.8%	14,652,978	3,367,813	11,823,847	11,337,000
PEOPLEFUND COMPANY (*2,3)	Korea	11.5%	5,835,692	17,448	3,630,988	2,636,342
SEOUL MEDIA.INC.	Korea	22.2%	10,000,008	3,045,289	8,549,201	8,520,000
UBCARE CO., LTD. (*5)	Korea	-	-	-	-	40,227,709
GC Social Marketing Inc.	UK	27.3%	1,017,542	279,645	978,510	950,518
Imitation SPC Ltd.	Korea	49.0%	4,900	3,563	3,563	3,563
Sixshop	Korea	20.0%	2,000,000	1,497,854	1,510,417	1,987,013
TIDESQUARE	Korea	28.9%	26,464,484	24,446,280	20,022,319	18,827,883
Glohow Holdings PTE. LTE(*9)	Singapore	-	-	-	-	1,480,160
MOVILL Co.Ltd (*12)	Korea	70.0%	1,400,000	(1,303,062)	79,338	803,546
LEEJIGO CO.,LTD.	Korea	20.0%	100,000	96,270	96,270	97,507
G&G Enterprise Co.,Ltd (*3)	Korea	11.5%	2,924,190	4,351,295	4,351,295	3,059,902
KakaoBank Corp.	Korea	33.5%	621,105,200	581,763,538	633,127,677	615,559,220
KW Books, Inc.	Korea	20.0%	8,000,000	1,670,710	8,581,881	8,000,000

9. Investments in Associates and Joint Venture, Continued

(1) Investments in associates and joint venture as of June 30, 2020 and December 31, 2019 are as follows, continued:

(*In thousands of won*)

		Juen 30, 2020				December 31, 2019
Name (*1)	**Location**	**Percentage of ownership**	**Acquisition Cost**	**Net asset value**	**Book value**	**Book value**
Associates						
325 E&C	Korea	40.0%	₩ 2,400,000	169,291	2,284,481	2,400,000
UNION K-Culture Contents Investment Fund	Korea	33.3%	2,500,000	2,365,358	2,365,358	2,477,955
EDAM Entertainment Corp	Korea	40.0%	11,000,000	213,063	10,883,805	11,000,000
DAEYOUNG CHAEVI (*2,3)	Korea	14.3%	7,499,991	7,499,991	7,499,991	4,999,994
Ocean Drive Studio Co., Ltd.	Korea	20.8%	10,003,000	8,779,410	8,806,055	10,003,000
Un7qi3 Corp.	Korea	21.7%	2,831,201	327,458	2,921,092	2,703,402
Social bean (*3)	Korea	2.6%	999,261	832,480	832,480	960,808
DOZEN CO.,LTD (*3)	Korea	9.9%	495,000	81,764	532,664	495,000
KASA NETWORK PTE. LTD (*5)	Singapore	-	-	-	-	1,085,749
Super Comics (*2)	Korea	20.0%	2,000,000	397,631	2,005,090	-
Stage five Co., Ltd. (*6,11)	Korea	45.2%	97,948,470	13,616,969	97,551,871	-
Ad X Co. Ltd. (*2)	Korea	30.0%	17,159,239	2,675,183	17,253,757	-
Adlock Advertainment (*2,3)	Korea	12.8%	999,981	871,335	1,003,177	-
Second Dive (*2)	Korea	20.0%	9,999,600	2,318,531	9,864,805	-
Lionheart Studio(*2)	Korea	21.6%	22,225,296	22,225,296	22,225,296	-
KROSS PICTURES(*2)	Korea	49.0%	5,880,000	5,880,000	5,880,000	-
DGT mobility(*2)	Korea	26.8%	2,499,667	2,499,667	2,499,667	-
Others (59 companies)(*4)		3.4%~ 49.0%	39,604,179	(19,832,169)	24,691,436	30,086,698
Sub-total			1,075,306,316	793,855,006	1,088,474,599	961,599,550
Joint venture						
DAUM KAKAO PHILIPPINES CORP.	Philippine	50.0%	5,609,250	4,611,920	4,611,920	4,385,079
Asankakao Medical Data Co., Ltd.	Korea	50.0%	5,000,000	4,715,755	4,715,755	4,862,363
PINPLAY JAPAN Co., Ltd.(*7)	Japan	-	-	-	-	1,961,726
PHI digital healthcare Inc	Korea	50.0%	6,250,000	5,642,388	6,553,294	6,130,230
The Bridges of Madison County Co., Ltd	Korea	50.0%	5,000	(8,731)	5,000	5,000
Sub-total			16,864,250	14,961,332	15,885,969	17,344,398
Total			₩ 1,092,170,566	808,816,338	1,104,360,568	978,943,948

(*1) All investments in associates and joint venture are all unlisted securities excluding D&C MEDIA CO., LTD.
(*2) Newly or additionally acquired during the six-month period ended June 30, 2020.
(*3) Although the Group holds less than 20% of equity shares, the Group is considered to have a significant influence as the Group holds voting power to participate in the investee's Board of Directors.

9. Investments in Associates and Joint Venture, Continued

(1) Investments in associates and joint venture as of June 30, 2020 and December 31, 2019 are as follows, continued:

(*4) Small-sized entities invested by K Cube Venture Fund no.1, KAKAO Venture Fund, Kakao Digital Contents Fund, Kakao Game Growth Share Fund and KAKAO_CCVC Jeju Creative Economy Innovative Fund with the ownership percentage of 3.4%~49.0% are classified as associates as the Group is considered to have a significant influence over them.
(*5) Disposed during the six-month period ended June 30, 2020.
(*6) Reclassified from a subsidiary to an associate due to loss of control during the six-month period ended June 30, 2020.
(*7) Excluded from joint venture as it is reclassified as an associate of STAGEFIVE CO., LTD.
(*8) Acquired additional 4,662 shares by exercising call options and new capital contribution.
(*9) Reclassified to a subsidiary from an associate due to acquisition of additional shares during the six-month period ended June 30, 2020.
(*10) Reclassified to a financial instrument at fair value through profit or loss from an associate due to loss of significant influence during the six-month period ended June 30, 2020.
(*11) Partially disposed during the six-month period ended June 30, 2020.
(*12) In 2019, reclassified to an associate from a subsidiary due to the designation as a special company under Financial Law.

9. Investments in Associates and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows:

1) June 30, 2020

(*In thousands of won*)

	June 30, 2020								
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others(*1)**	**Ending balance**
Associates									
Adcredit	₩ 93,103	-	-	-	-	54,710	-	-	147,813
DMS Network, Inc.	-	-	-	-	-	-	-	-	-
Tapas Media, Inc	1,125,010	-	-	-	-	64,640	(79,154)	(84,267)	1,026,229
NBT Inc.	1,220,289	-	-	-	-	837,750	12,971	(206,871)	1,864,139
DAUM Venture Fund (*7)	9,663,583	-	-	(395,257)	-	973,373	11,081	-	10,252,780
Dunamu Inc. (*6)	59,384,555	-	-	(2,242,051)	-	4,595,091	(44,663)	231,063	61,923,995
CNT TECH CO.,LTD.	5,670,349	-	-	-	-	(855,961)	(32,154)	-	4,782,234
Korea Credit Data	5,360,005	-	-	-	-	(937,161)	411,071	(26,410)	4,807,505
MANNACEA	3,877,220	-	-	-	-	(805,060)	2,439	-	3,074,599
Left Right Co., Ltd.	1,808	-	-	-	-	8,141	-	-	9,949
LUXROBO Co., Ltd.	6,080,620	-	-	-	-	(438,616)	-	-	5,642,004
Deleo Korea Co.,Ltd.	877,115	-	-	-	-	2,122,821	-	-	2,999,936
Skelter Labs, Inc.	1,674,192	-	-	-	-	(1,510,195)	-	1,267,210	1,431,207
TOROOC Inc.	845,136	-	-	-	-	(344,577)	-	-	500,559
DIGISONIC Co., Ltd.	51,837	-	-	-	-	2,884	-	49,262	103,983
D&C MEDIA CO.,LTD.	15,025,813	-	-	-	-	880,129	566	-	15,906,508
K Cube NEO Fund	1,976,863	-	-	-	-	(171,538)	3,169	-	1,808,494
BUNJANG Corp. (*4)	279,730	-	-	(279,730)	-	-	-	-	-
Supergene Inc. (*10)	1,448,095	-	-	-	(498,337)	-	-	(949,758)	-
InnoSignal Co.,Ltd.	165,011	-	-	-	-	4,387	-	(3,197)	166,201
CLAIR, Inc	586,196	-	-	-	-	(161,721)	-	-	424,475
KIF-Kakao Wooribank Technology Financing Fund	13,603,435	-	-	-	-	277,153	(29,855)	-	13,850,733

9. Investments in Associates and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

1) June 30, 2020, continued

(*In thousands of won*)

	June 30, 2020								
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others(*1)**	**Ending balance**
Associates									
13MILE.CO.LTD	₩ 3,321,056	-	-	-	-	(1,485,714)	-	-	1,835,342
ADSOTA CORP	2,413,483	-	-	-	-	71,785	45,496	-	2,530,764
CARDOC Inc.	3,895,401	-	-	-	-	2,058,187	-	-	5,953,588
YANADOO Co., Ltd.	8,073,626	-	-	-	-	(4,749,097)	-	(1,370,928)	1,953,601
NOWBUSKING (*3)	2,160,159	-	2,087,536	-	-	(2,160,159)	-	-	2,087,536
LINE WORK Corp.	2,868,840	-	-	-	-	(287,977)	-	-	2,580,863
CHEQUER GLOBAL Inc.	453,345	-	-	-	-	(145,946)	-	-	307,399
Hasys Co., Ltd.	15,418,639	-	-	-	-	(1,281,596)	387,618	-	14,524,661
Mycelebs	5,038,067	-	-	-	-	(37,314)	(753)	-	5,000,000
DAIWAON. C. I. INC	9,244,000	-	-	-	-	(122,829)	-	-	9,121,171
Haksan Publishing Co., Ltd.	11,337,000	-	-	-	-	444,378	42,469	-	11,823,847
PEOPLEFUND COMPANY (*3)	2,636,342	-	1,999,993	-	-	866,992	-	(1,872,339)	3,630,988
SEOUL MEDIA.INC	8,520,000	-	-	-	-	29,201	-	-	8,549,201
UBCARE CO., LTD.(*4)	40,227,709	-	-	(40,103,560)	-	(81,630)	(42,519)	-	-
GC Social Marketing Inc.	950,518	-	-	-	-	17,540	10,452	-	978,510
Imitation SPC Ltd.	3,563	-	-	-	-	-	-	-	3,563
Sixshop	1,987,013	-	-	-	-	(476,799)	203	-	1,510,417
TIDESQUARE	18,827,883	-	-	-	-	1,273,292	(78,856)	-	20,022,319
Glohow Holdings PTE. LTD(*9)	1,480,160	(1,493,237)	-	-	-	(6,695)	19,772	-	-
MOVILL Co.Ltd	803,546	-	-	-	-	(724,208)	-	-	79,338
LEEJIGO CO.,LTD.	97,507	-	-	-	-	(1,237)	-	-	96,270
G&G Enterprise Co Ltd	3,059,902	-	-	-	-	1,291,393	-	-	4,351,295

9. Investments in Associates and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

1) June 30, 2020, continued

(*In thousands of won*)

	June 30, 2020								
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others(*1)**	**Ending balance**
Associates									
KakaoBank Corp.	₩ 615,559,220	-	-	-	-	12,840,383	4,728,074	-	633,127,677
KW Books, Inc.	8,000,000	-	-	-	-	581,881	-	-	8,581,881
325 E&C	2,400,000	-	-	-	-	(115,519)	-	-	2,284,481
Union K-Culture Contents IF	2,477,955	-	-	-	-	(112,597)	-	-	2,365,358
EDAM Entertainment Corp	11,000,000	-	-	-	-	(116,195)	-	-	10,883,805
DAEYOUNG CHAEVI(*3)	4,999,994	-	2,499,997	-	-	-	-	-	7,499,991
Ocean Drive Studio Co., Ltd	10,003,000	-	-	-	-	(1,322,048)	-	125,103	8,806,055
Un7qi3 Corp.	2,703,402	-	-	-	-	(336,215)	-	553,905	2,921,092
Social bean	960,808	-	-	-	-	(565,804)	-	437,476	832,480
DOZEN CO.,LTD	495,000	-	-	-	-	37,664	-	-	532,664
KASA NETWORK PTE.	1,085,749	-	-	(1,085,749)	-	-	-	-	-
Super Comics (*2)	-	-	2,000,000	-	-	5,090	-	-	2,005,090
Stage five Co., Ltd. (*5,8)	-	99,625,204	-	(1,676,734)	-	(396,599)	-	-	97,551,871
Ad X Co. Ltd. (*2)	-	-	17,159,240	-	-	94,517	-	-	17,253,757
Adlock Advertainment (*2)	-	-	999,981	-	-	3,196	-	-	1,003,177
Second Dive (*2)	-	-	9,999,600	-	-	(134,795)	-	-	9,864,805
Lionheart Studio(*2)	-	-	13,891,956	-	8,333,340	-	-	-	22,225,296
KROSS PICTURES (*2)	-	-	5,880,000	-	-	-	-	-	5,880,000
DGT mobility(*2)	-	-	2,499,667	-	-	-	-	-	2,499,667
Others (59 companies)	30,086,698	-	44,199	-	(2,209,489)	(3,665,161)	-	435,189	24,691,436

9. Investments in Associates and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

1) June 30, 2020, continued

(*In thousands of won*)

	June 30, 2020								
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others(*1)**	**Ending balance**
Associates									
Sub-total	₩ 961,599,550	98,131,967	59,062,169	(45,783,081)	5,625,514	5,885,615	5,367,427	(1,414,562)	1,088,474,599
Joint venture									
DAUM KAKAO	4,385,079	-	-	-	-	1,779	225,062	-	4,611,920
Asankakao Medical Data	4,862,363	-	-	-	-	(146,608)	-	-	4,715,755
PINPLAY JAPAN Co. (*8)	1,961,726	(1,961,726)	-	-	-	-	-	-	-
PHI digital healthcare Inc	6,130,230	-	-	-	-	423,064	-	-	6,553,294
The Bridges of Madison	5,000	-	-	-	-	-	-	-	5,000
Sub-total	17,344,398	(1,961,726)	-	-	-	278,235	225,062	-	15,885,969
Total	₩ 978,943,948	96,170,241	59,062,169	(45,783,081)	5,625,514	6,163,850	5,592,489	(1,414,562)	1,104,360,568

(*1) Others include gain or loss on disposal from decrease in percentage of ownership with maintaining significant influence during the six-month period ended June 30, 2020.
(*2) Newly acquired during the six-month period ended June 30, 2020.
(*3) Additionally acquired during the six-month period ended June 30, 2020.
(*4) Disposed during the six-month period ended 2020.
(*5) Partially disposed during the six-month period ended June 30, 2020.
(*6) The Group received dividend income from Dunamu Inc. amounting to ₩ 2,242 million and deducted it from the carrying amount of investments in associates.
(*7) Collected partial amount of investments from the fourth distribution.
(*8) Reclassified from a subsidiary to an associate due to loss of control.
(*9) Reclassified to a subsidiary from an associate due to acquisition of additional shares during the six-month period ended June 30, 2020.
(*10) Reclassified to a financial instrument at fair value through profit or loss from an associate due to loss of significant influence during the six-month period ended June 30, 2020.

9. Investments in Associates and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

2) June 30, 2019

(*In thousands of won*)

	June 30, 2019									
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Impairment**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others**	**Ending balances**
Associates										
Adcredit	₩ 111,826	-	-	-	-	-	-	-	-	111,826
DMS Network, Inc.	-	-	-	-	-	-	-	-	-	-
Tapas Media, Inc.(*1)	177,195	-	-	-	-	-	(275,519)	102,971	1,134,950	1,139,597
NBT Inc.	2,245,729	-	-	-	-	-	6,874	-	-	2,252,603
DAUM Venture Fund	7,925,307	-	-	-	-	-	1,012,040	25,308	-	8,962,655
Dunamu Inc. (*1)	61,717,394	-	-	(4,484,102)	-	-	20,557,438	7,538	(183,964)	77,614,304
Oscar Entertainment	15,243	-	-	-	-	-	3,169	-	-	18,412
CNT TECH CO.,LTD.	6,457,201	-	-	-	-	-	(279,456)	(27,188)	-	6,150,557
Korea Credit Data	4,775,706	-	-	-	-	-	(659,482)	-	-	4,116,224
MANNACEA	5,318,590	-	-	-	-	-	(982,987)	-	-	4,335,603
Left Right Co., Ltd.	224,363	-	-	-	(195,435)	-	(28,928)	-	-	-
SCI VENTURE, INC. (*1)	1,169,815	-	-	-	(526,310)	-	(843,577)	148,830	51,242	-
SHOELAB Co., Ltd	-	-	-	-	-	-	-	-	-	-
LUXROBO Co., Ltd.	5,297,823	-	-	-	-	-	(308,920)	(1,074)	-	4,987,829
Leferient	259,847	-	-	-	-	-	124,881	3,587	-	388,315
Deleo Korea Co.,Ltd.	758,852	-	-	-	-	-	-	-	-	758,852
Skelter Labs, Inc.	2,044,381	-	-	-	-	-	(709,604)	-	-	1,334,777
TOROOC Inc.	744,307	-	-	-	-	-	(472,605)	-	-	271,702
Dreamcide SPC Ltd	-	-	-	-	-	-	-	-	-	-
DIGISONIC Co., Ltd.	75,540	-	-	-	-	-	(28,004)	-	-	47,536
D&C MEDIA CO.,LTD.	14,475,147	-	-	-	-	-	178,450	-	-	14,653,597
K Cube NEO Fund	1,973,629	-	-	-	-	-	35,983	9,958	-	2,019,570
BUNJANG Corp.(*1)	247,248	-	-	-	-	-	190,237	-	554,018	991,503

9. Investments and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

2) June 30, 2019, continued

(*In thousands of won*)

	June 30, 2019									
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Impairment**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others**	**Ending balances**
Associates										
Supergene Inc.	₩ 1,229,014	-	-	-	-	-	696,637	-	-	1,925,651
InnoSignal Co.,Ltd.	161,609	-	-	-	-	-	(2,306)	-	6,635	165,938
PoteNit Co.,Ltd	-	-	-	-	-	-	-	-	-	-
Doctorbrain SPC Ltd	-	-	-	-	-	-	-	-	-	-
CLAIR, Inc	680,509	-	-	-	-	(331,550)	(18,802)	-	-	330,157
KIF-Kakao Wooribank Technology Financing Fund (*4)	7,553,732	-	2,400,000	-	-	-	(93,530)	5,444	-	9,865,646
13MILE.CO.LTD	2,944,816	-	-	-	-	-	(136,833)	-	-	2,807,983
ADSOTA CORP	1,418,923	-	-	-	-	-	(7,183)	16,345	-	1,428,085
CARDOC Inc. (*1,4)	4,100,335	-	899,999	-	-	-	(526,756)	-	(2,929)	4,470,649
Yanadoo Corp.(formerly, Kakao Kids)	8,215,215	-	-	-	-	-	197,404	-	-	8,412,619
Actionsquare (*5)	3,807,346	-	-	(3,807,346)	-	-	-	-	-	-
Nowbusking	2,724,463	-	-	-	-	-	(185,618)	-	-	2,538,845
LINE WORK Corp.	3,001,745	-	-	-	-	-	(104,070)	-	-	2,897,675
CHEQUER GLOBAL Inc.(*1)	376,256	-	-	-	-	-	(3,421)	886	113,082	486,803
Hasys Co., Ltd.	17,133,276	-	-	-	-	-	(875,158)	(1,196)	-	16,256,922
Mycelebs	5,000,000	-	-	-	-	-	(513,674)	-	-	4,486,326
DAIWAON. C. I. INC	15,048,165	-	-	-	-	-	158,243	-	-	15,206,408
Haksan Publishing Co., Ltd.	14,652,978	-	-	-	-	-	(64,990)	-	-	14,587,988
PEOPLEFUND COMPANY (*1)	3,835,699	-	-	-	-	-	(742,838)	-	272,056	3,364,917
SEOUL MEDIA.INC	10,000,008	-	-	-	-	-	45,062	-	-	10,045,070
UBCARE CO., LTD.	45,856,078	-	-	(4,006,582)	-	-	1,546,565	(3,651,756)	-	39,744,305
GC Social Marketing Inc. (*3)	-	-	1,017,541	-	-	-	(25,573)	7,550	-	999,518

9. Investments and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

2) June 30, 2019, continued

(*In thousands of won*)

	June 30, 2019									
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Impairment**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others**	**Ending balances**
Associates										
Imitation SPC Ltd. (*3) ₩	-	-	4,900	-	-	-	-	-	-	4,900
Tagosolutions	3,000,000	-	-	-	-	-	(454,178)	-	-	2,545,822
Sixshop (*3)	-	-	2,000,000	-	-	-	14,732	-	-	2,014,732
MOVILL Co.Ltd (*6)	-	1,400,000	-	-	-	-	(63,041)	-	-	1,336,959
LEEJIGO CO.,LTD. (*3)	-	-	100,000	-	-	-	-	-	-	100,000
TIDESQUARE(*7)	-	26,464,484	-	-	-	-	(796,557)	-	-	25,667,927
PHI digital healthcare Inc (*3)	-	-	5,000,000		-	-	-	-	-	5,000,000
Glohow Holdings PTE. LTE (*3)	-	-	1,488,750	-	-	-	(2,868)	(468)	-	1,485,414
Others (72 companies) (*1,2)	34,329,598	-	500,105	-	(5,490,457)	-	(1,466,155)	73,253	4,615,857	32,562,201
Sub-total	301,084,908	27,864,484	13,411,295	(12,298,030)	(6,212,202)	(331,550)	14,095,082	(3,280,012)	6,560,947	340,894,922
Joint venture										
DAUM KAKAO PHILIPPINES CORP. ₩	4,102,698	-	-	-	-	-	1,288	256,338	-	4,360,324
Asankakao Medical Data Co., Ltd.	-	-	5,000,000	-	-	-	(5,385)	-	-	4,994,615

9. Investments and Joint Ventures, Continued

(2) Changes in carrying amounts of investments in associates and joint venture for the six-month periods ended June 30, 2020 and 2019, are as follows, continued:

2) June 30, 2019, continued

(*In thousands of won*)

	June 30, 2019									
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal**	**Impairment**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share of other comprehensive income (loss) of associates**	**Others**	**Ending balances**
Joint venture										
PINPLAY JAPAN Co., Ltd.	-	-	2,036,044	-	-	-	(51,152)	88,650	-	2,073,542
Sub-total	4,102,698	-	7,036,044	-	-	-	(55,249)	344,988	-	11,428,481
Total	₩ 305,187,606	27,864,484	20,447,339	(12,298,030)	(6,212,202)	(331,550)	14,039,833	(2,935,024)	6,560,947	352,323,403

(*1) Others include gain or loss on disposal from changes in percentage of ownership with maintaining significant influence during the six-month period ended June 30, 2019.
(*2) During the six-month period ended June 30, 2019, the Group recognized impairment loss for investments in Left Right Co., Ltd and other fifteen associates amounting to ₩ 6,212 million as their recoverable amounts are considered less than their book values as of June 30, 2019.
(*3) Newly acquired and established during the six-month period ended June 30, 2019.
(*4) Additionally acquired during the six-month period ended June 30, 2019.
(*5) Disposed during the six-month period ended June 30, 2019.
(*6) Reclassified to an associate from a subsidiary due to the designation as a special company under Financial Law during the six-month period ended June 30, 2020.
(*7) Reclassified to an associate from a subsidiary due to loss of control from changes in option contract during the six-month period ended June 30, 2020.

10. Property and Equipment

(1) Non-financial services business

Changes in property and equipment for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Changes in book value			
Beginning net book value	₩	349,818,319	314,811,844
Changes in scope of consolidation		651,176	(131,193)
Acquisitions		91,680,814	56,297,733
Disposals		(7,459,923)	(1,405,771)
Depreciation		(44,848,866)	(40,390,662)
Reclassification (*1)		(22,510,213)	-
Others (*2)		220,020	(109,733)
Ending net book value	₩	367,551,327	329,072,218
Acquisition cost and book value			
Acquisition cost	₩	693,322,126	590,412,242
Accumulated depreciation		(325,459,802)	(260,937,117)
Accumulated impairment		(6,441)	(63,408)
Government grants		(304,556)	(339,499)
Ending net book value	₩	367,551,327	329,072,218

(*1) During the six-month period ended June 30, 2020, certain lands and buildings are reclassified into investment properties due to changes in purpose of use.
(*2) Others include currency translation effects.

(2) Financial services business

Changes in property and equipment for the six-month period ended June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Changes in book value		
Beginning net book value	₩	-
Changes in scope of consolidation		5,327,990
Acquisitions		133,702
Reclassification		745,400
Depreciation		(414,397)
Ending net book value	₩	5,792,695
Acquisition cost and book value		
Acquisition cost	₩	7,821,273
Accumulated depreciation		(2,028,578)
Ending net book value	₩	5,792,695

11. Investment Properties

Changes in investment properties for the six-month period ended June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Changes in book value		
Beginning net book value	₩	2,843,015
Reclassification (*)		22,490,977
Depreciation		(131,330)
Ending net book value	₩	25,202,662
Acquisition cost and book value		
Acquisition cost	₩	25,621,785
Accumulated depreciation		(419,123)
Ending net book value	₩	25,202,662

(*) During the six-month period ended June 30, 2020, certain lands and buildings are reclassified into investment properties due to changes in purpose of use.

12. Intangible Assets

(1) Non-financial services business

Changes in intangible assets for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Changes in book value			
Beginning net book value	₩	3,548,415,768	3,865,264,987
Changes in scope of consolidation		187,524,680	(17,673,992)
Acquisitions		22,739,003	43,661,624
Reclassification		1,608,647	-
Disposals		(4,805,613)	(2,413,464)
Impairment		(878,412)	(12,584,686)
Amortization		(39,630,382)	(37,978,072)
Others (*)		(1,260,379)	(684,191)
Ending net book value	₩	3,713,713,312	3,837,592,206
Acquisition cost and book value			
Acquisition cost	₩	4,345,015,387	4,013,787,907
Accumulated amortization		(183,364,124)	(146,431,127)
Accumulated impairment		(447,917,473)	(29,738,798)
Government grants		(20,478)	(25,776)
Ending net book value	₩	3,713,713,312	3,837,592,206

(*) Others include currency translation effects.

12. Intangible Assets, Continued

(2) Financial services business

Changes in intangible assets for the six-month period ended June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Changes in book value		
Beginning net book value	₩	-
Changes in scope of consolidation		42,017,363
Acquisitions		211,934
Amortization		(1,725,263)
Ending net book value	₩	40,504,034
Acquisition cost and book value		
Acquisition cost	₩	42,229,297
Accumulated amortization		(1,725,263)
Ending net book value	₩	40,504,034

13. Leases

(1) Non-financial services business

1) Amounts recognized in the consolidated statements of financial position

The consolidated statements of financial position show the following amounts relating to leases:

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Right-of-use assets			
Properties	₩	198,211,677	179,780,687
Machinery		37,410,210	42,241,822
Vehicles		5,294,898	5,435,888
Total	₩	240,916,785	227,458,397

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Lease liabilities			
Current	₩	73,652,762	68,076,544
Non-current		175,117,394	164,988,889
Total	₩	248,770,156	233,065,433

Additions to the right-of-use assets during the six-month periods ended June 30, 2020 and 2019 were ₩ 59,255 million ₩ 44,651 million respectively.

13.Leases, Continued

(1) Non-financial services business, continued

2) Amounts recognized in the consolidated statements of comprehensive income

The consolidated statements of other comprehensive income show the following amounts relating to leases:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Depreciation of right-of-use assets			
Properties	₩	23,903,555	17,793,039
Machinery		10,427,072	6,881,442
Vehicles		1,370,643	1,137,509
Total	₩	35,701,270	25,811,990
Interest expense relating to lease liabilities (included in finance cost)	₩	3,309,008	3,236,687
Expense relating to short-term leases (included in operating expenses)		4,723,855	5,408,665
Expense relating to leases of low-value assets that are not short-term leases (included in operating expenses)		757,076	539,694
Expense relating to variable lease payments not included in lease liabilities (included in operating expenses)		9,721,664	9,546,554
Income from subleases of right-of-use assets		223,302	1,203

The total cash outflow for leases for the six-month periods ended June 30, 2020 and 2019 were ₩ 49,242 million and ₩ 38,040 million respectively.

3) Changes in lease liabilities

Changes in lease liabilities for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Beginning balance	₩	233,065,433	-
Changes in accounting policy		-	161,407,352
Changes in scope of consolidation		(157,627)	(3,526,186)
Increase		56,343,603	47,410,713
Payments and disposals, etc.		(32,560,710)	(18,771,834)
Reclassification		(2,002,067)	(1,926,443)
Others		(5,918,476)	573,719
Ending balance	₩	248,770,156	185,167,321

(2) Financial services business

1) Amounts recognized in the consolidated statements of financial position

The consolidated statements of financial position show the following amounts relating to leases:
(*In thousands of won*)

		June 30, 2020
Right-of-use assets		
Properties	₩	852,657
Vehicles		365,966
Total	₩	1,218,623

13.Leases, Continued

(2) Financial services business, continued

1) Amounts recognized in the consolidated statements of financial position, continued

The consolidated statements of financial position show the following amounts relating to leases, continued:

(*In thousands of won*)

		June 30, 2020
Lease liabilities	₩	1,198,520

Additions to the right-of-use assets during the six-month period ended June 30, 2020 were ₩ 1,397 million.

2) Amounts recognized in the consolidated statement of comprehensive income

The consolidated statement of other comprehensive income shows the following amounts relating to leases:

(*In thousands of won*)

		June 30, 2020
Depreciation of right-of-use assets		
Properties	₩	99,146
Vehicles		294,944
Total	₩	394,090
Interest expense relating to lease liabilities (included in finance cost)	₩	20,232

The total cash outflow for leases for the six-month period ended June 30, 2020 were ₩ 42 million.

3) Changes in lease liabilities

Changes in lease liabilities for the six-month period ended June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Beginning balance	₩	-
Changes in scope of consolidation		1,370,622
Payments		(159,766)
Others		(12,336)
Ending balance	₩	1,198,520

14. Borrowings and Bonds

(1) Short-term borrowings and bonds as of June 30, 2020 and December 31, 2019 are as follows:

(*In thousands of won*)

	Lender	Interest rate	Date of maturity		Amount: June 30, 2020	Amount: December 31, 2019
Current portion of long-term borrowings	THE KUMAMOTO DAI-ICHI SHINKIN BANK and others	0.90~4.30%	July 2020	₩	164,093	177,334
Convertible bonds (*3)	10th non-guarantee private convertible bonds	0.00%	April 2021		67,000,000	208,400,000
	Discount on issuance of bonds				(52,949)	(268,704)
	Net				66,947,051	208,131,296
Public bonds(*1)	Public offering (9-2nd nonguaranteed public bonds)	2.30%	April 2021		40,000,000	-
	Discount on issuance of bonds				(21,235)	-
	Net				39,978,765	-
Exchangeable bonds (*2)	11th guaranteed private exchangeable bonds	0.00%	May 2021		-	230,000,000
	Discount on issuance of bonds				-	(879,824)
	Net				-	229,120,176
Loans for operation capital	Employees of subsidiaries	-	-		-	450,000
Loans for operation capital	Korea Development Bank	1.81%	July 2020		20,000,000	-
Loans for operation capital	Shinhan Bank	1.99%	July 2020		10,000,000	-
Loans for operation capital	Shinhan Bank	1.99%	November 2020		20,000,000	-
Loans for operation capital	KB Kookmin Bank	2.02%	July 2020		10,000,000	-
Loans for operation capital	KB Kookmin Bank and others	2.74~5.32%	April 2020~ March 2021		7,091,490	7,078,695
Convertible bonds	NEOWIZ	3.00%	August 2020		5,206,336	-
Redeemable convertible preferred shares					16,216,199	3,638,285
	Total			₩	195,603,934	448,595,786

(*1) During the six-month period ended June 30, 2020, 9-2nd nonguaranteed public bonds are converted into short-term borrowings.
(*2) The total number of foreign exchangeable bonds issued by the Group during the six-month period ended June 30, 2020 is 1,795,076 bonds. Among these bonds, 1,743,558 bonds are converted into ordinary shares due to exercise of conversion rights and 51,518 bonds are repaid per redemption request from bondholders. (Note 17)
(*3) 1,190,368 private convertible bonds issued by the Group were converted into ordinary shares of the Group during the six-month period ended June 30, 2020. (Note 17)

14. Borrowings and Bonds, Continued

(2) Long-term borrowings and bonds as of June 30, 2020 and December 31, 2019 are as follows:

(*In thousands of won*)	Lender	Interest rate	Date of maturity		June 30, 2020	December 31, 2019
Bonds	Public offering (9-2nd nonguaranteed public bonds)(*2)	2.30%	April 2021	₩	-	40,000,000
	Discount on issuance of bonds				-	(34,633)
	Net				-	39,965,367
Long-term borrowings	THE KUMAMOTO DAI-ICHI SHINKIN BANK and others	0.90~4.30%	May 2021~ October 2032		5,408,078	7,418,107
Redeemable convertible preferred shares and exchangeable bonds (*1)					33,236,873	24,885,825
	Total			₩	38,644,951	72,269,299

(*1) Include ₩ 1,141 million of exchangeable bonds issued by the subsidiary during the six-month period ended June 30, 2020.
(*2) During the six-month period ended June 30, 2020, 9-2nd nonguaranteed public bonds are converted into short-term borrowings.

(3) Movements in the borrowings for the six-month periods ended June 30, 2020 and 2019, are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Beginning balance	₩	520,865,086	654,475,437
Change in scope of consolidation		11,682,525	(153,667)
Additions		95,565,014	318,705,291
Repayments		(18,119,909)	(420,684,616)
Conversion to ordinary shares		(364,800,000)	-
Amortization of present value discounts		4,049,656	480,156
Conversion(*2)		-	13,775,355
Others (*1)		(14,993,487)	(500,208)
Ending balance	₩	234,248,885	566,097,748

(*1) As conversion rights and early redemption rights embedded in the redeemable convertible preferred shares issued by the subsidiary during the six-month periods ended June 30, 2020 and 2019 meet the terms of separation of embedded derivatives, they are separately accounted for as derivative liabilities.
(*2) In 2019, a certain number of ordinary shares of TNK Factory, a subsidiary, were changed into redeemable convertible preferred share. As conversion rights and early redemption rights embedded in those redeemable convertible preferred shares meet the terms of separation of embedded derivatives, they are separately accounted for as derivative liabilities.

14. Borrowings and Bonds, Continued

(4) Details of convertible bonds issued by the Group are as follows:

Category		Details
Type		10th non-guaranteed private convertible bonds
Principal amount		₩ 67,000 million
Interest rate	Coupon rate	0%
	Yield rate	0%
Date of maturity		April 14, 2021
Redemption at maturity		The bonds to be redeemed at their principal amount with 0% of yield to maturity on the maturity date
Conversion details	Conversion ratio	100%
	Conversion price	₩ 118,786 (in won per share)
	Convert into	Ordinary shares of Kakao Corp.
	Conversion period	From April 14, 2017 to March 14, 2021 (both inclusive)
	Conversion price adjustments	Adjusted in accordance with the agreement in the event of any occasions prescribed in the agreement
Investor's early redemption right (Put Option)		Bondholders may claim early redemption before the maturity date for either entire or partial amount of principal on every April 14th starting from 2019, three years after the issuance date.

The entire amount of financial instruments was accounted for liability as the event of default of the convertible bonds is considered contingent settlement provisions. During the six-month period ended June 30, 2020, convertible bond of ₩ 141,253 million (principal amount of ₩ 141,400 million) has been converted into ordinary shares (Note 17).

(5) Details of redeemable convertible preferred shares issued by subsidiaries as of June 30, 2020, are as follows:

	Issuers		
	Friendsgames Co.,Ltd.(*1)	**TNK Factory (Series 1)(*1)**	**TNK Factory (Series 2)**
Date of issue	May 4, 2018	April 9, 2019	April 9, 2019
Value at issue (in thousands of won)	₩ 7,000,004	₩ 16,152,096	₩ 2,597,910
Dividend rate for preferred shares	1% of issue value	1% of standard value	1% of standard value
Guaranteed yield upon redemption	8%	5%	5%
Conversion period	From the day after issuance date to the day before 10 years from issuance date	From the day after issuance date to the day before 5 years from issuance date	From the day after issuance date to the day before 5 years from issuance date
Conversion rate	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)
Redemption period	Redeemable from one year after issuance date	Redeemable during one year from four years after issuance date	Redeemable during one year from four years after issuance date

14. Borrowings and Bonds, Continued

(5) Details of redeemable convertible preferred shares issued by subsidiaries as of June 30, 2020, are as follows, continued:

	Issuers		
	INBYU.	**Kakao VX(*1)**	**Life MMO Corp. (*1)**
Date of issue	February 25, 2019 / March 26, 2019	February 10, 2020	February 24, 2020 / March 17, 2020
Value at issue (in thousands of won)	₩ 1,000,014	₩ 19,999,972	₩ 9,145,246
Dividend rate for preferred shares	0.1% of issue value	1% of issue value	-
Guaranteed yield upon redemption	6%	2%	5%
Conversion period	From the day after issuance date to the day before 10 years from issuance date	From one year after issuance date to the five days before 10 years from one year after issuance date	From the day after issuance date to 5 years from issuance date
Conversion rate	a) 1 preferred share for 1 ordinary share b) anti-dilution	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)
Redemption period	Redeemable from three years after issuance date	Redeemable from four years after issuance date to ten years after issuance date	Redeemable from one year after issuance date

	Issuers	
	Kakao VX(*1, 2)	**Kakao VX(*1, 2)**
Date of issue	October 4, 2018	December 3, 2018
Value at issue (in thousands of won)	₩ 3,996,306	₩ 3,999,981
Dividend rate for preferred shares	1% of issue value	1% of issue value
Guaranteed yield upon redemption	2%	2%
Conversion period	From the issuance date to the day of 10 years from issuance date	From the issuance date to the day of 10 years from issuance date
Conversion rate	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)	a) 1 preferred share for 1 ordinary share b) anti-dilution (includes certain adjustments in IPO offering price)
Redemption period	From February 11, 2024 to October 1, 2028	From February 11, 2024 to December 3, 2028

(*1) As of June 30, 2020, conversion rights and early redemption rights in relation to the above redeemable convertible preferred shares meet the terms of separation of embedded derivatives and are considered as the one compound embedded derivatives, separate from the main contract, and derivative liabilities of ₩ 29,880 million are separately recognized.
(*2) Changed from convertible preferred shares into redeemable convertible preferred shares during the six-month period ended June 30, 2020.

14. Borrowings and Bonds, Continued

(5) Details of redeemable convertible preferred shares issued by subsidiaries as of June 30, 2020, are as follows, continued:

Other than the above redeemable convertible preferred shares, KIWI PLUS and other subsidiaries have issued nine redeemable convertible preferred shares as of June 30, 2020 and they are recognized as ₩ 16,592 million of short-term and long-term borrowings.

15. Net Defined Benefit Liabilities

(1) Non-financial services business

1) The amounts recognized in the consolidated statements of comprehensive income for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	June 30, 2019
Current service cost	₩	21,405,622	17,056,658
Net interest cost		388,119	309,265
Total service cost	₩	21,793,741	17,365,923

Total service cost from defined benefit plan amounting to ₩ 21,794 million and ₩ 17,366 million is included in operating expenses for the six-month periods ended June 30, 2020 and 2019 respectively. In addition, total service cost from defined contribution plan was ₩ 1,850 million and ₩ 945 million for the six-month periods ended June, 2020 and 2019 respectively.

2) Net defined benefit liabilities recognized in the consolidated statements of financial position as of June 30, 2020 and December 31, 2019, are as follows:

(*In thousands of won*)

		June 30, 2020	December 31, 2019
Present value of funded defined benefit obligation	₩	163,984,205	142,557,609
Fair value of plan assets		(142,870,282)	(139,002,748)
Liability in the consolidated statements of financial position	₩	21,113,923	3,554,861

(2) Financial services business

1) The amount recognized in the consolidated statements of comprehensive income for the six-month period ended June 30, 2020 is as follows:

(*In thousands of won*)

		June 30, 2020
Current service cost	₩	268,765

Total costs of W 269 million is included in operating expenses.

2) Net defined benefit liabilities recognized in the consolidated statements of financial position as of June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Present value of funded defined benefit obligation	₩	268,765
Fair value of plan assets		(101,581)
Liability in the consolidated statements of financial position	₩	167,184

16.Cash and Deposits (Financial Services Business)

(1) Cash and deposits as of June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
Cash and cash equivalents	₩	25,712,409
General instrument deposits		2,000,000
Separate investment deposit		6,000,000
Derivative transaction deposits		50,000
Specified deposits		2,000
Other deposits		453,891
Total	₩	34,218,300

(2) Restricted deposits as of June 30, 2020 are as follows:

(*In thousands of won*)

		June 30, 2020
General instrument deposits	₩	2,000,000
Separate investment deposit		6,000,000
Derivative transaction deposits		50,000
Specified deposits		2,000
Other deposits		440,781
Total	₩	8,492,781

17.Share Capital and Share Premium

(1) As of June 30, 2020, the Parent Company's total number of authorized shares is 150 million shares and the total number of issued and outstanding ordinary shares are 87,946,158 shares and 87,846,158 shares, respectively.

(2) The Parent Company may grant stock options to its employees and directors of the Parent Company and its affiliates who contribute or have capabilities to contribute to the establishment, management, overseas business and technical innovation of the Company, with the resolution of special shareholders meeting or Board of Directors up to 15% of total number of issued stocks. As of June 30, 2020, the number of outstanding stock options among granted is 2,464,251 shares (Note 18).

(3) The Parent Company is authorized to issue convertible bonds and bonds with warrants into registered ordinary shares for up to the total par value of ₩ 500 billion to investors other than current shareholders, with the resolution of the board of directors. As of June 30, 2020, the Parent Company has issued convertible bonds amounting to ₩ 67,000 million (Note 14).

(4) The Parent Company may issue various classes of shares which are different in respect of their particulars as to the dividend, voting rights, conversion and redemption rights up to 50% of the total number of shares issued. The Parent Company has only issued ordinary shares and no other classes having the above conditions as of June 30, 2020.

17.Share capital and Share Premium, Continued

(5) Changes in share capital and additional paid-in capital during the six-month periods ended June 30, 2020 and 2019 are as follows:

(in thousands of won)

Date	Description	Number of ordinary shares (shares)	Amounts		
			Share capital	Additional-paid-in capital	Total
<June 30, 2019>					
January 1, 2019	Beginning balance	83,487,773 ₩	41,743,887	4,980,381,395	5,022,125,282
March 22, 2019	Exercise of stock options	10,100	5,050	1,008,908	1,013,958
April 22, 2019	Exercise of stock options	4,000	2,000	399,346	401,346
May 23, 2019	Exercise of stock options	40,500	20,250	3,837,025	3,857,275
June 21, 2019	Exercise of stock options	16,400	8,200	1,571,361	1,579,561
June 30, 2019	Ending balance	83,558,773 ₩	41,779,387	4,987,198,035	5,028,977,422
<June 30, 2020>					
January 1, 2020	Beginning balance	86,322,636	43,161,318	5,346,414,780	5,389,576,098
January 3, 2020	Exercise of conversion right	92,603	46,301	10,939,545	10,985,846
January 17, 2020	Exercise of conversion right	84,185	42,092	9,945,478	9,987,570
January 21, 2020	Exercise of stock options	51,685	25,842	4,495,021	4,520,863
January 31, 2020	Exercise of conversion right	84,185	42,092	9,945,863	9,987,955
February 7, 2020	Exercise of conversion right	8,418	4,209	994,546	998,755
February 14, 2020	Exercise of conversion right	8,418	4,209	994,563	998,772
February 21, 2020	Exercise of conversion right	159,950	79,975	18,882,375	18,962,350
February 25, 2020	Exercise of stock options	27,730	13,865	2,734,802	2,748,667
February 28, 2020	Exercise of conversion right	92,603	46,301	10,941,204	10,987,505
March 6, 2020	Exercise of conversion right	42,092	21,046	4,973,338	4,994,384
March 23, 2020	Exercise of stock options	82,670	41,335	8,103,662	8,144,997
April 10, 2020	Exercise of conversion right	16,837	8,418	1,989,551	1,997,969
April 20, 2020	Exercise of stock options	95,630	47,815	9,395,282	9,443,097
May 8, 2020	Exercise of conversion right	42,092	21,046	4,974,202	4,995,248
May 8, 2020	Exercise of conversion right	5,051	2,526	596,900	599,426
May 8, 2020	Exercise of conversion right	42,092	21,046	4,974,202	4,995,248
May 15, 2020	Exercise of conversion right	126,277	63,139	14,923,013	14,986,152
May 15, 2020	Exercise of conversion right	16,837	8,419	1,989,743	1,998,162
May 22, 2020	Exercise of conversion right	42,092	21,046	4,974,394	4,995,440
May 25, 2020	Exercise of stock options	129,289	64,645	13,178,233	13,242,878
May 29, 2020	Exercise of conversion right	6,734	3,367	795,833	799,200
May 29, 2020	Exercise of conversion right	84,185	42,093	9,949,099	9,991,192
May 29, 2020	Exercise of conversion right	168,370	84,185	19,878,255	19,962,440
May 29, 2020	Exercise of conversion right	25,255	12,628	2,984,670	2,997,298
May 29, 2020	Exercise of conversion right	42,092	21,046	4,974,490	4,995,536
June 22, 2020	Exercise of stock options	46,150	23,075	5,185,814	5,208,889
June 30, 2020	Ending Balance	87,946,158 ₩	43,973,079	5,530,128,858	5,574,101,937

(6) The Parent Company retired its treasury shares of 100,000 shares by appropriating retained earnings. Therefore, the total par value of capital stocks issued differs from the total par value of capital stocks outstanding.

(in thousands of won, except for number of shares and par value)

Capital stocks outstanding				
Stocks issued (shares)	Par value (in won)	Total par value (in thousands of won)	Share capital (in thousands of won)	Difference (in thousands of won)
87,846,158 ₩	500	43,923,079	43,973,079	50,000

17. Share capital and Share Premium, Continued

(7) As the Group exchanged foreign exchangeable bonds that were issued before 2019, the Parent Company disposed 1,743,558 shares in 2020 (Note 14). As a result, the number of treasury shares decreased from 4,233,492 shares to 2,489,934 shares during the six-month period ended June 30, 2020.

18. Share-based Compensation

(1) Details of the Parent Company's stock options as of June 30, 2020, are as follows:

1) Equity-settled stock option

- Type of shares issued through exercise of stock option: registered ordinary shares
- Grant method: Issuance of new ordinary shares
- Vesting period:

Tranches	Details
16th	The requisite service period is two years, exercisable from two to seven years after grant date.
13rd	The requisite service period is two or three years, exercisable from two or three years to seven or eight years after grant date.

2) Cash-settled stock option

- Vesting period:

Tranches	Details
3rd – 5th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date
6th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price.
7th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date.
8th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date. It is exercisable only when the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price.

18.Share-based Compensation, Continued

(1) Details of the Parent Company's stock options as of June 30, 2020, are as follows, continued:

3) Share-based payment transactions with cash alternatives

- Grant method: Issuance of new ordinary shares, treasury shares or payment of cash. The Company will determine in its discretion grant method at the time of exercise and accounted as equity-settled stock option based on the assumption that it will be granted based on the issuance of new stock or grant of treasury shares in the future.
- Vesting period:

Tranches	Details
18th, 21st, 22nd, 24th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date.
19th-20th, 23rd, 25th, 26th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.
27th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.
28th, 30th	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date.
29th, 31st	The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.

18. Share-based Compensation, Continued

(2) Details of the Parent Company's equity-settled stock options outstanding as of June 30, 2020, are as follows:

				Number of shares				
Tranche	**Grant date**	**Exercise price (in won)**	**Outstanding as of January 1, 2020**	**Granted**	**Forfeited**	**Exercised**	**Outstanding as of June 30, 2020**	**Exercisable as of June 30, 2020**
13rd	August 31, 2012	₩ 12,857	1,000	-	-	1,000	-	-
16th	March 28, 2013	32,143	11,165	-	-	11,165	-	-
18th	March 2, 2017	85,350	226,550	-	-	122,450	104,100	104,100
19th	March 2, 2017	85,350	331,000	-	10,000	136,000	185,000	185,000
20th	March 17, 2017	84,650	50,000	-	-	50,000	-	-
21st	May 2, 2017	88,600	211,690	-	3,750	98,889	109,051	109,051
22nd	September 28, 2017	131,500	36,500	-	2,250	6,150	28,100	9,600
23rd	September 28, 2017	131,500	15,000	-	-	7,500	7,500	-
24th	August 31, 2018	123,380	271,000	-	14,500	-	256,500	-
25th	August 31, 2018	123,380	190,000	-	-	-	190,000	-
26th	October 31, 2018	100,580	120,000	-	-	-	120,000	-
27th	May 16, 2019	124,400	125,000	-	-	-	125,000	-
28th	May 16, 2019	124,400	380,000	-	2,000	-	378,000	-
29th	February 25, 2020	177,750	-	68,000	-	-	68,000	-
30th	May 06, 2020	173,050	-	720,000	2,000	-	718,000	-
31st	May 06, 2020	173,050	-	175,000	-	-	175,000	-
	Total		1,968,905	963,000	34,500	433,154	2,464,251	407,751

In addition to the aforementioned stock options, the Group granted equity-settled stock options in relation to the shares of its subsidiaries such as Kakao Page Corp., Kakao Games Corp., TNK Factory, Kakao Investment Co., Ltd., Kakao Mobility Corp, Kakao M Corp., Kakao Commerce Corp., Kidsnote, inc, Friendsgames Co., Ltd., XLGAMES Inc., Life MMO Corp., Kakaopay Corp., Kakao Enterprise Corp., starship entertainment co. ltd., Krispy Studio Corporation, FLEX M Corp., Daon Creative Inc. and KIWI PLUS

18.Share-based Compensation, Continued

(3) Compensation costs of the Parent Company's equity-settled stock options are calculated by applying a fair value approach using Binomial model and LSMC (Least Square Monte-Carlo) model. The related assumptions are as follows:

Tranche	Fair value of option at grant date (in won)	Stock price at grant date (in won)	Expected volatility (*)	Expected dividends	Expected maturity	Risk free Interest rate
13rd	₩ 6,090	20,000	40%	0.00%	3 years	2.76%
16th	12,719	50,000	42%	0.00%	2 years	2.46%
18th	15,086	85,300	11%	0.00%	2~3 years	2.14%
19th	8,696	85,300	11%	0.17%	2~3 years	2.14%
20th	7,931	84,000	11%	0.17%	2~3 years	2.09%
21st	19,153	92,600	11%	0.16%	2~3 years	2.13%
22nd	30,997	139,500	11%	0.11%	2~3 years	2.30%
23rd	4,631	139,500	11%	0.11%	2~3 years	2.30%
24th	27,259	125,000	14%	0.12%	2~3 years	2.25%
25th	5,289	125,000	14%	0.12%	2~3 years	2.25%
26th	14,052	91,600	13%	0.00%	2~3 years	2.18%
27th	10,745	133,500	12%	0.00%	2~4 years	1.80%
28th	29,998	133,500	12%	0.00%	2~4 years	1.80%
29th	30,605	185,500	9%	0.00%	2~4 years	1.40%
30th	48,767	199,500	11%	0.06%	2~4 years	1.40%
31st	20,829	199,500	11%	0.06%	2~4 years	1.40%

(*) The volatility measured at the standard deviation of continuously compounded share returns for 1st - 17th tranches granted prior to the Parent Company's listing in Korean stock market is based on statistical analysis of weekly share prices of listed corporations in the similar line of industry over expected maturity period.

(4) Details of the Parent Company's cash-settled stock options outstanding as of June 30, 2020, are as follows:

			Number of shares (in shares)					
Tranche	Grant date	Exercise price (in won)	Outstanding as of January 1, 2020	Granted	Cancelled	Exercised	Outstanding as of June 30, 2020	Exercisable as of June 30, 2020
3rd	May 2, 2017	₩ 88,600	6,500	-	-	-	6,500	6,500
4th	September 28, 2017	131,500	500	-	-	-	500	250
5th	August 31, 2018	123,380	5,000	-	-	-	5,000	-
6th	August 31, 2018	123,380	14,500	-	-	-	14,500	-
7th	May 16, 2019	124,400	3,000	-	-	-	3,000	-
8th	May 16, 2019	124,400	10,000	-	-	-	10,000	-
	Total		39,500	-	-	-	39,500	6,750

In addition to the aforementioned stock options, the Group granted cash-settled stock options on shares of Kakaopay Corp. and Friendsgames Co., Ltd., its subsidiaries.

(5) The fair value of the Group's cash-settled stock options was determined using LSMC (Least Square Monte-Carlo) option pricing model.

18. Share-based Compensation, Continued

(6) Share-based compensation recognized as expenses for the three-month and six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)		June 30, 2020		June 30, 2019	
		Three-month period	Six-month period	Three-month period	Six-month period
Equity-settled stock option (*1)	₩	7,952,265	14,163,734	5,584,374	9,728,385
Cash-settled stock option (*2)		3,169,904	3,311,862	554,541	1,385,057
Total	₩	11,122,169	17,475,596	6,138,915	11,113,442

(*1) Amounts for 2020 include ₩ 7,262 million (2019: ₩ 4,780 million) of share-based compensation recognized as expenses for the shares of subsidiaries.
(*2) Amounts for 2020 include ₩ 44 million (2019: ₩ 938 million) of share-based compensation recognized as expenses for the shares of subsidiaries.

19. Operating Expenses

Operating expenses for the three-month and six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)		June 30, 2020		June 30, 2019	
		Three-month period	Six-month period	Three-month period	Six-month period
Salaries	₩	166,621,444	322,967,722	118,201,451	242,220,778
Retirement benefit expense		12,599,712	23,912,068	9,280,965	18,310,881
Compensation cost of share-based payments		11,122,169	17,475,596	6,138,914	11,113,442
Welfare		24,455,277	46,663,660	21,852,017	40,749,989
Travel and transportation expense		1,542,793	3,708,210	3,165,576	5,894,565
Taxes and dues		2,214,211	5,981,109	1,565,975	3,004,232
Rental expense		3,112,005	5,841,365	1,573,777	4,583,359
Commission		106,611,282	198,699,575	84,424,070	174,354,495
Sales-related expenses		318,840,034	609,425,055	272,578,583	521,540,447
Cost of goods sold		90,644,222	181,723,505	69,304,279	150,985,946
Advertising expense		38,423,773	68,154,627	38,244,338	70,357,683
Depreciation		40,746,795	79,553,539	33,876,964	66,202,652
Amortization		20,608,451	41,355,645	19,854,606	37,978,072
Expenses for events		121,447	322,363	1,692,571	2,525,879
Others		17,152,909	30,041,806	11,194,097	22,081,836
Total	₩	854,816,524	1,635,825,845	692,948,183	1,371,904,256

20. Income Tax Expense

Income tax expense is recognized based on management's best estimate of weighted average annual effective tax rate expected for the full financial year. As of June 30, 2020, the estimated average annual effective tax rate used for the year ending December 31, 2020 is 31.9% (for the six-month period ended June 30, 2019: 48.4%) due to effects of permanent difference that occurred for not recognizing deferred tax asset.

21. Earnings Per Share

(1) Basic earnings per share

Basic earnings per share is calculated by dividing the profit attributable to equity holders of the Parent Company by the weighted average number of ordinary shares outstanding, excluding the treasury shares during the period.

Basic earnings per share for the three-month and six-month periods ended June 30, 2020 and 2019 is calculated as follows:

(*In thousands of won, except for earnings per share and number of shares*)

	June 30, 2020		June 30, 2019	
	Three-month period	**Six-month period**	**Three-month period**	**Six-month period**
Profit attributable to equity holders of the Parent Company	₩ 139,761,393	217,221,902	38,774,841	66,286,629
Weighted average number of ordinary shares outstanding (shares)	84,805,031	83,614,540	79,186,617	79,171,096
Basic earnings per share (in won)	₩ 1,648	2,598	490	837

(2) Diluted earnings per share

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. The Group has stock options, exchangeable bonds and convertible bonds as dilutive potential ordinary shares. For the share options, a calculation is done to determine the number of shares that could have been acquired at fair value (determined as the average annual market share price of the Group's shares) based on the monetary value of the subscription rights attached to outstanding share options. The number of shares calculated as above is compared with the number of shares that would have been issued assuming the share options are exercised. The convertible bond and exchangeable bond are assumed to have been converted into ordinary shares, and the net profit is adjusted to eliminate the interest expense less the tax effect. With respect to diluted earnings per share for the six-month periods ended June 30, 2020, diluted earnings per shares for exchangeable bonds are not included in the calculation as there is an anti-dilutive effect.

21.Earnings Per Share, Continued

(2) Diluted earnings per share, continued

Diluted earnings per share for the three-month and six-month periods ended June 30, 2020 and 2019, is calculated as follows:

(*In thousands of won, except for earnings per share and number of shares*)

	June 30, 2020		June 30, 2019	
	Three-month period	Six-month period	Three-month period	Six-month period
Profit attributable to equity holders of the Parent Company	₩ 139,761,393	217,221,902	38,774,841	66,286,629
Interest cost for convertible bonds (net of tax)	19,405	45,707	1,256,080	2,489,658
Total	₩ 139,780,798	217,267,609	40,030,921	68,776,287
Weighted average number of ordinary shares outstanding	84,805,031	83,614,540	79,186,617	79,171,096
Adjustment for:				
Stock options	329,829	363,966	191,713	161,077
Convertible bonds	909,751	1,164,404	3,822,614	3,822,614
Weighted average number of diluted potential ordinary shares	1,239,580	1,528,370	4,014,327	3,983,691
Weighted average number of ordinary shares for diluted earnings per share	86,044,611	85,142,910	83,200,944	83,154,787
Diluted earnings per share (in won)	₩ 1,625	2,552	481	827

22.Cash Generated from Operations

(1) Details of cash generated from operations for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

	June 30, 2020	June 30, 2019
Profit before income tax	₩ 330,722,143	94,078,861
Adjustments:		
Reversal of allowance for bad debts	(577,668)	(678,520)
Depreciation	81,489,953	66,202,652
Amortization	41,355,645	37,978,072
Impairment losses on intangible assets	878,412	12,584,686
Gain on disposal of property and equipment	(165,334)	(346,830)
Loss on abandonment of property and equipment	621,680	62,597
Gain on disposal of intangible assets	(361,478)	(2,155,663)
Share of net profit of associates	(6,163,850)	(14,039,833)
Loss on disposal of equity method investments	5,774,831	329,485
Gain on disposal of equity method investments	(46,733,294)	(10,901,023)
Impairment losses on equity method investments	-	6,212,202
Retirement benefit expense	22,062,507	17,365,924
Compensation cost of share-based payments	17,475,596	11,113,442
Dividend income	(13,098,540)	(348)
Interest income	(11,781,878)	(17,167,404)
Interest expense	10,210,171	6,881,426
Fund finance costs	1,897,179	4,700,217
Gain on valuation of derivative financial instruments	(118,722)	-

22.Cash Generated from Operations, Continued

(1) Details of cash generated from operations for the six-month periods ended June 30, 2020 and 2019 are as follows, continued:

(*In thousands of won*)

	June 30, 2020	June 30, 2019
Loss on valuation of derivative financial instruments	2,019,320	1,115,777
Transaction gains of derivative financial instruments	(636,825)	-
Gain on valuation of financial assets at fair value through profit or loss	(14,924,142)	(2,223,388)
Loss on valuation of financial assets at fair value through profit or loss	5,063,548	3,486,894
Gain on disposal of financial assets at fair value through profit or loss	(243,383)	(379,352)
Loss on disposal of financial assets at fair value through profit or loss	827,749	92,553
Loss on disposal of financial assets at fair value through other comprehensive income	249,172	-
Other long-term employee benefit expense	-	6,164,621
Impairment loss on other assets	-	193,132
Gain on disposal of investments in subsidiaries	(67,662,117)	-
Loss on disposal of investments in subsidiaries	11,623	-
Other bad debt expenses	157,696	161,688
Others	16,609,961	(6,188,693)
Changes in operating assets and liabilities		
Trade receivables	9,622,676	(3,086,292)
Inventories	(3,987,623)	(17,256,874)
Other current financial assets	(17,458,680)	36,217,247
Other current assets	(68,509,090)	36,998,953
Other non-current assets	(13,737,939)	(3,015,506)
Trade payables and other payables	(3,713,458)	19,295,022
Other current liabilities	134,364,987	64,400,812
Other current financial liabilities and deposits received	(29,030,214)	(14,623,935)
Other non-current liabilities	(238,658)	-
Other non-current financial liabilities	115,000	8,561,388
Net defined benefit liabilities	(9,468,612)	(5,013,447)
Other long-term employee benefit liabilities	(415,998)	(869,032)
Other provisions	-	383,378
Other financial assets (financial services business)	(53,961,896)	-
Other assets (financial services business)	(107,244)	-
Deposits received (financial services business)	171,471,579	-
Other financial liabilities (financial services business)	(152,103,539)	-
Others	782,169	(1,809,469)
Cash generated from operations	₩ 338,583,415	334,825,420

22.Cash Generated from Operations, Continued

(2) Significant transactions not affecting cash flows for the six-month periods ended June 30, 2020 and 2019 are as follows:

(*In thousands of won*)

	June 30, 2020	June 30, 2019
Provision for restoration to specific property and equipment account	₩ 1,693,029	4,471,564
Write-offs of trade receivables	398,527	76,576
Change of non-trade payables related to acquisition of property and equipment	43,242,078	1,208,695
Change of non-trade payables related to acquisition of intangible assets	1,465,941	115,973
Transfer from advanced payments and long-term advanced payments to property and equipment	745,400	3,483,855
Transfer from advanced payments and long-term advanced payments to intangible assets	2,487,431	4,708,629
Conversion of convertible bonds	141,400,000	-
Conversion of exchangeable bonds	223,400,000	-
Transfer to current portion of long-term borrowings	42,040,517	526,185
Increase in right-of-use assets due to changes in accounting policies	-	210,426,553
Increase in lease liabilities due to changes in accounting policies	-	208,362,752
Change of non-trade payables related to payment of lease liabilities	10,802,229	2,041,170
Change of non-trade receivables related to collection of lease receivables	-	180,936
Transfer from property and equipment to investment properties	22,490,977	-

23.Commitments and Contingencies

(1) The Group has provided the following guarantees as of June 30, 2020 and December 31, 2019:

(In thousands of won)

			Amount		
Beneficiary	**Guarantor**		**June 30, 2020**	**December 31, 2019**	**Guaranteed item**
Employees (*1)	Shinhan Bank	₩	4,457,000	245,000	Employee loans
Customers (*2)	Korea Investment Savings Bank, etc.		14,435,337	15,150,787	Guarantee for sales installment
Housing loans to employees (*3)	Executives of associates		385,000	440,000	Housing loans to employees
Total		₩	19,277,337	15,835,787	

(*1) The Group provided its employees payment guarantee with banks for the employees' bank loans related to their welfare and the Group's deposits of ₩ 5,766 million are pledged as collateral.
(*2) Debt guarantee provided for the customer's installment amount for financial institutions among the purchase amount. In relation to such debt guarantee, financial instruments of ₩ 300 million of the Group are provided as collateral.
(*3) Financial instruments of ₩ 425 million of the Group are provided as collateral in relation to guarantees for housing loans to employees.

23.Commitments and Contingencies, Continued

(2) The Group has been provided the following guarantees by others as of June 30, 2020 and December 31, 2019:

(In thousands of won)

Guarantor	Details	Amount		Beneficiary
		June 30, 2020	December 31, 2019	
Seoul Guarantee Insurance and others	Performance guarantee and others	₩ 171,040,127	128,369,227	Korea Financial Telecommunications and Clearings Institute, Korea Investment & Securities Co.,Ltd. etc
Korea Credit Guarantee Fund	Guarantee for borrowings and others	2,619,200	2,410,000	Industrial Bank of Korea, etc.
Shinhan Bank	Consumer protection under Act on Electronic Commerce	500,000	500,000	Kakao Commerce Corp.
Total		₩ 174,159,327	131,279,227	

(3) As of June 30, 2020, the Group is involved in 31 lawsuits amounting to ₩ 29,253 million as a defendant or co-defendant. The Group's management does not expect that these cases would have a material impact on its consolidated financial statements.

(4) Significant commitments

1) The Group's agreements with financial institutions and commitments as of June 30, 2020 and December 31, 2019, are as follows:

a) June 30, 2020

(*In thousands of won*)

Financial Institution	Agreements	June 30, 2020	
		Maximum limit	Amount executed
Industrial Bank of Korea	General loans	₩ 100,000	-
Industrial Bank of Korea	Purchasing loan	1,380,000	1,380,000
KEB Hana Bank	Intra-day credit loans	1,000,000	-
KB Kookmin Bank	Purchasing loan	500,000	500,000
KB Kookmin Bank	General loans	1,200,000	1,000,000
KB Kookmin Bank	Facility loans	6,800,000	6,800,000
KB Kookmin Bank	Limit loan	22,000,000	10,000,000
Shinhan Bank	General loans	20,300,000	20,000,000
Shinhan Bank	Limit loan	25,000,000	10,000,000
Shinhan Bank	Limit loans for operation capital	200,000,000	-
Woori Bank	Retail banking loans	700,000	697,090
Woori Bank	General loans	100,000	100,000
Korea Development Bank	Limit loan	40,000,000	20,000,000
Korea Securities Finance Corp	Transaction loan	110,000,000	-
Nonghyup Bank	General loans	600,000	600,000
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for capital operation	1,348,822	1,348,822

23.Commitments and Contingencies, Continued

(4) Significant commitments, continued

1) The Group's agreements with financial institutions and commitments as of June 30, 2020 and December 31, 2019, are as follows, continued:

a) June 30, 2020

(*In thousands of won*)

			June 30, 2020	
Financial Institution	**Agreements**		**Maximum limit**	**Amount executed**
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for investments		111,964	111,964
Japan Finance Corporation	Loans for investments		11,384	11,384
	Total	₩	431,152,170	72,549,260

b) December 31, 2019

(*In thousands of won*)

			December 31, 2019	
Financial Institution	**Agreements**		**Maximum limit**	**Amount executed**
Industrial Bank of Korea	General loans	₩	100,000	-
KEB Hana Bank	General loans		50,000	-
KEB Hana Bank	Trade receivable secured loan		1,000,000	-
KB Kookmin Bank	Purchasing loan		500,000	500,000
Industrial Bank of Korea	Purchasing loan		1,380,000	1,380,000
Shinhan Bank	Limit loans for operation capital		200,000,000	-
KB Kookmin Bank	Facility loans		7,800,000	7,800,000
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for operation capital		114,568	114,568
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for investments		1,364,602	1,364,602
Japan Finance Corporation	Loans for investments		16,271	16,271
Woori Bank	General borrowings		1,000,000	1,000,000
Shinhan Bank	General borrowings		1,500,000	1,500,000
Woori Bank	Retail banking loans		700,000	698,695
KB Kookmin Bank	Loans for operation capital		200,000	200,000
Woori Bank	Loans for operation capital		100,000	100,000
Shinhan Bank	Limit loan		25,000,000	-
Korea Development Bank	Limit loan		40,000,000	-
KB Kookmin Bank	Limit loan		22,000,000	-
	Total	₩	302,825,441	14,674,136

2) In 2016, the Parent Company has entered into a securities lending agreement with each of two underwriters of the exchangeable bonds, Citigroup Global Markets Limited and Morgan Stanley & Co. International plc for up to an aggregate 2,191,885 shares of exchange target shares, equivalent to 100% of the total exchangeable shares. According to the agreement, the shares will be lend up to the date specified such as the date of the 5th anniversary of the issuance of the bonds, the date on which all of the bonds are redeemed, or exchanged through the underwriters' agent, NH Investment & Securities Co., Ltd. However, shares subject to the agreement became treasury shares of the Parent Company due to the merge with Kakao M Corp. occurred in 2018. The number of treasury shares that became subject to the securities lending agreement was 1,793,755 shares in 2019. As a result, the securities lending agreement with NH Investment & Securities Co. ended as exchangeable bonds expired during the six-month period ended June 30, 2020.

23.Commitments and Contingencies, Continued

(4) Significant commitments, continued:

3) In the past, the Group granted a right to a customer for reselling screen golf equipment to the Group at 50% of the price when it sells to a customer after a certain period of time (selling price: ₩ 2,883 million).

4) In accordance with the shareholder agreements in relation to Kakaopay Corp., a subsidiary, the right to acquire 2,780 thousand new shares (amounting to USD 113 million) that does not affect the Group's control through a capital increase within three years after the initial investment, is provided to non-controlling interest investors. If Kakaopay Corp. issues new shares with the approval of the Board of Directors, the Company is obligated to acquire approximately 910 thousand new shares (amounting to USD 37 million). After the acquisition, the percentage of ownership will remain at 55.0% and there will be no effect on the consolidation governance structure. In addition, in accordance with the shareholder agreements, if there are difficulties in management and operation of Kakaopay Corp. due to changes in governance structure under the above agreements, the non-controlling interest investors of the subsidiary may request the Group to purchase those shares at fair value for a period of time described in the agreements. The management of the Group believes that the Group can control prerequisites for investors to claim the purchase and therefore, as of June 30, 2020, the Group believes that the possibility for non-controlling interest investors to exercise the put option is remote.

5) In accordance with the agreements with non-controlling interests of some subsidiaries including Kakao Page Corp., the Group is required to obtain a consent from investors, when the Group intends to dispose of the investments in subsidiaries within the period specified in the agreements through a transfer or other methods to third party other than stipulated manners in the agreements such as exercise of tag-along right.

(5) Financial instruments restricted as of June 30, 2020 and December 31, 2019 are as follows:

(*In thousands of won*)

		June 30, 2020	December 31, 2019	Purpose of restriction
Short-term financial instruments	₩	20,000,000	20,000,000	Withdrawal restriction in relation to firm banking (*1)
		1,350,000	1,350,000	Pledged as collateral for Shinhan Card and etc. (*2)
		5,465,900	5,465,900	Payment guarantee for employees' loan
		425,000	425,000	Pledged for housing loans to employees
		5,000,570	4,997,424	Payment guarantee for office lease
		1,700,000	1,700,000	Pledged as collateral for a franchise contract
		-	100,000	Guarantee for instalment sales of a customer
		2,000	2,000	Deposit for checking account
Long-term financial instruments		300,000	300,000	Payment guarantee for employee's loan
		-	701,301	Payment guarantee for office lease
		300,000	-	Pledged for payment guarantees to Daehan Bank
		100,788	-	Pledged for Korea Land and Housing Corporation
		-	10,200	Payment guarantee for vehicles lease
Deposits and financial assets at fair value through profit or loss		2,000,000	-	General instrument deposits

23.Commitments and Contingencies, Continued

(5) Financial instruments restricted as of June 30, 2020 and December 31, 2019 are as follows, continued

(*In thousands of won*)

		June 30, 2020	December 31, 2019	Purpose of restriction
Deposits and financial assets at fair value through profit or loss		6,000,000	-	Separate investment deposit (ordinary deposit) (*3)
		282,486,287	-	Separate investment deposit (financial asset) (*3)
		50,000	-	Derivative transaction deposits
		2,000	-	Deposit for checking account
		440,781	-	Deposit for security exchange for Korea Exchange Market
Total	₩	325,623,326	35,051,825	

(*1) The withdrawal is restricted in relation to the firm banking contract with DGB Daegu Bank and Industrial Bank of Korea.
(*2) Pledged as collateral in relation to covering expected loss incurred to credit card companies about business cooperation agreements with Shinhan Card and other credit card companies for Automated Payment via Kakao Pay.
(*3) Deposited separately at Korea Securities Finance Corp. to meet the customer's requests such as return of investment deposit under Section 4 of Article 74 of Financial Investment Services and Capital Markets Act. It cannot be transferred or provided as collateral and cannot be offset or seized by anyone.

(6) The following assets are pledged as collateral in relation to guarantees for contract fulfilment and borrowings as of June 30, 2020:

(*In thousands of won*)

		Book value	Collateralized amount	Type of Guarantee	Secured party
Land and buildings	₩	7,783,182	4,800,000	Collateral for facility loans	KB Kookmin Bank

(7) The Group provided the stock return rights as collateral with respect to the payment guarantee received from KB Kookmin Bank for the exchangeable bonds. However, as the Group repaid exchangeable bonds during the six-month period ended June 30, 2020, the pledges for remaining shares were cancelled.

(8) In 2019, the Group exchanged shares with SK TELECOM CO., LTD. to enter strategic partnership. The Group acquired 1,266,620 of treasury shares and SK TELECOM CO., LTD. purchased 2,177,401 of new shares issued by the Group through a capital increase by allotment to a third party. New shares issued are subject to a deposit contract (prohibition of withdrawal or sale of relevant securities for one year from the deposit date) with the Korea Securities Depository and the deposit contract is in effect as of June 30, 2020.

(9) The Group entered into an agreement to pay incentives to shareholders of non-controlling interests of subsidiaries for earnings generated from fiscal year 2018 to 2021. These earnings are calculated in accordance with the agreement and incentives are paid in dividends and bonus through discussion between shareholders. The Group pays incentives unless the entity subject to payment recognizes net loss and to extent it is permitted under laws or regulations (including unenforceable guidelines and administrative guidance of government organization).

23.Commitments and Contingencies, Continued

(10) As of June 3, 2020, other commitments of the Group are as follows:

1) The Group pledged shares held by some shareholders who have participated in the Group's paid-in capital increase as collateral.

2) In accordance with the agreements between shareholders of some subsidiaries and associates including STARSHIP ENTERTAINMENT CORP., the Group is required to obtain written consent from interested parties and investors when the Group intends to dispose of all or part of investments in subsidiaries or associates by transfer, sale, providing collateral, or other means before certain period or conditions are met.

3) In accordance with the agreements between shareholders of STARSHIP ENTERTAINMENT CORP., a subsidiary, if the listing of STARSHIP ENTERTAINMENT CORP. is not completed within five years from the date of the capital increase of STARSHIP ENTERTAINMENT CORP. in December 2019, the investors who participated in the capital increase can request the Group to purchase shares of STARSHIP ENTERTAINMENT CORP. In relation to this, the Group recognized the amount to purchase the additional shares as liabilities.

4) After providing a loan to subsidiary's CEO, the Group has pledged all of shares of moonlight film and Kakao M Corp. held by the CEO as collateral and has been comprehensively entitled the voting rights of moonlight film for three years.

5) For the shares of EDAM Entertainment, an associate, held by other shareholders, the Group can request to sell the number of shares to hold 51% of the total shares issued on a complete dilution basis to the Group or a third party designated by the Group through a written notice within one year after two years from the signed date of shareholders agreements.

6) The Group has entered into an agreement between shareholders that grants put options in relation to equity investments of STARSHIP ENTERTAINMENT CORP. and Kakao Page Corp., subsidiaries of the Group, and recognized the amount as financial liabilities.

7) The Group has entered into an agreement between shareholders that holds call options and grants put options in relation to equity investments of moonlight film, a subsidiary of the Group.

8) As of June 30, 2020, in relation to the acquisition of shares of SamyangCNC Co.,Ltd., DAON CREATIVE, Soundist Entertainment.Co.,Ltd., NeoBazar and RS MEDIA Co., Ltd., the Group has an obligation to purchase shares held by the other parties for a price agreed at a certain point or a specified price when the other party expresses its intention to sell some of the shares. The Group recognizes the amount as financial liabilities.

9) As of June 30, 2020, the Group has entered into a payment agreement for production and development expenses related to drama production of two cultural industry specialty companies (Doctorbrain SPC Ltd., Dreamside SPC Ltd.) that have been invested in accordance with Framework Act on the Promotion of Cultural Industries. The final amount will be determined after being proposed to the SPC Steering Committee. Meanwhile, the expected net production cost for Doctorbrain SPC Ltd., is ₩ 10.5 billion, and the Company should raise funds by investing on the schedule agreed between the parties or by attracting third party investment.

10) The Group has entered into contracts with 23 companies to sell and exchange cryptocurrency in relation to its subsidiary's cryptocurrency business ("Klaytn").

11) With respect to Kakao VX, a subsidiary, the investors of Kakao VX can request to sell their shares under the provisions of subscription agreement relating to redeemable convertible preferred shares. The investors may request to sell their shares during a specified period under limited circumstances where the Group fails to perform important obligations stated in the contract due to willful misconduct or gross negligence. The Group expects that the likelihood of the circumstances that allow investors' request to sell their shares is remote.

24.Business Combinations

(1) In 2020, the Group acquired the shares of 7 companies including Kakaopay Securities Corp., which became its subsidiaries. Details of the percentage of ownership acquired, the consideration paid and goodwill recognized thereto are as follow:

(*In thousands of won*)

	Percentage of ownership acquired		Consideration	Goodwill
Kakaopay Securities Corp.	60.0%	₩	68,752,276	15,317,816
XLGAMES Inc.	52.9%		128,040,789	75,353,302
Wind Pictures Corp (*)	100%		40,000,000	49,209,447
LOGOS FILM Co (*)	100%		20,000,000	12,498,624
STORY & PICTURES MEDIA Corp(*)	100%		20,000,000	17,458,485
GLOHOW HOLDINGS PTE. LTD.(*)	54.9%		4,212,319	3,072,009
Remote Monster Corp(*)	100%		6,068,947	5,512,981
Total		₩	287,074,331	178,422,664

(*) Presented at a provisional amount for certain subsidiaries as purchase price allocation amount related to the business combination is not finalized.

(2) Details of the consideration transferred, fair value of the acquired identifiable assets and liabilities at the acquisition date, and non-controlling interests in relation to business combinations in 2020, are as follows:

(*In thousands of won*)

		XLGAMES Inc.	GLOHOW HOLDINGS PTE. LTD.	Kakaopay Securities Corp. (*)
Consideration transferred				
Cash and cash equivalents	₩	128,040,789	4,212,319	30,000,000
Contingent consideration etc.		-	-	38,752,276
Total	₩	128,040,789	4,212,319	68,752,276
Assets acquired and liabilities assumed				
Cash and cash equivalents		33,967,070	1,667,998	44,511,009
Short-term financial instruments		8,974,175	-	-
Financial assets at fair value through profit or loss		4,966,902	-	106,327,545
Trade receivables		7,052,433	384,754	-
Other non-current financial assets		-	31,466	-
Property and equipment		611,646	46,155	5,327,990
Right-of-use assets		1,501,532	120,874	1,396,573
Intangible assets		46,389,906	261	26,699,547
Deferred tax assets		9,108,861	-	-
Other assets		2,318,762	17,996	236,123,028
Borrowings		(11,682,525)	-	(10,000,000)
Other financial liabilities		(2,026,310)	-	(231,155,845)
Trade and other payables		-	(21,080)	-
Derivative financial liabilities		(182,374)	-	-
Lease liabilities		(1,520,601)	(120,874)	(1,370,622)
Net defined benefit liabilities		(8,032,404)	-	-
Deferred tax liabilities		(11,169,820)	-	(360,553)
Other liabilities		(6,696,878)	(2,064)	(114,276,089)
Net identifiable assets acquired		73,580,375	2,125,486	63,222,583
Non-controlling interest		(20,892,888)	(985,176)	(9,788,123)
Goodwill	₩	75,353,302	3,072,009	15,317,816

24.Business Combinations, Continued

(2) Details of the consideration transferred, fair value of the acquired identifiable assets and liabilities at the acquisition date, and non-controlling interests in relation to business combinations in 2020, are as follows, continued:

(*) With respect to acquisition of Kakaopay Securities Corp. the Group entered into an agreement to pay dividends and bonus to shareholders based on operating performance profit (Note 23).

(*In thousands of won*)

		LOGOS FILM Co.	STORY & PICTURES MEDIA Corp.	Remote Monster Corp.
Consideration transferred	₩			
Cash and cash equivalents		20,000,000	20,000,000	6,068,947
Assets acquired and liabilities assumed				
Cash and cash equivalents		27,419	280,766	55,651
Short-term financial instruments		-	30,000	-
Financial assets at fair value through profit or loss		3,796,307	-	-
Trade receivables		-	2,146	33,938
Other non-current financial assets		-	-	-
Property and equipment		196,305	113,715	-
Right-of-use assets		1,075,390	238,779	-
Intangible assets		-	7,572	602,815
Deferred tax assets		1,261,728	378,520	-
Other assets		2,249,924	7,818,480	5,883
Other financial liabilities		(16,761)	(5,899)	-
Lease liabilities		(1,037,145)	(244,075)	-
Deferred tax liabilities		-	-	(66,310)
Other liabilities		(51,791)	(6,078,489)	(76,011)
Net identifiable assets acquired		7,501,376	2,541,515	555,966
Non-controlling interest		-	-	-
Goodwill	₩	12,498,624	17,458,485	5,512,981

(*In thousands of won*)

		Wind Pictures Corp.
Consideration transferred	₩	
Cash and cash equivalents		40,000,000
Assets acquired and liabilities assumed		
Cash and cash equivalents		1,088,343
Property and equipment		193,381
Right-of-use assets		137,781
Intangible assets		8,031
Deferred tax assets		181,136
Other assets		14,251,059
Borrowings		(6,700,000)
Other financial liabilities		(238,289)
Lease liabilities		(122,355)
Other liabilities		(18,008,534)
Net identifiable assets acquired		(9,209,447)
Goodwill	₩	49,209,447

25.Related Party Transactions

(1) The list of related parties as of June 30, 2020 and December 31, 2019 is as follows:

1) June 30, 2020

Relationship	Related parties
Associates	Adcredit, DMS Network, Inc., DAUM Venture Fund, Dunamu Inc, Futurewiz, Dunamu Investment Management Co., Ltd, IGIS Networks, Dunamu&Partners, LAMBDA256, DXM CO.,LTD, Oscar Entertainment, CNT TECH CO.,LTD, Sixshop, CC Partners, Polarium, Allstay, Square Lab, KakaoBank Corp, Korea Credit Data, NOWBUSKING COMPANY, Tapas Media, Inc., D&C MEDIA CO., LTD., D&C OF STORM CO.,LTD., The Comics., Mycelebs, DAIWAON. C. I. INC, Haksan Publishing co.,Ltd., Seoul Media Comics., LEEMITELEESYUN CULTURE INDUSTRIAL JEONMUNHOESA INC., KW books, Super Comics studio, 325 E&C, UNION K-Culture Contents Investment Fund, EDAM Entertainment Corp, NBT Inc, NBT AMERICA INC., NBT BEIJING Co., Ltd., CS Factory Co., Ltd., Hasys Co.,ltd, MannaCEA, Manna Town, Farmit, Farmit2, Deleo Korea Co.,Ltd., CARDOC Inc, LUFTT Korea, YANADOO Co., Ltd., Pixel Hub, 4ukids, LINE WORK Corp., DAEYOUNG CHAEVI, Adlock Advertainment, Stage Five co., ltd, LUXROBO Co., Ltd., Skelter Labs, Inc., TOROOC Inc.,REBITTANCE INC., Left Right Co., Ltd., Ocean Drive Studio Co., Ltd., Un7qi3 Corp., Ad X Co., Ltd., Nexelon, N Flight Studio, GomFactory, Second Dive, Lionheart Studio, GC SOCIAL MEDIA MARKETING,INC., K Cube NEO Fund, DGT mobility, DIGISONIC CO., LTD., InnoSignal Co.,Ltd. CHEQUER Inc, CLAIR, Inc. G&G Enterprise Co.Ltd., Social bean, KIF-Kakao Wooribank Tech-nology Financing Fund, 13 Mile Co., Ltd., PEOPLEFUND COMPANY, MOVILL Co.Ltd, Easygo, DOZEN CO.,LTD, ADSOTA CORP, TIDESQUARE, TANGRAM FACTORY AMERICA, INC., KROSS PICTURES, and other 59 companiesas
Joint ventures	DAUM KAKAO PHILIPPINES CORP., AsanKakao Medical Data Co., Ltd., PHI DIGITAL HEALTHCARE Inc., The Bridges of Madison County Co., Ltd.
Other related parties	K Cube Holdings Co., Ltd., T for Invest, New learn English Inc., Onyx K., Golf & Data System, PLUS 2 PERCENT, NPLUTO, GOLF&FRIEND CO.,LTD., LKMS Limited, LKMS Re, kakao Impact Foundation, GAMERS FOUNDATION, Stage Asset Co., Ltd.

25.Related Party Transactions, Continued

(1) The list of related parties as of June 30, 2020 and December 31, 2019 is as follows, continued:

2) December 31, 2019

Relationship	Related parties
Associates	Adcredit, DMS Network, Inc., Tapas Media, Inc., NBT Inc., NBT AMERICA INC., NBT CHINA INC., DAUM Venture Fund, Dunamu Inc., Futurewiz, Dunamu Investment Management Co., Ltd., Dunamu&Partners, ROOTONESOFT, IGIS Networks, LAMBDA256, Oscar Entertainment, CNT TECH CO.,LTD., Korea Credit Data, MannaCEA , Manna Town, Farmit, Farmit2, Left Right Co., Ltd., SCI VENTURE, INC., Rebittance Inc., SHOELAB CO., LTD, LUXROBO Co., Ltd., Deleo Korea Co.,Ltd., Skelter Labs, Inc., TOROOC Inc., Dreamcide SPC Ltd., DIGISONIC Co., Ltd., D&C MEDIA CO.,LTD., D&C OF STORM CO.,LTD., K Cube NEO Fund, BUNJANG Corp., Supergene Inc., InnoSignal Co.,Ltd., PoteNit Co.,Ltd., Doctorbrain SPC Ltd., CLAIR, Inc., KIF-Kakao Wooribank Technology Financing Fund, 13MILE.CO.LTD, ADSOTA CORP., CARDOC Inc., LUFTT KOREA Inc., YANADOO Co., Ltd.(formerly, Kakao Kids), FOR YOUR KIDS CO.,LTD., Fixel Hub Co.,Ltd., NOWBUSKING COMPANY, LINE WORK Corp., CHEQUER Inc., Hasys Co.,ltd, Mycelebs, DAIWAON. C. I. INC, Haksan Publinshing Co.Ltd., PEOPLEFUND COMPANY, Seoul Media Comics, UBCARE CO., LTD., Imitation SPC Ltd., GC SOCIAL MEDIA MARKETING, INC., Sixshop, Glohow Holdings PTE. LTD., TIDESQUARE, MOVILL Co.Ltd, LEEJIGO CO.,LTD., Ltd., G&G Enterprise Co.Ltd., KakaoBank Corp., DXM CO.,LTD, DOZEN CO.,LTD, UNION K-Culture Contents Investment Fund, DAEYOUNG CHAEVI, 325E&C Co., Ltd., Ocean Drive Studio Co., Ltd.,Aen Corp., KW books, EDAM Entertainment, Un7qi3 Corp., Tangram Factory, KASA NETWORK PTE. LTD, Social bean, Allstay Co.,LTD and other 61 companies
Joint ventures	DAUMKAKAO PHILIPPINES CORP., AsanKakao Medical Data Co., Ltd., PINPLAY JAPAN Co., PHI DIGITAL HEALTHCARE Inc., The Bridges of Madison County Co., Ltd.
Other related parties	K Cube Holdings Co., Ltd., T for Invest, New learn English Inc., Onyx K., Golf & Data System, PLUS 2 PERCENT, NPLUTO, GOLF&FRIEND CO.,LTD., LKMS Limited, LKMS Re, Daeheung Co., Ltd., Kakao Impact Foundation, GAMERS FOUNDATION

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows:

1) Transactions with the related parties

a) June 30, 2020

(in thousands of won)	**June 30, 2020**					
	Revenues and others			**Expenses and others**		
	Operating revenue	**Interest income**	**Other income**	**Service fee**	**Advertising expense**	**Others**
Associates						
4ukids	₩ 125,260	-	-	-	-	2,928
Hasys Co.,ltd	1,387,338	-	-	-	-	4,370
Korea Credit Data	486,961	-	-	-	-	-
Stagefive Co. Ltd	24,683,094	-	-	7,179	-	1,983,135
Adlock Advertainment	172	-	-	-	-	-
KakaoBank Corp.	3,165,909	60	-	2,084,601	-	22,684
K Cube NEO Fund	101,638	-	-	-	-	-
KIF-KakaoWooribank Technology Financing Fund	368,602	-	-	-	-	-
YANADOO Co., Ltd.	56,740	-	-	1,557	-	-
TIDESQUARE	1,147	-	-	-	-	-
Nowbusking	2,005	-	-	1,525	-	-
DAIWAON. C. I. INC	87,986	-	-	864,311	-	-
Haksan Publinshing Co.Ltd	-	-	-	1,469,559	-	2,648
Pixel Hub	4,812	-	-	2,548	-	-
Leferi	48,445	-	-	-	-	-
Culture hero	40,285	-	-	-	1,600	-
G&G Enterprise Co Ltd	36,876	-	-	-	-	93,779
Social bean	17,372	-	-	436	-	136,695
C&T Tech	323,424	-	-	269,980	-	-
Babyfriends	1,205	-	-	-	-	-
MANNACEA	11,490	-	-	70,175	-	-
CLAIR, Inc.	661	-	-	-	-	124,750
Tangramfactory	230	-	-	-	-	-
Dr.Kitchen	224	-	-	-	-	-
Shoe Lab	65	-	-	-	-	-
CARDOC Inc	9,470	-	-	-	-	-
LUFTT Korea	413	-	-	-	-	-
EDAM Entertainment Corp	62,867	-	34,736	1,300	-	1,148,543
325 E&C	-	-	-	-	-	603,110
MOVILL Co.Ltd	-	33,314	-	-	-	-
PEOPLEFUND COMPANY	1,602,094	-	-	-	-	-
13 Mile Co., Ltd.	52	10,322	-	416	-	-
DOZEN CO.,LTD	31,960	-	-	404,187	-	-
Sixshop	13,196	-	-	27,193	-	-
Deleo Korea Co.,Ltd.	-	-	-	825	-	-
Seoul Media Comics	22,629	-	-	962,298	-	-
Futurewiz	42,580	-	-	-	-	-

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows, continued:

1) Transactions with the related parties, continued

a) June 30, 2020, continued

(in thousands of won)	**June 30, 2020**					
	Revenues and others			**Expenses and others**		
	Operating revenue	**Interest income**	**Other income**	**Service fee**	**Advertising expense**	**Others**
MONOLITH	₩ 4	-	-	-	-	-
Life Lab	3,229	-	-	-	-	-
D&C MEDIA CO.,LTD	72,263	-	-	13,537,617	-	-
TAPAS MEDIA, INC.	147,637	-	-	-	-	-
Doctorbrain SPC Ltd	1,800	-	-	-	-	-
Mycelebs	-	-	-	549,182	-	-
KW Books	-	-	-	6,724,295	-	-
Super Comics studio	-	-	-	458,377	-	-
NBT Inc	113,058	-	-	479,195	-	-
Dunamu Inc.(*)	508,789	-	-	136,888	-	-
Applepie Studio	-	-	-	45,645	-	-
Sub-total	33,583,982	43,696	34,736	28,099,289	1,600	4,122,642
Joint venture						
Asankakao Medical Data Co., Ltd.	16,044	-	-	-	-	-
Other related parties						
Kakao Impact Foundation	215,568	-	-	-	-	-
K Cube Holdings	120,000	-	-	-	-	-
Gamers Foundation	-	-	768	-	-	-
LKMS Limited	-	-	-	-	-	58,453
Sub-total	351,612	-	768	-	-	58,453
Total	₩ 33,935,594	43,696	35,504	28,099,289	1,600	4,181,095

(*) Received dividends of ₩ 2,637 million from Dunamu Inc. and DAUM Venture Fund and the dividends amount is not included in the above table.

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows, continued:

1) Transactions with the related parties, continued

b) June 30, 2019

(in thousands of won)		June 30, 2019				
		Revenues and others			Expenses and others	
		Operating revenue	Interest income	Other income	Service fee	Others
Associates						
Hasys co.,ltd	₩	1,217,238	-	-	-	-
BUNJANG CO.,LTD		14	-	700	35	72,660
K Cube NEO Fund		240,625	-	-	-	-
KIF-KakaoWooribank Technology Financing Fund		760,000	-	-	-	-
YANADOO Co., Ltd.		70,811	-	-	-	2,024
4ukids		550,826	-	-	-	-
TIDESQUARE		304	-	-	-	-
DAIWAON. C. I. INC		22,832	-	-	79,784	23,945
Nowbusking		10	-	-	2,062	930
Pixel Hub		9,341	-	-	2,541	-
Haksan Publinshing Co.Ltd		-	-	-	881,355	-
CLAIR, Inc.		113	-	-	-	207,371
CARDOC Inc		16,780	-	-	-	13,112
Shoe Lab		320	-	-	-	-
MANNACEA		77,138	-	-	93,858	5,387
NBT Inc		61,764	-	-	512,156	-
Leferi		51,389	-	-	-	-
LUFTT Korea		289	-	-	-	40
MOVILL Co.Ltd		-	6,150	-	-	-
PEOPLEFUND COMPANY		411,688	-	-	-	-
13 Mile Co., Ltd.		117	10,265	-	2,614	-
C&T Tech		436,195	-	-	349,284	-
Dunamu Inc.(*)		456,563	-	-	66,344	-
Sixshop		11,871	-	-	3,580	-
Deleo Korea Co.,Ltd.		-	-	-	27	-
TAPAS MEDIA, INC.		56,246	-	-	-	-
D&C MEDIA CO.,LTD		28,698	-	-	7,572,256	13,963
Doctorbrain SPC Ltd		1,800	-	-	-	-
Mycelebs		-	-	-	22,518	-
Seoul Media Comics		-	-	-	621,402	13,934
Futurewiz		3	-	-	-	-
Korea Credit Data		716,536	-	-	-	-
Tagosolutions		49,749	-	-	-	-
Sub-total		5,249,260	16,415	700	10,209,816	353,366
Other related parties						
Gamers Foundation		-	-	768	-	-
Kakao Impact Foundation		94,270	-	-	-	1,611,617
Sub-total		94,270	-	768	-	1,611,617
Total	₩	5,343,530	16,415	1,468	10,209,816	1,964,983

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows continued:

1) Transactions with the related parties, continued

b) June 30, 2019, continued

(*) Received dividends of ₩ 1,615 million from Dunamu Inc. and the dividends amount is not included in the above table.

2) Receivables and payables to the related parties

a) June 30, 2020

(in thousands of won)	June 30, 2020				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates					
4ukids	₩ 56,215	-	46,880	900	-
Hasys co.,ltd	235,958	-	356,525	727,192	-
Stagefive Co. Ltd	5,845,076		1,058,867	272,700	1,178,739
KakaoBank Corp	362,246	-	14,508,728	400,692	76,241
C&T Tech	30,754		-	80,358	-
K Cube NEO Fund	221,950	-	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	742,203	-	-	-	-
YANADOO Co., Ltd.	933	-	-	-	-
TIDESQUARE	47	-	-	-	-
Nowbusking	-	-	-	287	-
DAIWAON. C. I. INC	42,095	-	403,878	48,198	-
Haksan Publishing Co., Ltd.	-	-	2,271,888	91,011	-
Pixel Hub	347	-	154	-	-
G&G Enterprise Co.,Ltd	-	-	-	21,816	-
Social bean	-	-	-	4,055	-
MANNACEA	8,580	-	-	13,648	-
CLAIR, Inc.	-	-	-	42,226	-
Tangram Factory	-	-	-	59	-
babyfriends	-	-	-	763	-
Culture hero	-	-	-	177	-
Dr.Kitchen	-	-	-	59	-
EDAM Entertainment Corp	63,163	-	4,516,546	3,266	6,352
325 E&C	-		2,771,454	-	15,742
MOVILL Co.Ltd	-	1,680,000	-	-	-
PEOPLEFUND COMPANY	136,081	-	-	-	-
13 Mile Co., Ltd.	-	450,000	9,074	328	-
DOZEN CO.,LTD	4,847	-	-	103,626	-
Sixshop	-	-	-	5,721	-
Deleo Korea Co.,Ltd.	-	-	-	147	-
Future Wiz	21,333	-	-	-	-
D&C MEDIA CO.,LTD	17,042	-	4,103,418	3,420,481	1,444

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows, continued:

2) Receivables and payables to the related parties, continued

a) June 30, 2020, continued

(in thousands of won)		June 30, 2020				
		Receivables			Payables	
		Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
TAPAS MEDIA, INC	₩	96,063	-	-	-	-
Dreamcide SPC Ltd.		-	-	400,000	-	-
Doctor Brain SPC Ltd.		990	-	400,000	-	-
Mycelebs		-	-	890,279	155,389	-
Seoul Media Comics		-	-	767,521	310,252	-
KW Books		-	-	1,240,864	621,600	-
Super Comics studio		-	-	130,552	44,432	-
KROSS PICTURES		-	-	282,000	-	-
NBT Inc.		1,931	-	38,594	140,755	-
Dunamu Inc.		116,940		-	36,886	
Applepie Studio		-	-	-	9,383	-
Sub-total		8,004,794	2,130,000	34,197,222	6,556,407	1,278,518
Other related parties						
Kakao Impct Foundation		22,193	-	-	-	5,654
Gamers Foundation		-	-	141	-	-
LKMS Limited		-	-	34,324	4,307	114,399
Sub-total		22,193	-	34,465	4,307	120,053
Total	₩	8,026,987	2,130,000	34,231,687	6,560,714	1,398,571

b) December 31, 2019

(in thousands of won)		December 31, 2019				
		Receivables			Payables	
		Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates						
4ukids	₩	21,628	-	-	1,110	76,674
K Cube NEO Fund		120,313	-	-	-	-
KIF-Kakao Wooribank Technology Financing Fund		373,602	-	-	-	-
YANADOO Co., Ltd(formerly, Kakao Kids)		8,085	-	-	225	-
Pixel Hub		462	-	616	3,250	-
Hasys co.,ltd		234,341	-	669,202	790,127	-
DAIWAON. C. I. INC		38,556	-	462,477	242,910	-
Haksan Publishing Co Ltd		-	-	2,325,834	399,170	-
G&G Enterprise Co.,Ltd		3,300	-	-	51,996	-
CLAIR, Inc		-	-	-	35,280	-
Tangram Factory		-	-	-	75	-
KakaoBank Corp.		332,000	-	10,562,866	316,863	-
MANNACEA		20,735	-	-	27,361	-

25.Related Party Transactions, Continued

(2) Transactions with the related parties for the six-month periods ended June 30, 2020 and 2019 and the receivables from and payables to the related parties as of June 30, 2020 and December 31, 2019 are as follows, continued:

2) Receivables and payables to the related parties, continued

b) December 31, 2019, continued

(in thousands of won)		December 31, 2019				
		Receivables			Payables	
		Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
BUNJANG Corp.	₩	-	-	-	7,667	-
UBCARE CO., LTD.		-	-	-	69,326	-
MOVILL Co.Ltd		-	1,300,000	-	-	-
PEOPLEFUND COMPANY		199,978	-	-	-	-
13 Mile Co., Ltd.		-	450,000	3,913	238	-
DOZEN CO.,LTD		4,940	-	-	59,024	-
Sixshop		-	-	-	3,580	-
Deleo Korea Co.,Ltd.		-	-	-	177	-
Tapas Media,. Inc.		35,792	-	-	-	10,864
NBT Inc.		2,065	-	68,452	89,207	-
D&C MEDIA CO.,LTD		18,988	-	2,917,515	1,991,041	1,597
Dreamcide SPC Ltd.		-	-	400,000	-	-
Doctor Brain SPC Ltd.		990	-	400,000	-	-
Mycelebs		110,000	-	898,796	92,524	-
SEOUL MEDIA.INC		-	-	823,276	100,966	-
KW Books		-	-	1,397,299	539,422	-
Dunamu Inc.		77,514	-	-	22,483	-
Nowbusking		-	-	-	142	-
CNT TECH CO., LTD.		39,199	-	-	325,861	-
TIDESQUARE		116	-	-	-	-
CARDOC Inc.		-	-	-	6,357	-
LUFTT Korea		-	-	-	7,191	-
Social Bean		-	-	-	16,811	-
325 E&C		-	-	2,234,876	206,528	15,742
EDAM Entertainment Corp		11,922	-	-	855,707	-
Shoe Lab		42	-	-	-	-
Sub-total		1,654,568	1,750,000	23,165,122	6,262,619	104,877
Other related parties						
Kakao Impact Foundation		16,661	-	-	-	-
LKMS Limited		-	-	2,000	27,500	115,645
K Cube Holdings		-	-	-	-	2,500,000
Gamers Foundation		-	-	422	-	-
Sub-total		16,661	-	2,422	27,500	2,615,645
Total	₩	1,671,229	1,750,000	23,167,544	6,290,119	2,720,522

25. Related Party Transactions, Continued

(3) Loans arising from related parties for the six-month periods ended June 30, 2020 and 2019, are as follows:

a) June 30, 2020

(in thousands of won)		June 30, 2020			
		Beginning balance	**Loans**	**Repayments**	**Ending balance**
Associates					
13 Mile Co., Ltd.	₩	450,000	-	-	450,000
MOVILL Co., Ltd		1,300,000	380,000	-	1,680,000
Sub-Total		1,750,000	380,000	-	2,130,000
Other related parties					
LKMS Limited		-	114,399	-	114,399
Total	₩	1,750,000	494,399	-	2,244,399

b) June 30, 2019

(in thousands of won)		June 30, 2019				
		Beginning balance	**Loans**	**Repayments**	**Changes in scope of consolidation**	**Ending balance**
Associates						
13 Mile Co., Ltd.	₩	450,000	-	-	-	450,000
MOVILL Co., Ltd		-	800,000	-	-	800,000
Others		100,000	200,000	(100,000)	(200,000)	-
Total	₩	550,000	1,000,000	(100,000)	(200,000)	1,250,000

During the six-month periods ended June 30, 2020 and 2019, the Group made contribution in cash to certain related parties (Note 9).

(4) Key management compensation

The compensation paid or payable to key management for the three-month and six-month periods ended June 30, 2020 and 2019 consists of:

(*in thousands of won*)

		2020		2019	
		Three-month Period	**Six-month Period**	**Three-month Period**	**Six-month Period**
Salaries	₩	1,210,436	2,931,511	424,100	848,201
Retirement benefit expense		30,859	61,718	27,719	55,438
Other long-term employee benefits		7,014	14,029	6,270	12,540
Share-based payments		175,652	375,461	211,888	460,011
Total	₩	1,423,961	3,382,719	669,977	1,376,190

26.Subsequent Events

(1) Pursuant to the resolution of the board of directors' meeting held on June 19, 2020, Kakaopay Corp, a subsidiary, issued new shares through a third-party allotment on July 27, 2020. The number of shares issued is 3,241,294 shares and the amount of proceeds is ₩ 160,006 million.

(2) Pursuant to the resolution of the board of directors' meeting held on June 19, 2020, the Parent Company acquired 906,937 shares (amounting to USD 36,909,098, ₩ 44.2 billion) of Kakaopay Corp on July 27, 2020. The percentage of ownership after the acquisition is 56.1%.

(3) Pursuant to the resolution of the board of directors' meeting held on August 5, 2020, the Parent Company decided to merge and acquire the license business segment of Kakao IX Corp, a subsidiary.

Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
Kakao Corp.

Opinion

We have audited the accompanying consolidated financial statements of Kakao Corp. and its subsidiaries (collectively the "Company"), which comprise the consolidated statements of financial position as at December 31, 2019 and 2018 and the consolidated statements of comprehensive income(loss), changes in equity and cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as at December 31, 2019 and 2018, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS).

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Company in accordance with the ethical requirements of the Republic of Korea that are relevant to our audit of the consolidated financial statements and we have fulfilled our other ethical responsibilities in accordance with the ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

A. Recognition of revenue from Search and Moment advertising

Key Audit Matter

We considered its size and complexity of revenue from Search and Moment advertising amounting to ₩ 471.9 billion recognized in 2019. Revenue from Search and Moment advertising depends on the terms of the contracts with a number of advertisers and advertising agency, and the amount of revenue from Search and Moment advertising of the Company is determined and recorded in a financial system through a complex process based on large amounts of data including a number of customer information and various contract terms aggregated in the sales system (Note 2). There is a potential risk that the amount of revenue would be improperly recognized due to such complex process and large amounts of data. As a result, we determined that there is a significant risk in relation to the occurrence of the revenue from Search and Moment advertising.

How our audit addressed the Key Audit Matter

We have performed the following audit procedures to assess the appropriateness of accounting for recognition of revenue from Search and Moment advertising of the Company:

- Obtained understanding of and evaluated accounting policies and controls of the Company regarding recognition of revenue from Search and Moment advertising
- Tested the effectiveness of control activities for general computer controls on the operating system (program change, security, computer operation and other)
- Tested the effectiveness of the controls for monitoring the non-charged amounts in the operating system by testing samples
- Examined the accuracy of the charged amounts in the operating system through an independent reperformance
- Examined the effectiveness of the control in relation to a pre-approval for the change of data by testing samples and inspecting the relevant evidence documents
- Reconciled the amount of revenue recorded in the operating system to the amount of revenue recognized in the financial accounting system
- Examined the accuracy of operating income recognized through performing sample test with screening of evidence documents

B. Impairment of goodwill of cash-generating units of internet portal and other services and music services

Key Audit Matter

As at December 31, 2019, goodwill of cash-generating unit of internet portal and other services amounts to ₩ 1,081,856 million and goodwill of cash-generating units of music services amounts to ₩ 868,551 million (Note 19). The Company performed the impairment tests on the above goodwill using value-in-use calculations based on the discounted cash flow (Note 3). We determined accounting for the above goodwill as a key audit matter considering its significant magnitude (₩1,950,407 million) and

management's significant judgements and estimates about discount rate, growth rate and future cash flow forecasts used for value-in-use calculations.

How our audit addressed the Key Audit Matter

We performed the following key audit procedures for the impairment tests on the above goodwill

- Obtained an understanding of the Company's policies, procedures and internal controls in relation to accounting for impairment on goodwill
- Evaluated the adequacy of valuation model used by management to estimate value-in-use
- Evaluated the qualification and independence of an external specialist hired by the company
- Evaluated internal control for the management's review and approval in relation to future cash flow estimates and evaluation for impairment tests
- Evaluated whether future cash flow is reasonably estimated based on a business plan reported to management
- Evaluated the reasonableness of key assumptions used to estimate value-in-use
- Evaluated the results of a sensitivity analysis on the discount rates and the perpetual growth rates performed by management to assess the impact of changes in key assumptions on the impairment tests

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with Korean IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Korean Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Company audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Among the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period as the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Bum-Tak Lee, Certified Public Accountant.

/s/ Samil PricewaterhouseCoopers
Seoul, Korea
March 17, 2020

This report is effective as at March 17, 2020, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

Kakao Corp. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2019 and 2018

(in millions of Korean won)	Notes		2019		2018
Assets					
Current assets					
Cash and cash equivalents	4,5,7,8,37	₩	1,918,225	₩	1,247,013
Short-term financial instruments	4,5,7,8		207,767		924,215
Financial assets at fair value through profit or loss	5,7,10		49,512		25,781
Derivative financial assets	4,5,7,10,26		1,112		1,174
Trade receivables	4,5,7,10		157,221		193,669
Other current financial assets	4,5,7,10		252,486		207,656
Inventories	15		49,450		35,836
Other current assets	14		193,921		223,605
			2,829,694		2,858,950
Non-current assets					
Long-term financial instruments	4,5,7,8		50,062		50,689
Financial assets at fair value through profit or loss	4,5,7,10		127,148		104,846
Financial assets at fair value through other comprehensive income	4,5,7,10		419,265		329,345
Investments in associates and joint venture	16		978,944		305,188
Other non-current financial assets	4,5,7,10		92,355		58,321
Property and equipment	17		349,818		314,812
Intangible assets	19		3,548,416		3,865,265
Investment property	18		2,843		-
Right-of-use assets	20,42		227,458		-
Other non-current assets	14		50,548		16,412
Deferred income tax assets	24		60,703		55,716
			5,907,561		5,100,592
Total assets		₩	8,737,256	₩	7,959,542
Liabilities					
Current Liabilities					
Trade and other payables	4,5,7,12	₩	578,567	₩	460,813
Short-term borrowings	4,5,7,21		448,596		609,480
Deposits received	4,5,7,13		299,564		129,889
Other current financial liabilities	4,5,7,13		25,256		20,526
Income tax payable			68,348		71,040
Provisions	25		7,081		3,636
Derivative financial liabilities	5,7,26		18,290		13,916
Short-term lease liabilities	4,20,42		68,077		-
Other current liabilities	14		919,543		729,896
			2,433,322		2,039,196

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2019 and 2018

(in millions of Korean won)	Notes		2019		2018
Non-current liabilities					
Non-current trade and other payables	4,5,7,12		32,872		389
Long-term borrowings	4,5,7,21		72,269		44,995
Non-current provisions	25		14,844		7,611
Non-current derivative financial liabilities	5,7,26		7,372		-
Long-term lease liabilities	4,20,42		164,989		-
Net defined benefit liabilities	22		3,555		2,822
Other long-term employee benefits liabilities	23		43,592		40,156
Deferred income tax liabilities	24		141,056		151,228
Other non-current financial liabilities	4,5,7,13		62,843		45,869
Other non-current liabilities	14		20,424		118
			563,816		293,188
Total liabilities		₩	2,997,138	₩	2,332,385
Equity					
Share capital	1,27	₩	43,161	₩	41,744
Share premium	27		5,043,199		4,647,543
Other component of equity	29		7,238		1,492
Accumulated other comprehensive loss	30		(16,393)		(7,329)
Retained earnings	31		148,154		453,400
Equity attributable to owners of the Parent Company			5,225,359		5,136,851
Non-controlling interest			514,759		490,307
Total equity			5,740,118		5,627,158
Total liabilities and equity		₩	8,737,256	₩	7,959,542

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Comprehensive Income(Loss)
Years Ended December 31, 2019 and 2018

(in millions of Korean won, except per share amounts)	Note	2019	2018
Revenue	6	₩ 3,070,111	₩ 2,416,992
Operating expenses	32	2,861,514	2,340,959
Impairment loss on trade receivables	41	1,811	3,084
Operating profit		206,786	72,949
Other non-operating income	33	73,755	74,531
Other non-operating expenses	33	521,412	85,772
Finance income	34	70,386	112,453
Interest income		31,700	41,783
Other finance income		38,686	70,670
Finance costs	34	44,000	50,143
Share of income of associates and joint venture	16	11,490	32,257
Share of loss of associates and joint venture	16	31,261	25,605
Profit (loss) before income tax		(234,257)	130,670
Income tax expense	24	107,668	114,781
Profit (loss) for the year		(341,925)	15,889
Profit (loss) is attributable to:			
Equity holders of the Parent Company		(301,003)	47,886
Non-controlling interest		(40,922)	(31,997)
Other comprehensive income (loss)			
Items not to be reclassified subsequently to profit or loss:			
Remeasurement of net defined benefit liabilities		(6,452)	(2,680)
Gain (loss) on valuation of equity instruments at fair value through other comprehensive income		(532)	6,870
Revaluation surplus		222	-
Items to be reclassified subsequently to profit or loss:			
Gain on valuation of debt instruments at fair value through other comprehensive income		-	142
Share of other comprehensive loss of associates, net of tax		(3,547)	(36)
Foreign currency translation adjustments, net of tax		6,151	4,038
Other comprehensive income (loss) for the year, net of tax		(4,158)	8,334
Total comprehensive income (loss) for the year		₩ (346,082)	₩ 24,223
Total comprehensive income (loss) for the year is attributable to:			
Equity holders of the Parent Company		₩ (304,258)	₩ 59,297
Non-controlling interest		₩ (41,825)	₩ (35,074)
Earnings (loss) per share to the equity holders of the Parent Company			
Basic earnings (loss) per share	35	₩ (3,776)	₩ 623
Diluted earnings (loss) per share	35	₩ (3,776)	₩ 614

The above consolidated statements of comprehensive income(loss) should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2019 and 2018

(in millions of Korean won)	Note	Attributable to equity holders of the Parent Company						Non-controlling Interest	Total Equity
		Share Capital	Share Premium	Other Components of Equity	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total		
Balance at January 1, 2018		₩ 34,004	₩ 3,603,587	₩ (6,026)	₩ (4,968)	₩ 402,542	₩ 4,029,139	₩ 433,783	₩ 4,462,923
Cumulative effect of change in accounting policy		-	-	-	(13,773)	13,022	(751)	532	(219)
Balance at January 1, 2018 (as adjusted)		₩ 34,004	₩ 3,603,587	₩ (6,026)	₩ (18,741)	₩ 415,565	₩ 4,028,389	₩ 434,316	₩ 4,462,704
Comprehensive income :									
Profit (loss) for the year		-	-	-	-	47,886	47,886	(31,997)	15,889
Foreign currency translation adjustments, net of tax	30	-	-	-	3,817	-	3,817	221	4,038
Share of other comprehensive loss of associates, net of tax	30	-	-	-	(36)	-	(36)	-	(36)
Gain (loss) on valuation of equity instruments at fair value through other comprehensive income	30	-	-	-	9,654	-	9,654	(2,784)	6,870
Gain on valuation of debt instruments at fair value through other comprehensive income	30	-	-	-	142	-	142	-	142
Remeasurement of employee benefits	22,30	-	-	-	(2,165)	-	(2,165)	(515)	(2,680)
Total comprehensive income for the year		-	-	-	11,411	47,886	59,297	(35,074)	24,223
Transactions with equity holders:									
Exercise of stock options	27,28	50	1,053	(228)	-	-	875	3,045	3,920
Share-based compensation	28	-	-	7,983	-	-	7,983	4,189	12,172
Proceeds from issuance of new shares		4,131	1,046,772	-	-	-	1,050,902	-	1,050,902
Conversion of convertible bonds	21,27	13	2,976	-	-	-	2,989	-	2,989
Cash dividends and distribution of investments		-	-	-	-	(10,050)	(10,050)	(3,420)	(13,470)
Change in ownership interest over subsidiaries		-	(3,534)	-	-	-	(3,534)	30,908	27,374
Merger with subsidiary		3,546	(3,310)	(236)	-	-	-	-	-
Change in scope of consolidation		-	-	-	-	-	-	56,343	56,343
Total transactions with equity holders		7,740	1,043,957	7,518	-	(10,050)	1,049,165	91,066	1,140,231
Balance at December 31, 2018		₩ 41,744	₩ 4,647,543	₩ 1,492	₩ (7,329)	₩ 453,400	₩ 5,136,851	₩ 490,307	₩ 5,627,158

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2019 and 2018

(in millions of Korean won)	Note	Attributable to equity holders of the Parent Company						Non-controlling Interest	Total Equity
		Share Capital	Share Premium	Other Components of Equity	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total		
Balance at January 1, 2019		₩ 41,744	₩ 4,647,543	₩ 1,492	₩ (7,329)	₩ 453,400	₩ 5,136,851	₩ 490,307	₩ 5,627,158
Comprehensive income :									
Loss for the year		-	-	-	-	(301,003)	(301,003)	(40,922)	(341,925)
Foreign currency translation adjustments, net of tax	30	-	-	-	5,409	-	5,409	742	6,151
Share of other comprehensive loss of associates, net of tax	30	-	-	-	(3,600)	-	(3,600)	53	(3,547)
Changes in revaluation surplus	30	-	-	-	222	-	222	-	222
Gain (loss) on valuation of financial instruments at fair value through other comprehensive income	30	-	-	-	217	-	217	(749)	(532)
Reclassification of gain on valuation of financial instruments at fair value through other comprehensive income	30	-	-	-	(5,809)	5,809	-	-	-
Remeasurement of employee benefits	22,30	-	-	-	(5,502)	-	(5,502)	(950)	(6,452)
Total comprehensive income for the year		-	-	-	(9,064)	(295,194)	(304,258)	(41,825)	(346,082)
Transactions with equity holders:									
Exercise of stock options	27,28	192	34,788	(4,615)	-	-	30,364	745	31,108
Share-based compensation	28	-	-	10,361	-	-	10,361	11,083	21,444
Proceeds from issuance of new shares	27	1,089	298,847	-	-	-	299,936	-	299,936
Conversion of convertible bonds	21,27	137	32,399	-	-	-	32,536	-	32,536
Cash dividends	36	-	-	-	-	(10,053)	(10,053)	(200)	(10,253)
Change in ownership interest over subsidiaries		-	29,622	-	-	-	29,622	94,400	124,021
Change in scope of consolidation		-	-	-	-	-	-	(39,750)	(39,750)
Total transactions with equity holders		1,417	395,655	5,746	-	(10,053)	392,766	66,277	459,043
Balance at December 31, 2019		₩ 43,161	₩ 5,043,199	₩ 7,238	₩ (16,393)	₩ 148,154	₩ 5,225,359	₩ 514,759	₩ 5,740,118

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2019 and 2018

(in millions of Korean won)	Note	2019	2018
Cash flows from operating activities			
Cash generated from operations	37	₩ 831,143	₩ 608,033
Interest received		38,171	35,898
Interest paid		(11,381)	(11,532)
Dividend received		5,329	381
Income tax paid		(110,595)	(141,310)
Net cash inflow from operating activities		752,667	491,470
Cash flows from investing activities			
Decrease (increase) in short-term financial instruments		593,555	(514,098)
Decrease (increase) in long-term financial instruments		1	(38,432)
Purchase of property and equipment		(106,364)	(97,197)
Disposal of property and equipment		7,109	11,926
Purchase of intangible assets		(62,337)	(49,084)
Disposal of intangible assets		7,011	3,724
Acquisition of financial assets at fair value through profit or loss		(88,952)	(60,769)
Disposal of financial assets at fair value through profit or loss		168,679	12,016
Acquisition of financial assets at fair value through other comprehensive income		(331,689)	(240,039)
Disposal of financial assets at fair value through other comprehensive income		3,910	1,486
Acquisition of associates and joint ventures		(453,986)	(155,618)
Disposal of associates and joint ventures		38,965	13,973
Acquisition of subsidiaries and in scope of consolidation, net of cash acquired		(111,221)	(114,638)
Disposal of subsidiaries and in scope of consolidation, net of cash disposed		(27,227)	(5,659)
Increase in other financial assets		(23,716)	(2,419)
Decrease in other financial assets		5,626	4,768
Increase in other non-current financial assets		(35,430)	(14,997)
Decrease in other non-current financial assets		2,414	7,401
Other cash outflow from investing activities		(536)	(23,066)
Net cash outflow from investing activities		(414,187)	(1,260,722)
Cash flows from financing activities			
Proceeds from short-term borrowings		318,131	33,053
Repayments of short-term borrowings		(344,379)	(172,403)
Proceeds from long-term borrowings		38,043	7,987
Repayments of long-term borrowings		(1,124)	(4,758)
Proceeds from exchangeable bonds		8,040	-
Repayments of bonds		(110,000)	-
Principal elements of lease payments		(43,045)	-
Proceeds from issuance of new shares		299,936	1,050,902
Exercise of stock options		31,108	3,920
Payments of dividends		(10,253)	(12,044)
Acquisition of treasury shares		-	(236)
Acquisition of non-controlling interests		-	(226,963)
Distribution of investments		-	(1,426)
New shares issued by subsidiaries (to non-controlling interest shareholders)		135,218	212,509
Other cash flows from financing activities		529	(24)
Net cash inflow from financing activities		₩ 322,204	₩ 890,517

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2019 and 2018

(in millions of Korean won)	Note	2019	2018
Net increase in cash and cash equivalents		₩ 660,684	₩ 121,265
Effect of exchange rate changes on cash and cash equivalents		10,528	8,955
Cash and cash equivalents at the beginning of year		1,247,013	1,116,793
Cash and cash equivalents at the end of year		₩ 1,918,225	₩ 1,247,013

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

1. General Information

Kakao Corp. (the "Parent Company") has prepared the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("Korean IFRS") 1110, *Consolidated Financial Statements*, and its consolidated subsidiaries include Daum Global Holdings and 101 entities.

1.1 The Company

General information about Kakao Corp. and its subsidiaries (collectively, the "Company") is as follows:

The Parent Company was incorporated in February 1995 and provides advertising services, contents offerings including Emoticons, games and music, and other online services through its online platforms.

The Parent Company was listed on the KOSDAQ market in Korea on November 9, 1999 and was transferred to the KOSPI market in Korea on July 10, 2017.

The Parent Company's headquarter is located in Youngpyong-dong, Jeju City, in Jeju Province, Korea. As at December 31, 2019, the Parent Company's share capital amounted to ₩ 43,161 million and the Parent Company's shareholders are as follows:

	Number of shares	Percentage of ownership (%)
Kim Bum Soo	12,514,461	14.5
K Cube Holdings Co., Ltd.	9,939,467	11.5
National Pension Service	7,907,180	9.2
MAXIMO PTE. LTD.	5,599,849	6.5
Other related parties	221,981	0.3
Others	45,806,206	53.1
	81,989,144	95.1
Treasury shares	4,233,492	4.9
	86,222,636	100.0

Details of the consolidated subsidiaries as at December 31, 2019, are as follows:

(in millions of Korean won, except number of shares) Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
Daum Global Holdings	₩ 2,554	Holding company	Korea	December 31	510,810	100.0
PATH MOBILE INC. PTE. LTD.	59,734	Service operations	Singapore	December 31	82,284,405	100.0
PT. Path Mobile Indonesia [16]	11,214	Service operations	Indonesia	December 31	9,903,818	100.0
KnWorks Co., Ltd. (formerly, DK Service) [29]	511	Service operations	Korea	December 31	102,136	100.0
DK Techin	1,500	Service operations	Korea	December 31	300,000	100.0
DK CHINA Co., Ltd	1,093	Service operations	China	December 31	1	100.0
DK CHINA Sanhe Co., Ltd [2]	175	Service operations	China	December 31	1	100.0
Buzzpia Company	194	Mobile services	Korea	December 31	38,878	100.0
Beijing KAKAO Co., Ltd.	20,483	Software development and services	China	December 31	18,839,700	99.9
Acciio Inc.	198	Software development and services	Korea	December 31	200,323	50.5
KIWI PLUS	1,907	Software development and sales	Korea	December 31	2,113,526	53.1
Kakao Commerce Corp.	2,425	Wholesale and retail sales and services	Korea	December 31	24,188,513	99.7
LOC&ALL. INC.	611	Software development and services	Korea	December 31	122,231	100.0
LINKAGE LAB Co., Ltd.	149	Services	Korea	December 31	29,851	100.0
KAKAO_CCVC Jeju Creative Economy Innovative Fund	2,000	Investment/Holding company	Korea	December 31	190	95.0
KAKAO BRAIN Corp.	213	Software development	Korea	December 31	400,000	93.9
KAKAO JAPAN Corp.	51,984	Software development and services	Japan	December 31	876,620	99.4
DK CORPORATION[3]	30	Telemarketing and information service and others	Japan	December 31	300	100.0
Piccomics corp.(formerly, ZUBON Inc.) [3]	618	Electronic publication design, manufactures and sales and others	Japan	December 31	11,000	100.0
Kakao Investment Co., Ltd.	22,016	Investment/Holding company	Korea	December 31	2,201,614	100.0
K Venture Group CO., LTD. [4]	100	Investment/Holding company	Korea	December 31	10,000	100.0
Kids Note Co., Ltd.[4]	117	Software development and services	Korea	December 31	30,069	88.1
TNK Factory [4]	1,180	Mobile advertisement platform operations	Korea	December 31	2,360,390	71.5
KI SG PTE. LTD [4]	1,313	Holding company	Singapore	December 31	1,100,000	100.0
STAGEFIVE CO., LTD. (formerly, Pinplay) [4]	4,375	Software development and services	Korea	December 31	468,172	53.5
Kakao Ventures Corp.	18,511	Holding company	Korea	December 31	3,702,216	100.0
K Cube Venture Fund no.1 [6]	2,312	Investment/Holding company	Korea	December 31	140	60.6
KAKAO Venture Fund [6,27]	27,000	Investment/Holding company	Korea	December 31	102	36.7
Kakao digital contents Fund [6,27]	34,874	Investment/Holding company	Korea	December 31	150	40.4
Kakao Game Growth Share Fund [6]	30,000	Investment/Holding company	Korea	December 31	300	100.0
KAKAO IX Corp.	1,600	Contents sales	Korea	December 31	160,000	100.0
KAKAO IX JAPAN Corp.[7]	5,214	Wholesale and retail sales	Japan	December 31	100,000	100.0
KAKAO IX CHINA Co.,LTD.[7]	5,152	Wholesale and retail sales	China	December 31	4,500,000	100.0
Kakao Page Corp. [28]	9,724	Software development and services	Korea	December 31	12,355,363	63.6
Kakao PAGE PTE. LTD. [8]	825	Mobile marketing service	Singapore	December 31	985,443	100.0
SamyangCNC Co.,Ltd.[8]	50	Publishing and e-commerce	Korea	December 31	7,000	70.0
NeoBazar Inc.[8]	892	Software development and services	Korea	December 31	160,082	87.5
PT. Neo Bazar Indonesia[9]	1,814	Software development and services	Indonesia	December 31	1,597	99.8

(in millions of Korean won, except number of shares)

Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
Daon Creative inc[8]	283	Publishing, video production, broadcasting communication and information service	Korea	December 31	39,748	70.2
Beijing Da Yun cultural Communication Co.,LTD.[10]	173	Electronic publication and services	China	December 31	200,000	100.0
Kakao Games Corp.[28]	5,583	Game development and services	Korea	December 31	33,730,000	60.6
NGLE CORPORATION [12]	205	Game development and services	Korea	December 31	210,000	51.2
Friendsgames Co.,Ltd.[11]	795	Game development and services	Korea	December 31	6,937,430	82.4
SONNORI CORP.[12]	280	Services	Korea	December 31	525,410	66.7
Toonnori Corp.[13]	510	Services	Korea	December 31	52,000	51.0
Kakao Games Europe B.V.[11]	1,296	Game development and services	Netherlands	December 31	1,000,000	100.0
Kakao Games USA. Inc.[14]	2,305	Game development and services	USA	December 31	500,000	100.0
Kakao Games Japan Corp.[11]	2,024	Game development and services	Japan	December 31	2,000,000	100.0
Kakao VX[11]	9,427	Service operations	Korea	December 31	1,885,333	89.7
TAESIK MAUMGOLF CO.,LTD.[15]	578	Service operations	China	December 31	1	100.0
GSWING SPORTING GOODS CO., LTD.[15]	574	Service operations	China	December 31	1	100.0
Kakao M Corp.	3,857	Manufactures and services	Korea	December 31	6,927,740	89.8
STARSHIP ENTERTAINMENT CORP.[16,28]	62	Entertainment management	Korea	December 31	7,464	59.7
HIGHLINE ENTERTAINMENT [17]	100	Entertainment management	Korea	December 31	154,000	77.0
Play M Entertainment Corp. (formerly, PLAN A ENTERTAINMENT) [16]	50	Entertainment management	Korea	December 31	10,000	100.0
E&T Story Entertainment [16]	25	Entertainment management	Korea	December 31	30,000	60.0
Cre.ker Entertainment Co., Ltd.[16]	200	Entertainment management	Korea	December 31	32,000	80.0
GRAYGO (formerly, Krispy Studio Corporation)[16]	425	Mobile video contents production	Korea	December 31	850,000	100.0
Mega Monster Corporations[16]	13,700	Software development and services	Korea	December 31	24,400,000	89.1
J,WIDE-COMPANY[16]	53	Services	Korea	December 31	105,883	100.0
READY ENTERTAINMENT[16]	450	Services	Korea	December 31	90,000	100.0
READY ENTERTAINMENT (Shanghai) CO., LTD.[19]	83	Entertainment	China	December 31	500,000	100.0
BH Entertainment[16]	574	Services	Korea	December 31	114,815	100.0
SOOP ENTERTAINMENT CO., LTD[16,30]	1,410	Entertainment	Korea	December 31	280,200	99.4
Kakao Mobility Corp.[28]	2,394	Software development and services	Korea	December 31	16,590,000	69.3
Parking Square Inc.[20]	50	Software development and services	Korea	December 31	162,502	100.0
Kakaopay Corp.[28]	9,494	Software development and services	Korea	December 31	11,563,447	60.9
Kakao G Corp.	10,065	Software development and services	Japan	December 31	10,000,000	100.0
Ground X Corp.[23]	6,063	Software development	Japan	December 31	9,278,662	92.8
Ground1 Corp.[24]	4,967	Wholesale and retail sales and e-commerce	Korea	December 31	10,000,000	100.0
Panzea Pte. Ltd.[23]	1,143	Software development	Singapore	December 31	1,026,000	100.0
Klaytn Pte. Ltd.[25]	1,033	Software development	Singapore	December 31	100,000	100.0
KAKAO IX UK, LTD.[1,7]	997	Retail sales	UK	December 31	660,000	100.0
KAKAO IX USA, LTD.[1,7]	1,182	Retail sales	USA	December 31	1,000,000	100.0
KAKAO IX HK, LTD. [1,7]	53	Retail sales	Hong Kong	December 31	350,000	100.0
Life MMO Corp. [1,31]	1,000	Services	Korea	December 31	199,999	100.0

(in millions of Korean won, except number of shares)

Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
Add Page Corp. [1,32]	5,000	Software development and services	Korea	December 31	1,000,000	100.0
AWINS [5]	136	Wholesale toys and hobbies and playthings	Korea	December 31	20,000	73.3
Partner Co.,Ltd. [26]	32	Software development and services	Korea	December 31	322,816	100.0
AWESOMEENT CO. LTD.. [16]	500	Management service	Korea	December 31	100,000	100.0
moonlight film [16,27]	1	Movies, videos, and broadcast programs production	Korea	December 31	820	41.0
sanai pictures [16]	2	Movies, videos, and broadcast programs production	Korea	December 31	1,620	81.0
VAST.CO.,Ltd. [16]	50	Management service	Korea	December 31	10,000	100.0
FLEX M Corp [1,16]	50	Management service	Korea	December 31	100,000	100.0
SHOWNOTE Inc. [17]	324	Performance planning	Korea	December 31	64,883	100.0
Mezondbaha Corp. [18]	10	Management service	Korea	December 31	2,000	100.0
CMNP Corp. [1,20]	559	Software development and services	Korea	December 31	1,117,000	100.0
TJ Partners Corp. [1,20]	762	Taxi service	Korea	December 31	1,524,000	100.0
KM Solution Corp. (formerly, Tago Solutions Corp) [20]	25	Commodity brokerage	Korea	December 31	5,067	100.0
Jinhwa Corp. [21]	693	Taxi service	Korea	December 31	138,671	100.0
KM ONE Corp. [1,21]	69	Taxi service	Korea	December 31	138,000	100.0
KM Two Corp. [1,21]	82	Taxi service	Korea	December 31	164,000	100.0
KM Three Corp. [1,21]	80	Taxi service	Korea	December 31	160,000	100.0
KM Four Corp. [1,21]	71	Taxi service	Korea	December 31	142,000	100.0
KM Five Corp. [1,21]	71	Taxi service	Korea	December 31	142,000	100.0
KM SIX Corp. [1,21]	93	Taxi service	Korea	December 31	186,000	100.0
KM Seven Corp. [1,21]	61	Taxi service	Korea	December 31	122,000	100.0
Donggo Taxi Corp. [21]	103	Taxi service	Korea	December 31	20,696	100.0
INBYU [22]	350	Insurance and pension service	Korea	December 31	38,980	52.5
RS MEDIA Co., Ltd. [8]	325	Business and intangible property rights brokerage	Korea	December 31	46,625	71.8
Soundist Entertainment.Co.,Ltd. [8]	3,060	Production and distribution of video and audio records	Korea	December 31	367,219	60.0
Kakao Enterprise Corp. [1]	6,762	Software development and services	Korea	December 31	13,524,223	100.0

[1] Newly established in 2019.

[2] As a subsidiary of Daum Service CHINA Co., Ltd., the number of shares and the percentage of ownership represent Daum Service CHINA Co., Ltd.'s ownership as at December 31, 2019.

[3] As a subsidiary of KAKAO JAPAN Corp., the number of shares and the percentage of ownership represent KAKAO JAPAN Corp.'s ownership as at December 31, 2019.

[4] As a subsidiary of Kakao Investment Co., Ltd., the number of shares and the percentage of ownership represent Kakao Investment Co., Ltd.'s ownership as at December 31, 2019.

[5] As a subsidiary of Kids Note Co., Ltd., the number of shares and the percentage of ownership represent Kids Note Co., Ltd.'s ownership as at December 31, 2019.

[6] As a subsidiary of Kakao Ventures Corp., the number of shares and the percentage of ownership represent Kakao Ventures Corp.'s ownership as at December 31, 2019.

[7] As a subsidiary of KAKAO IX Corp., the number of shares and the percentage of ownership represent KAKAO IX Corp.'s ownership as at December 31, 2019.

[8] As a subsidiary of Kakao Page Corp., the number of shares and the percentage of ownership represent Kakao Page Corp.'s ownership as at December 31, 2019.

[9] As a subsidiary of NeoBazar Inc., the number of shares and the percentage of ownership represent NeoBazar Inc.'s ownership as at December 31, 2019.

[10] As a subsidiary of DA'ON CREATIVE, the number of shares and the percentage of ownership represent DA'ON CREATIVE's ownership as at December 31, 2019.

[11] As a subsidiary of Kakao Games Corp., the number of shares and the percentage of ownership represent Kakao Games Corp.'s ownership as at December 31, 2019.

[12] As a subsidiary of Friendsgames Co., Ltd., the number of shares and the percentage of ownership represent Friendsgames Co.,Ltd.'s ownership as at December 31, 2019.

[13] As a subsidiary of SONNORI CORP., the number of shares and the percentage of ownership represent SONNORI CORP.'s ownership as at December 31, 2019.

[14] As a subsidiary of Kakao Games Europe B.V., the number of shares and the percentage of ownership represent Kakao Games Europe B.V.'s ownership as at December 31, 2019.

[15] As a subsidiary of Kakao VX, the number of shares and the percentage of ownership represent Kakao VX's ownership as at December 31, 2019.

[16] As a subsidiary of Kakao M Corp., the number of shares and the percentage of ownership represent Kakao M Corp.'s ownership as at December 31, 2019.

[17] As a subsidiary of STARSHIP ENTERTAINMENT CORP., the number of shares and the percentage of ownership represent STARSHIP ENTERTAINMENT CORP.'s ownership as at December 31, 2019.

[18] As a subsidiary of GRAYGO (formerly, Krispy Studio Corporation), the number of shares and the percentage of ownership represent GRAYGO (formerly, Krispy Studio Corporation)'s ownership as at December 31, 2019.

[19] As a subsidiary of READY ENTERTAINMENT, the number of shares and the percentage of ownership represent READY ENTERTAINMENT's ownership as at December 31, 2019.

[20] As a subsidiary of Kakao Mobility Corp., the number of shares and the percentage of ownership represent Krispy Kakao Mobility Corp.'s ownership as at December 31, 2019.

[21] As a subsidiary of TJ Partners Corp., the number of shares and the percentage of ownership represent TJ Partners Corp.'s ownership as at December 31, 2019.

[22] As a subsidiary of Kakaopay Corp., the number of shares and the percentage of ownership represent Kakaopay Corp.'s ownership as at December 31, 2019.

[23] As a subsidiary of Kakao G Corp., the number of shares and the percentage of ownership represent Kakao G Corp.'s ownership as at December 31, 2019.

[24] As a subsidiary of Ground X Corp., the number of shares and the percentage of ownership represent Ground X Corp.'s ownership as at December 31, 2019.

[25] As a subsidiary of PANZEA PTE. LTD., the number of shares and the percentage of ownership represent PANZEA PTE. LTD.'s ownership as at December 31, 2019.

[26] As a subsidiary of Kakao Enterprise Corp., the number of shares and the percentage of ownership represent Kakao Enterprise Corp.'s ownership as at December 31, 2019.

[27] Classified as a subsidiary although the ownership is less than 50% as the Company is considered to have a control over the investees.

[28] In accordance with the agreements with non-controlling interests of some of the above subsidiaries, the Company should obtain a pre-approval from investors, when the Company wants to dispose of the investments in subsidiaries within the period specified in the agreements through a transfer to the third party or others methods not determined in the agreements such as exercise of tag-along right.

[29] During 2019, it merged with DK Service, as an existing corporation and changed name to KnWorks Co., Ltd.

[30] The Parent Company's ownership in subsidiary may change depending on the outcome of the lawsuit in which SOOP ENTERTAINMENT CO., LTD is involved, a subsidiary, as a defendant.

[31] As a subsidiary of Kakao Games Corp. and Kakao Mobility Corp., the number of shares and the percentage of ownership represent Kakao Games Corp. and Kakao Mobility Corp.'s ownership as at December 31, 2019.

[32] As a subsidiary of Kakao Games Corp. and Kakao Page Corp., the number of shares and the percentage of ownership represent Kakao Games Corp. and Kakao Page Corp.,'s ownership as at December 31, 2019.

Subsidiaries newly included in the consolidation for the year ended December 31, 2019:

Subsidiaries	Reason
KAKAO IX UK, LTD.	Newly established
KAKAO IX USA, LTD.	Newly established
KAKAO IX HK, LTD.	Newly established
Life MMO Corp.	Newly established
Add Page Corp.	Newly established
AWINS	Included to a subsidiary through acquisition of control
Partner Co.,Ltd.	Included to a subsidiary through acquisition of control
AWESOMEENT CO. LTD..	Included to a subsidiary through acquisition of control
Moonlight film	Included to a subsidiary through acquisition of control
Sanai pictures	Included to a subsidiary through acquisition of control
VAST.CO.,Ltd.	Included to a subsidiary through acquisition of control
FLEX M Corp	Newly established
SHOWNOTE Inc.	Included to a subsidiary through acquisition of control
Mezondbaha Corp.	Included to a subsidiary through acquisition of control
CMNP Corp.	Newly established
TJ Partners Corp.	Newly established
KM Solution Corp. (formerly, Tago Solutions Co., Ltd)	Included to a subsidiary from an associate through additional acquisition
Jinhwa Corp.	Included to a subsidiary through acquisition of control
KM ONE Corp.	Newly established
KM Two Corp.	Newly established
KM Three Corp.	Newly established
KM Four Corp.	Newly established
KM Five Corp.	Newly established
KM SIX Corp.	Newly established
KM Seven Corp.	Newly established
Donggo Taxi Corp.	Included to a subsidiary through acquisition of control
INBYU	Included to a subsidiary through acquisition of control
RS MEDIA Co., Ltd.	Included to a subsidiary through acquisition of control
Soundist Entertainment.Co.,Ltd.	Included to a subsidiary through acquisition of control
Kakao Enterprise Corp.	Newly established

Subsidiaries excluded from the consolidation for the year ended December 31, 2019:

Company	Reason
CASTING BOM	Merged with READY ENTERTAINMENT, a subsidiary
K-Style CORPORATION	Merged with DK CORPORATION, a subsidiary
Web Assist CORPORATION	Merged with DK CORPORATION, a subsidiary
Fave Entertainment Co., Ltd.	Merged with Play M Entertainment Corp. (formerly, PLAN A ENTERTAINMENT), a subsidiary
Nylon korea media	Disposal of investments
WIDE-S COMPANY	Disposal of investments
MOVILL Co,Ltd	Included to an associate from a subsidiary due to the designation as a special company under Financial Law
Tide Square Co., Ltd.	Included to an associate from a subsidiary due to loss of control
Polarium CO., LTD.	Included to an associate from a subsidiary due to loss of control
SQAURE LAB	Included to an associate from a subsidiary due to loss of control
CC Partners	Included to an associate from a subsidiary due to loss of control
NEXT INTERNATIONAL CO., LTD.	Included to an associate from a subsidiary due to loss of control
Playwings	Included to an associate from a subsidiary due to loss of control
Ultra Caption Corp.	Liquidation
About-time	Liquidation
Mun Hwa In Co., Ltd.	Disposal of investments
J Comics	Merged with DA'ON CREATIVE, a subsidiary
Kakao Makers Corp.	Merged with Kakao Commerce Corp., a subsidiary
DK Business	Merged with KnWorks Co., Ltd. (formerly, DK Service), a subsidiary
ImageOn Corp.	Merged with KnWorks Co., Ltd. (formerly, DK Service), a subsidiary
MTECHCREW, INC.	Merged with KnWorks Co., Ltd. (formerly, DK Service), a subsidiary

The summarized financial information for consolidated subsidiaries as at and for the year ended December 31, 2019, is as follows:

(in millions of Korean won)	2019					
	Assets	**Liabilities**	**Equity**	**Revenue**	**Profit (loss) for the year**	**Comprehensive income (loss)**
Kakao Commerce Corp.	₩ 1,037,006	₩ 683,282	₩ 353,723	₩ 296,154	₩ 57,505	₩ 57,209
Kakao M Corp.	701,175	164,358	536,817	212,869	8,962	8,969
Kakaopay Corp.	525,804	476,754	49,050	141,069	(62,479)	(62,689)
Kakao Games Corp.	520,512	95,493	425,019	322,392	33,361	22,529
Kakao Page Corp.	381,300	43,654	337,646	248,054	6,001	5,169
Kakao Mobility Corp.	252,690	37,842	214,848	97,306	(26,437)	(26,881)
Kakao Investment Co., Ltd.	251,707	8,129	243,578	85	30,047	23,921
KAKAO IX Corp.	134,927	49,098	85,829	145,005	2,692	2,925
KAKAO JAPAN Corp.	103,822	26,040	77,782	71,664	(10,185)	(5,948)
Kakao Enterprise Corp. [1]	78,120	20,047	58,073	4,779	(4,796)	(4,839)
TJ Partners Corp. [1]	76,087	159	75,928	-	(238)	(238)
STARSHIP ENTERTAINMENT CORP.	67,400	37,330	30,070	52,241	4,018	4,018
Kakao Games Europe B.V.	61,793	25,871	35,921	82,934	(3,472)	(2,899)
Kakao VX	53,372	40,788	12,585	40,806	(7,100)	(7,595)
Klaytn Pte. Ltd.	36,827	63,197	(26,370)	-	(26,658)	(26,635)
K Cube Venture Fund no.1	32,368	254	32,114	-	10,850	10,932
Friendsgames Co.,Ltd.	27,703	9,837	17,866	7,261	(2,601)	(2,877)
Kakao Ventures Corp.	26,268	1,387	24,881	5,511	2,553	2,553
	₩ 4,368,881	₩ 1,783,520	₩ 2,585,361	₩ 1,728,129	₩ 12,022	₩ (2,374)

[1] The above table represents financial information since the acquisition date.

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of Preparation

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Company's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Company have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The financial statements have been prepared on a historical cost basis, except for the following:

- Certain financial assets and liabilities (including derivative instruments), certain classes of property and equipment and investment property – measured at fair value
- assets held for sale – measured at fair value less costs to sell, and
- defined benefit pension plans – plan assets measured at fair value.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Company's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in Accounting Policy and Disclosures

(a) New and amended standards adopted by the Company

The Company has applied the following standards and amendments from its annual reporting period commencing January 1, 2019.

- Enactment of Korean IFRS 1116 *Leases*

Korean IFRS 1116 *Leases* replaces Korean IFRS 1017 *Leases.* Under the new standard, with implementation of a single lease model, lessee is required to recognize assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. A lessee is required to recognize a right-of-use asset and a lease liability representing its obligation to make lease payments.

With implementation of Korean IFRS 1116 *Lease*, the Company has changed accounting policy. The Company has adopted Korean IFRS 1116 retrospectively, as permitted under the specific transitional provisions in the standard, and recognized the cumulative impact of initially applying the standard as at January 1, 2019, the date of initial application. The Company has not restated comparatives for the 2018 reporting period. The impact of the adoption of the leasing standard and the new accounting policies are disclosed in Note 42.

- Amendment to Korean IFRS 1109 *Financial Instruments – Prepayment Features with Negative Compensation*

The narrow-scope amendments made to Korean IFRS *1109 Financial Instruments* enable entities to measure certain prepayable financial assets with negative compensation at amortized cost. When a modification of a financial liability measured at amortized cost that does not result in the derecognition, a modification gain or loss shall be recognized in profit or loss. The amendment does not have a significant impact on the financial statements.

- Amendments to Korean IFRS 1019 *Employee Benefits –Amendment, Curtailment or Settlement of the Plan*

The amendments require that an entity shall calculate current service cost and net interest for the remainder of the reporting period after a plan amendment, curtailment or settlement based on updated actuarial assumptions from the date of the change. The amendments also require that a reduction in a surplus must be recognized in profit or loss even if that surplus was not previously recognized because of the impact of the asset ceiling. The amendment does not have a significant impact on the financial statements.

- Amendments to Korean IFRS 1028 *Investments in Associates and Joint Ventures – Long-term Interests in Associates and Joint Ventures*

The amendments clarify that an entity shall apply Korean IFRS 1109 to financial instruments in an associate or joint venture to which the equity method is not applied The amendments also clarify that Korean IFRS 1109 requirements are applied to long-term interests that form part of the entity's net investment in an associate or joint venture before applying the impairment requirements of Korean IFRS 1028. The amendment does not have a significant impact on the financial statements.

- Enactment to Interpretation of Korean IFRS 2123 *Uncertainty over Income Tax Treatments*

The interpretation explains how to recognize and measure deferred and current income tax assets and liabilities where there is uncertainty over a tax treatment, and includes guidance on how to determine whether each uncertain tax treatment is considered separately or together. It also presents examples of circumstances where a judgement or estimate is required to be reassessed. The enactment does not have a significant impact on the financial statements.

- Annual Improvements to Korean IFRS 2015 – 2017 Cycle:

· Amendments to Korean IFRS 1103 *Business Combination*

The amendments clarify that when a party to a joint arrangement obtains control of a business that is a joint operation, and had rights to the assets and obligations for the liabilities relating to that joint operation immediately before the acquisition date, the transaction is a business

combination achieved in stages. In such cases, the acquirer shall remeasure its entire previously held interest in the joint operation. The amendment does not have a significant impact on the financial statements.

- Amendments to Korean IFRS 1111 *Joint Agreements*

The amendments clarify that when a party that participates in, but does not have joint control of, a joint operation might obtain joint control of the joint operation in which the activity of the joint operation constitutes a business. In such cases, previously held interests in the joint operation are not remeasured. The amendment does not have a significant impact on the financial statements.

- Amendments to Paragraph 57A of Korean IFRS 1012 *Income Tax*

The amendment is applied to all the income tax consequences of dividends and requires an entity to recognize the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized those past transactions or events. The amendment does not have a significant impact on the financial statements.

- Korean IFRS 1023 *Borrowing Costs*

The amendments clarify that if a specific borrowing remains outstanding after the related qualifying asset is ready for its intended use (or sale), it becomes part of general borrowings. The amendment does not have a significant impact on the financial statements.

2.2.2 New standards and interpretations not yet adopted by the Company

The following new accounting standards and interpretations have been published that are not mandatory for December 31, 2019 reporting periods and have not been early adopted by the Company.

- Amendments to Korean IFRS 1001 *Presentation of Financial Statements* and Korean IFRS 1008 *Accounting policies, changes in accounting estimates and errors – Definition of Material*

The amendments clarify the explanation of the definition of material and amended Korean IFRS 1001 and Korean IFRS 1008 in accordance with the clarified definitions. Materiality is assessed by reference to omission or misstatement of material information as well as effects of immaterial information, and to the nature of the users when determining the information to be disclosed by the Company. These amendments should be applied for annual periods beginning on or after January 1, 2020, and earlier application is permitted. The Company does not expect that these amendments have a significant impact on the financial statements.

- Amendments to Korean IFRS 1103 *Business Combination – Definition of a Business*

To consider the integration of the required activities and assets as a business, the amended definition of a business requires an acquisition to include an input and a substantive process that together significantly contribute to the ability to create outputs and excludes economic benefits from the lower costs. An entity can apply a concentration test, an optional test, where substantially all of the fair value of gross assets acquired is concentrated in a single asset or a group of similar assets, the assets acquired would not represent a business. These amendments should be applied for annual periods beginning on or after January 1, 2020, and earlier application is permitted. The Company does not expect that these amendments have a significant impact on the financial statements.

- IFRS Interpretations Committee (IFRS IC) Agenda Decision – *Lease Period*

The International Financial Reporting interpretations Commission (IFRIC) announced an interpretation of the “lease term and useful life of leasehold improvements” on December 16, 2019 that economic penalty resulting from the termination of a lease is considered when determining the enforceable period if the lessee and the lessor each has the right to terminate the lease without permission from the other party. The Company is analyzing the effect of changes in accounting policies on the consolidated financial statements for enforceable periods in accordance with the decision and will reflect the effect in the consolidated financial statements after the analysis is completed.

2.3 Consolidation

The Company has prepared the consolidated financial statements in accordance with Korean IFRS 1110, *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Parent Company has control. The Company controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Consolidation of a subsidiary begins from the date the Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.

The Company applies the acquisition method to account for business combinations. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at their fair values at the acquisition date. The Company recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation, either at fair value or at the non-controlling interest’s proportionate share of the recognized amounts of acquiree’s identifiable net assets. All other non-controlling interests are measured at their acquisition-date fair values, unless another measurement basis is required by standards.

Acquisition-related costs are expensed as incurred.
Goodwill is recognized as the excess of the aggregate of the consideration transferred, the amount of any non-controlling interest in the acquiree, and the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree over the identifiable net assets acquired. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Balances of receivables and payables, income and expenses and unrealized gains on transactions between the Parent Company and its subsidiaries are eliminated during the consolidation. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Company.

In transactions with non-controlling interest, which do not result in loss of control, the Company recognizes directly in equity any difference between the amount of the non-controlling interests and the fair value of the consideration paid or received, and attributes it to the owners of the Parent Company.

When the Company ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value and the different between its fair value and carrying amount is recognized in profit or loss.

(b) Associates

Associates are entities over which the Company has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Company and its associates are eliminated to the extent of the Company's interest in the associates. If the Company's share of losses of an associate equals or exceeds its interest in the associate (including long-term interests that, in substance, form part of the Company's net investment in the associate), the Company discontinues recognizing its share of further losses. After the Company's interest is reduced to zero, additional losses are provided for, and a liability is recognized, only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of the associate. If there is an objective evidence of impairment for the investment in the associate, the Company recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss. If an associate uses accounting policies other than those of the Company for like transactions and events in similar circumstances, if necessary, adjustments shall be made to make the associate's accounting policies conform to those of the Company when the associate's financial statements are used by the company in applying the equity method.

(c) Joint arrangements

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator has rights to the assets, and obligations for the

liabilities, relating to the joint operation and recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venturer has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

2.4 Segment Reporting

Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision maker (Note 6). The chief operating decision maker is responsible for allocating resources and assessing performance of the operating segments.

2.5 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Company's entities are measured using the currency of the primary economic environment in which the each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Parent Company's functional and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss. They are deferred in other comprehensive income if they relate to qualifying cash flow hedges and qualifying effective portion of net investment hedges, or are attributable to monetary part of the net investment in a foreign operation.

Foreign exchange gains and losses that relate to borrowings are presented in the statement of profit or loss, within finance costs. All other foreign exchange gains and losses are presented in the statement of profit or loss within 'other income or other expenses'.

Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities held at fair value through other comprehensive income are recognized in other comprehensive income.

(c) Translation into the presentation currency

The results of operations and financial position of the Company's entities that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period.
- Income and expenses for each statement of comprehensive income are translated at average rates; and
- Equity is translated at the historical exchange rate; and
- All resulting exchange differences are recognized in other comprehensive income.

2.6 Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits in banks, and other short-term highly liquid investments with original maturities of three months or less.

2.7 Financial Assets

(a) Classification

The Company classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss
- those to be measured at fair value through other comprehensive income, and
- those to be measured at amortized cost.

The classification depends on the Company's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Company reclassifies debt investments when, and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Company has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. Changes in fair value of the investments in equity instruments that are not accounted for as other comprehensive income are recognized in profit or loss.

(b) Measurement

At initial recognition, the Company measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

A. Debt instruments

Subsequent measurement of debt instruments depends on the Company's business model for managing the asset and the cash flow characteristics of the asset. The Company classifies its debt instruments into one of the following three measurement categories:

- Amortized cost: Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.

- Fair value through other comprehensive income: Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'other non-operating income or expenses' and impairment losses are presented in 'other non-operating expenses'.

- Fair value through profit or loss: Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of profit or loss within 'finance income and costs in the year in which it arises.

B. Equity instruments

The Company subsequently measures all equity investments at fair value. Where the Company's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividend income from such investments continue to be recognized in profit or loss as 'finance income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income and costs' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

(c) Impairment

The Company assesses on a forward looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables and lease receivables, the Company applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

(d) Recognition and Derecognition

Regular way purchases and sales of financial assets are recognized or derecognized on trade-date, the date on which the Company commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Company has transferred substantially all the risks and rewards of ownership.

If a transfer does not result in derecognition because the Company has retained substantially all the risks and rewards of ownership of the transferred asset, the Company continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Company classified the financial liability as "borrowings" in the consolidated statement of financial position (Note 21).

(e) Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Company

or the counterparty.

2.8 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in the consolidated statement of comprehensive income as 'finance income (costs)' according to the nature of transactions.

2.9 Trade Receivables

Trade receivables are recognized initially at the amount of consideration that is unconditional, unless they contain significant financing components when they are recognized at fair value. Trade receivables are subsequently measured at amortized cost using the effective interest method, less loss allowance. See Notes 10 and 41 for further information about the Company's accounting for trade receivables.

2.10 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the average method.

2.11 Property and Equipment

Property and equipment are stated at its historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation on property and equipment, except land, is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, as follows:

	Estimated useful lives
Buildings	20 – 40 years
Structures	20 years
Machinery and equipment	4 – 6 years
Vehicles	4 – 6 years
Furniture	2 – 5 years

The depreciation method, residual values and useful lives of property and equipment are reviewed and adjusted at each financial year-end, if appropriate, accounted for as changes in accounting estimates.

2.12 Government Grants

Government grants are recognized at their fair values when there is reasonable assurance that the grant will be received and the Company will comply with the conditions attached to it. Government grants related to assets are presented by deducting the grants in arriving at the carrying amount of the assets, and grants recognized as income are deferred and presented by deducting the expenses related to the purpose of the government grants.

2.13 Intangible Assets

(a) Goodwill

Goodwill arises on the acquisition of subsidiaries, associates and business combination are included in intangible assets. Goodwill represents the excess of the cost of an acquisition over the fair value of the Company's share of the net identifiable assets of the acquired subsidiary, associates, joint ventures and businesses at the date of acquisition. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Any impairment is recognized immediately as an expense and is not subsequently reversed.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated to each of the CGUs, or group of CGUs, that is expected to benefit from the synergies of the combination. Goodwill is monitored at the operating segment level. Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying amount of goodwill is compared to the recoverable amount, which is the higher of value in use and the fair value less costs to sell.

(b) Membership and brand

Membership and brand are regarded as intangible assets with indefinite useful life and not amortized because there is no foreseeable limit to the period over which the asset is expected to be utilized.

(c) Other intangible assets

Other intangible assets such as development costs and industrial property rights are initially recognized at its historical costs and amortized using the straight-line method over their estimated useful lives. Other intangible assets have definite useful life and are carried at cost less accumulated amortization.

Their estimated useful lives of other Intangible assets are as follows:

	Estimated useful lives
Industrial property rights	5 – 10 years
Others	2 – 15 years
Development costs	5 years
Exclusive rights	Contractual period

The Company recognizes the cryptocurrency at fair value of the consideration at the acquisition date as it is satisfied in the definition and recognition criteria of the asset. If there is a market in which the asset is traded at a frequency and a size sufficient to provide pricing information continuously, the cryptocurrency is evaluated at prices available in such market at the end of each reporting period, and gain on valuation is presented within 'other comprehensive income' and loss on valuation is recognized within 'other non-operating expenses'. In addition, non-marketable cryptocurrency is recognized at its acquisition cost.

2.14 Investment Property

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses). After recognition as an asset, investment property is carried at cost less accumulated depreciation and impairment losses. The Company depreciates investment properties, except for land, using the straight-line method over their useful lives of 40 years.

2.15 Impairment of Non-financial Assets

Goodwill or intangible assets with indefinite useful lives are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. Non-financial assets, other than goodwill, that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

2.16 Trade and Other Payables

These amounts represent liabilities for goods and services provided to the Company prior to the end of reporting period which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition. Trade and other payables are presented as current liabilities, unless payment is not due within 12 months after the reporting period. They are recognized initially at their fair value and subsequently measured at amortized cost using the effective interest method.

2.17 Financial Liabilities

(a) Classification and measurement

The Company's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Company classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables', 'borrowings' and 'other financial liabilities' in the statement of financial position.

Preferred shares that require mandatory redemption at a particular date are classified as liabilities. Interest expenses on these preferred shares using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized from other financial liabilities.

(b) Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified. The difference between the carrying amount of a financial liability extinguished or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

2.18 Provisions

Provisions for service warranties, make good obligation, and legal claims are recognized when the Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.19 Current and Deferred Income Tax

Income tax expense for the period consists of current and deferred tax. Income tax is recognized as income or expense for the period in the consolidated statement of comprehensive income, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, income tax is also recognized in other comprehensive income or directly in

equity, respectively. Income tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

Deferred tax is recognized for temporary differences arising between the tax bases of assets and liabilities and their carrying amounts as expected tax consequences at the recovery or settlement of the carrying amounts of the assets and liabilities. However, deferred tax assets and liabilities are not recognized if they arise from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting profit nor taxable profit (loss).

Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized.

Deferred tax liability is recognized for taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, deferred tax assets are recognized for deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset when the Company has a legally enforceable right to offset and intends either to settle on a net basis, or to realize the assets and settle the liability simultaneously.

2.20 Employee Benefits

(a) Post-employment benefits

The Company operates pension plans. The Company has both defined contribution plans and defined benefit plans.

A defined contribution plan is a pension plan under which the Company pays fixed contributions into a separate entity. The contributions are recognized as employee benefit expenses when an employee has rendered service.

A defined benefit plan is a pension plan that is not a defined contribution plan. Typically defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent

actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds and that have terms to maturity approximating to the terms of the related pension obligation. The remeasurement of the net defined benefit liability are recognized in other comprehensive income.

If any plan amendments, curtailments, or settlements occur, past service costs or any gains or losses on settlement are recognized as profit or loss for the year.

(b) Share-based payments

Equity-settled share-based payments granted to employees are estimated at fair value of equity instruments at the grant date and recognized as employee benefit expenses over the vesting period. The number of equity instruments expected to vest is remeasured with consideration to non-market vesting conditions at the end of the reporting period, with any changes from the original measurement recognized in profit or loss for the year and equity.

When the options are exercised, the Company issues new shares. The proceeds received, net of any directly attributable transaction costs, are recognized as capital stock (nominal value) and capital surplus.

Under cash-settled share-based payment plan, the Company compensates the difference of the fair value and exercise price of option as the consideration for employee services received. Total expense that will be recognized over the vesting period is determined by reference to the fair value of the option grated. Until the liability is settled, the Company is required to remeasure the fair value of the liability at the end of each reporting period and at the date of settlement, with any changes in value recognized in profit or loss for the year.

(c) Other long-term employee benefits

The Parent Company and certain subsidiaries provide long-term employee benefits, which are entitled to employees with service period for at least three years. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Company recognizes service cost, net interest on other long-term employee benefits and remeasurement as profit or loss for the year. These liabilities are valued annually by independent and qualified actuaries.

2.21 Treasury shares

Where the Company purchases its own equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs is deducted from equity attributable to the Company's equity until the shares are cancelled or reissued. Where such treasury shares are subsequently reissued, any consideration received is recognized in equity attributable to the Company's shareholders.

2.22 Revenue Recognition

From January 1, 2018, the Company has applied Korean IFRS 1115 *Revenue from Contracts with Customers.* The operating revenue are mainly comprised of advertisement, content and others.

(a) Advertising revenue

The Company generally provides advertising services to a customer during the period of a contract and recognizes the allocated transaction price for a performance obligation over the period of service as revenue. However, in the case of a contract in which advertising services are settled based on the sum of the total number of advertising services provided other than the contracted period, the Company recognizes revenue when it satisfies its performance obligation.

(b) Contents revenue and others

The Company provides a variety of contents to a customer. Transaction prices of contents are immediately paid when a customer purchases contents online. The Company recognizes revenue at the time when contents are used as considered that the right to use contents are transferred and provided to a customer and there are no unfulfilled obligations of a customer that may affect the use of contents. For contents that have significant impacts on contents over the life of contents provided to a customer, revenue is recognized over the period over which contents are provided.

The Company pays the commission fees when a customer pays for the game service provided by the Company. The incremental costs are those commission fees that the Company incurs to acquire a contract with a customer that would not have been incurred if the contract had not been acquired. The Company recognizes the incremental costs as an asset and amortizes it over the certain period in accordance with the application of Korean IFRS 1115.

(c) Commerce revenue and goods sales

The Company sells goods or provides services as a principal or agent through KakaoTalk platforms and recognizes revenue when the performance obligation is completed.

(d) Other revenue

In relation to fintech business and cryptocurrency, the Company identifies the services provided by the Company as a distinct performance obligation and recognizes revenue when each performance obligation is completed in accordance with the application of Korean IFRS 1115.

For the costs incurred in relation to the sale contract of cryptocurrency and others that would not have been incurred if the contract had not been acquired, the Company recognizes the incremental costs as an asset and amortizes it over the certain period in accordance with the application of IFRS 1115.

2.23 Dividend

Dividend to the Company's shareholders is recognized as a liability in the consolidated financial statements in the year in which the dividends are approved by the Company's shareholders.

2.24 Lease

As explained in Note 2.2 above, the Company has changed its accounting policy for leases. The impact of the new accounting policies is disclosed in Note 42.

As at December 31, 2018, leases of property and equipment where the Company, as lessee, had substantially all the risks and rewards of ownership were classified as finance leases. Finance leases were capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding lease payments, net of finance charges, were included in other short-term or long-term payables. Each lease payment was allocated between the liability and finance cost. The finance cost was charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The property and equipment acquired under finance leases was depreciated over the asset's useful life, or over the shorter of the asset's useful life and the lease term if there is no reasonable certainty that the Company will obtain ownership at the end of the lease term.

Leases in which a significant portion of the risks and rewards of ownership were not transferred to the Company as lessee were classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) were charged to profit or loss on a straight-line basis over the period of the lease.

From January 1, 2019, leases are recognized as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Company.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable
- Variable lease payment that are based on an index or a rate
- Amounts expected to be payable by the Company (the lessee) under residual value guarantees
- The exercise price of a purchase option if the Company (the lessee) is reasonably certain to exercise that option, and

- Payments of penalties for terminating the lease, if the lease term reflects the Company (the lessee) exercising that option

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs

The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Company is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

(a) Variable lease payments

Some machinery leases contain variable payment terms that are linked to usage. Variable payment terms are used for a variety of reasons, including minimizing the fixed costs base for machinery. Variable lease payments that depend on usage are recognized in profit or loss when machinery is used and when the usage is confirmed by the settlement.

(b) Extension and termination options

Extension and termination options are included in a number of property and infra leases across the Company. These terms are used to maximize operational flexibility in terms of managing contracts.

2.25 Earnings per share

Basic earnings per share is calculated by dividing net profit for the year available to ordinary shareholders by the weighted-average number of ordinary shares outstanding during the year. Diluted earnings per share are calculated using the weighted-average number of ordinary shares outstanding adjusted to include the potentially dilutive effect of ordinary equivalent shares outstanding.

2.26 Business Combinations between entities under a Common Control

Book value method applies to a business combination under a common control. Related assets and liabilities are measured at book value of the consolidated financial statements. In addition, the difference between the sum of book values of the assets and liabilities transferred and the consideration paid is recognized as share premium.

2.27 Compound Financial Instruments

Compound financial instruments are convertible bonds that can be converted into equity instruments of the Parent Company at the option of the holder and exchangeable bond that can be converted into equity instruments of the subsidiary at the option of the holder.

The liability component of a compound financial instrument is recognized initially at the fair value of a similar liability that does not have equity conversion rights and exchange rights. The equity component is recognized initially on the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Any directly attributable transaction costs are allocated to the liability and equity components in proportion to their initial carrying amounts.

In accordance with the Interpretation Statements No.00094 issued by the Financial Supervisory Service in Korea, the Company recognized conversion rights and exchange rights (pre-emptive rights) as equity. This accounting treatment is applicable within Korean IFRS as defined in item1 of paragraph1 of Article 13 of Acts on External Audit for Stock Companies.

2.28 Approval of Issuance of the Financial Statements

The issuance of the financial statements 2019, of the Company was approved by the Board of Directors on February 25, 2020, which is subject to change with approval at the annual shareholders' meeting.

3. Critical Accounting Estimates and Assumptions

The preparation of financial statements requires the Company to make estimates and assumptions concerning the future. Management also needs to exercise judgement in applying the Company's accounting policies. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. As the resulting accounting estimates will, by definition, seldom equal the related actual results, it can contain a significant risk of causing a material adjustment.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below. Additional information of significant judgement and assumptions of certain items are included in relevant notes.

(a) Estimated impairment of goodwill

The Company tests annually whether goodwill has suffered any impairment. The recoverable amounts of cash-generating units are determined based on value-in-use calculations (Note 19).

(b) Income taxes

The Company's taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain (Note 24).

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System for Recirculation of Corporate Income*, the Company is liable to pay additional income tax calculated based on the tax laws. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Company's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

(c) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Company uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 5).

(d) Impairment of financial assets

The provision for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Company uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Company's past history, existing

market conditions as well as forward looking estimates at the end of each reporting period (Note 41).

(e) Provisions

As at December 31, 2019, the Company recognizes provisions as explained in Notes 2.18. These provisions are estimated based on past experience.

(f) Net defined benefit liabilities

The present value of net defined benefit liabilities depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 22).

(g) Other long-term employee benefits liabilities

The present value of other long-term employee benefits liabilities depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 23).

(h) Lease

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

For leases of office, vehicles and equipment, the following factors are normally the most relevant:

- If there are significant penalties to terminate (or not extend), the Company is typically reasonably certain to extend (or not terminate).
- If any leasehold improvements are expected to have a significant remaining value, the Company is typically reasonably certain to extend (or not terminate).
- Otherwise, the Company considers other factors including historical lease durations and the costs and business disruption required to replace the leased asset.

Most extension options in offices and vehicles leases have not been included in the lease liability, because the Company could replace the assets without significant cost or business disruption.

The lease term is reassessed if an option is actually exercised (or not exercised) or the Company becomes obliged to exercise (or not exercise) it. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstances occurs, which affects this assessment, and that is within the control of the lessee.

4. Financial Risk Management

4.1 Financial Risk Factors

The Company's activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Company's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Company's financial performance.

4.1.1 Market risk

i) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty caused by fluctuations in interest rates.

As at December 31, 2019, if the market interest rate of floating rate deposits had increased/decreased by 100bp with other variables held constant, the effect on profit before income tax for the year ended December 31, 2019, would have been increased/decreased by ₩ 4,887 million (2018: ₩ 9,090 million) due to increased/decreased interest income of floating rate deposits.

ii) Price risk

The Company invests in debt and equity securities for managing liquidity, operational needs and others. The Company's investment portfolio consists of direct and indirect investments in listed and non-listed securities.

As at December 31, 2019, if all other variables were constant and the value of marketable equity had increased or decreased by 5.0%, gain and loss on valuation of equity securities at fair value (before income tax) and other comprehensive income (before income tax) would have been increased or decreased by ₩ 17,640 million (2018: ₩ 1,909 million).

Impacts of investment financial instruments of the Company on profit or loss and other comprehensive income are described in Note 10.

iii) Foreign exchange risk

Foreign exchange risk is defined as the risk that the fair value of financial instruments or future cash flows fluctuate because of changes in foreign exchange rates. Foreign exchange risk arises from financial instruments presented in currencies other than functional currency. Therefore, foreign exchange risk does not arise from non-monetary financial instruments or financial

instruments presented in functional currency.

The Company's exposure to foreign currency risk at the end of the reporting period, expressed in Korean won, was as follows:

(in millions of Korean won)	2019				
	USD	**JPY**	**CNY**	**EUR**	**GBP**
Financial assets					
Cash and cash equivalents	₩ 433,018	₩ 6,029	₩ 282	₩ -	₩ -
Short-term financial instruments	17,626	-	-	-	-
Trade receivables	8,519	5,164	1,777	65	190
	₩ 459,163	₩ 11,193	₩ 2,059	₩ 65	₩ 190
Financial liabilities					
Trade and other payables	₩ 11,692	₩ 3,623	₩ 1,564	₩ 11	₩ -
Non-current trade and other payables	3,176	-	-	-	-
	₩ 14,868	₩ 3,623	₩ 1,564	₩ 11	₩ -

If the Korean won has weakened/strengthened by 5% with all other variables held constant, the effect on profit before income tax for the year ended December 31, 2019, would have been increased/decreased by ₩ 22,630 million (2018: ₩ 19,908 million).

4.1.2 Credit risk

Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks or financial institutions, as well as credit exposures to customers, including outstanding receivables (Note 41).

Details of the Company's level of maximum exposure to credit risk as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Cash and cash equivalents	₩ 1,918,225	₩ 1,247,013
Short-term financial instruments	207,767	924,215
Trade receivables	157,221	193,669
Derivative financial assets	1,112	1,174
Financial assets at fair value through profit or loss	74,226	36,812
Other current financial assets	252,486	207,656
Long-term financial instruments	50,062	50,689
Other non-current financial assets	92,355	58,321
	₩ 2,753,454	₩ 2,719,549

4.1.3 Liquidity risk

Cash flow forecasting is performed by the Company finance department. The Company finance department monitors rolling forecasts of the Company's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Company does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. Such forecasting takes into consideration the Company's debt financing plans, covenant compliance, compliance with internal statement of financial position ratio targets and, if applicable external regulatory or legal requirements.

Details of the Company's liquidity risk analysis as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019			
	Less than 1 year	Between 1 and 2 years	Over 2 years	Total
Trade and other payables	₩ 578,573	₩ -	₩ -	₩ 578,573
Short-term and long-term borrowings[1]	448,929	68,520	30,261	547,710
Other current financial liabilities	25,256	-	-	25,256
Deposits received	299,564	-	-	299,564
Short-term lease liabilities	69,139	-	-	69,139
Non-current trade and other payables	-	13,344	20,397	33,740
Other non-current financial liabilities	-	62,507	336	62,843
Long-term lease liabilities	-	62,552	117,443	179,994
	₩ 1,421,462	₩ 206,922	₩ 168,437	₩ 1,796,820

[1] For convertible bonds and exchangeable bonds, total cash flow is disclosed with the contractual early repayment date as maturity.

(in millions of Korean won)	2018			
	Less than 1 year	Between 1 and 2 years	Over 2 years	Total
Trade and other payables	₩ 460,813	₩ -	₩ -	₩ 460,813
Short-term and long-term borrowings[1]	611,849	3,900	43,661	659,410
Other current financial liabilities	20,526	-	-	20,526
Deposits received	129,889	-	-	129,889
Non-current trade and other payables	-	-	389	389
Other non-current financial liabilities	-	-	45,869	45,869
	₩ 1,223,077	₩ 3,900	₩ 89,919	₩ 1,316,896

[1] For convertible bonds and exchangeable bonds, total cash flow is disclosed with the contractual early repayment date as maturity.

The table above analyses the Company's non-derivative financial liabilities into relevant maturity. The amounts disclosed in the table are the contractual undiscounted cash flows including interest.

4.2. Capital Risk Management

The Company's objectives when managing capital are to maintain an optimal capital structure. The Company monitors financial ratios such as debt-to-capital ratio, which is calculated by dividing total liabilities by total equity.

The debt-to-capital ratios as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**	**2018**
Total liabilities (A)	₩	2,997,138	2,332,385
Total equity (B)		5,740,118	5,627,158
Debt-to-capital ratio (A/B)		52.21%	41.45%

4.3. Offsetting Financial Assets and Financial Liabilities

Details of the Company's recognized financial assets subject to offsetting, enforceable master netting arrangements or similar agreements as at December 31, 2019 and 2018, are as follows:

	2019				
(in millions of Korean won)	**Gross assets**	**Gross liabilities offset**	**Net amounts presented in the statement of financial position**	**Amounts not offset**	**Net amount**
Trade receivables[1]	₩ 46,714	₩ 6,393	₩ 40,321	₩ -	₩ 40,321
Non-trade receivables[2]	41,207	4,279	36,928	-	36,928

	2019				
(in millions of Korean won)	**Gross liabilities**	**Gross assets offset**	**Net amounts presented in the statement of financial position**	**Amounts not offset**	**Net amount**
Non-trade payables[1]	₩ 4,025	₩ 3,177	₩ 848	₩ -	₩ 848

[1] The amount presented includes the amount after offsetting trade receivables from media reps and agency fee.

[2] The amount presented includes the amount after offsetting settlement amounts from the transfer of the contract and non-trade receivables from the change of exclusive contract.

	2018				
(in millions of Korean won)	**Gross assets**	**Gross liabilities offset**	**Net amounts presented in the statement of financial position**	**Amounts not offset**	**Net amount**
Trade receivables[1]	₩ 45,258	₩ 6,776	₩ 38,481	₩ -	₩ 38,481

[1] The amount presented includes the amount after offsetting trade receivables from media reps and agency fee.

5. Fair Value

5.1 Fair Value of Financial Instruments

Carrying amount and fair value of financial instruments as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019		2018	
	Carrying amount	Fair value	Carrying amount	Fair value
Financial assets				
Cash and cash equivalents	₩ 1,918,225	₩ 1,918,225	₩ 1,247,013	₩ 1,247,013
Short-term financial instruments	207,767	207,767	924,215	924,215
Long-term financial instruments	50,062	50,062	50,689	50,689
Financial assets at fair value through profit or loss	176,661	176,661	130,627	130,627
Financial assets at fair value through other comprehensive income	419,265	419,265	329,345	329,345
Trade receivables	157,221	157,221	193,669	193,669
Derivative financial assets	1,112	1,112	1,174	1,174
Other current financial assets	252,486	252,486	207,656	207,656
Other non-current financial assets	92,355	92,355	58,321	58,321
	₩ 3,275,154	₩ 3,275,154	₩ 3,142,709	₩ 3,142,709
Financial liabilities				
Trade and other payables	₩ 578,567	₩ 578,567	₩ 460,813	₩ 460,813
Non-current trade and other payables	32,872	32,872	389	389
Short-term borrowings	448,596	452,290	609,480	605,039
Long-term borrowings	72,269	72,269	44,995	44,995
Current derivative financial liabilities	18,290	18,290	13,916	13,916
Non-current derivative financial liabilities	7,372	7,372	-	-
Deposits received	299,564	299,564	129,889	129,889
Other current financial liabilities	25,256	25,256	20,526	20,526
Other non-current financial liabilities	62,843	62,843	45,869	45,869
	₩ 1,545,630	₩ 1,549,324	₩ 1,325,878	₩ 1,321,436

5.2 Fair Value Hierarchy

The Company classifies fair value measurements using a fair value hierarchy that reflects the significance of the inputs used in measurements.

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date (Level 1).
- All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability (Level 2).
- Unobservable inputs for the asset or liability (Level 3).

Fair value hierarchy classifications of the financial assets and liabilities that are measured at fair value as at December 31, 2019 and 2018:

(in millions of Korean won)	2019			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩ 21,357	₩ -	₩ 155,303	₩ 176,661
Financial assets at fair value through other comprehensive income[1,2]	331,441	-	87,825	419,265
Derivative financial assets	-	-	1,112	1,112
	₩ 352,798	₩ -	₩ 244,240	₩ 597,038
Derivative financial liabilities	₩ -	₩ -	₩ 25,662	₩ 25,662

[1] KakaoBank of Korea Corp., which was classified as financial assets at fair value through other comprehensive income as at December 31, 2018, was reclassified as investments in associates exercising a call option that gives the right to acquire interests up to 34% of the total number of shares in 2019(Note 16).
[2] During 2019, the Company acquired shares of SK TELECOM CO.,,LTD and HANJINKAL, and categorized them within Level 1.

(in millions of Korean won)	2018			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩ 32,069	₩ -	₩ 98,558	₩ 130,627
Financial assets at fair value through other comprehensive income	6,111	-	323,234	329,345
Derivative financial assets	-	-	1,174	1,174
	₩ 38,180	₩ -	₩ 422,966	₩ 461,146
Derivative financial liabilities	₩ -	₩ -	₩ 13,916	₩ 13,916

5.3 Valuation Technique and Inputs

The fair value of financial instruments traded in active markets is based on quoted market prices at the statement of financial position date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, a company in the same industry, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Company is the current bid price. These instruments are included in Level 1. Instruments included in Level 1 consist primarily of KOSPI and KOSDAQ equity investments classified as trading securities or available-for-sale.

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3.

As at December 31, 2019, valuation technique and the inputs used for recurring and non-recurring fair value measurements and disclosed fair value that are categorized within Level 3 of the fair value hierarchy are as follows:

(in millions of Korean won)		Fair value	Level	Valuation technique	Inputs
Financial assets at fair value through profit or loss					
NEPTUNE Corp. (convertible bond)	₩	16,170	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
Lionheart Studio (redeemable convertible preferred shares)		4,385	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
Daeheung Co., Ltd. (convertible bond)		3,938	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
TransLink Capital Partners II, L.P.		2,969	3	Net asset value method	Net asset value
TransLink Capital Partners III, L.P		6,665	3	Net asset value method	Net asset value
Collaborative Fund II, L.P.		3,901	3	Net asset value method	Net asset value
Altos Korea opportunity Fund		25,683	3	Net asset value method	Net asset value
KDBC FP Tech Next Fund		2,318	3	Net asset value method	Net asset value
ATU e-sports Growth PE Fund I		2,500	3	Net asset value method	Net asset value
KJ. & Game Investment Fund I		2,500	3	Net asset value method	Net asset value
Pathfinder8 Inc		2,850	3	Net asset value method	Net asset value
Others		9,834	3	Net asset value method	Net asset value
Compound financial instruments		43,698	3	Market value method	Price of the underlying asset
Others[1]		27,892	3	Acquisition cost, binominal tree method, DCF and others	Discount rate, dividend rate, increase and decrease rate and others
	₩	155,303			

(in millions of Korean won)	Fair value	Level	Valuation technique	Inputs
Financial assets at fair value through other comprehensive income				
SBS M&C	₩ 3,773	3	DCF	Estimated cash flow, discount rate
KRAFTON, Inc.	50,633	3	DCF	Estimated cash flow, discount rate
XLGAMES Inc.	6,820	3	DCF	Estimated cash flow, discount rate
JapanTaxi Co.,Ltd.	15,083	3	DCF	Estimated cash flow, discount rate
Others (binominal tree method and others)[1]	11,516	3	Acquisition cost, DCF and others	Discount rate, increase and decrease rate, estimated cash flow and others
	₩ 87,825			
Derivative financial assets				
Call option (Tide Square Co., Ltd.)	₩ 894	3	Binominal tree method and others	Probability of risk neutral, increase in risk neutral, decrease in risk neutral
Others	217	3	Binominal tree method and others	Probability of risk neutral, increase in risk neutral, decrease in risk neutral
	₩ 1,112			
Derivative financial liabilities				
Conversion right (Kakao VX)	₩ 6,876	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
Right for convertible redemption (Friendsgames Co., Ltd.)	7,537	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
Conversion right (TNK Factory)	3,877	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
Put option (NeoBazar Inc.)	24	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
Right for convertible redemption (stagefive Co., Ltd. (formerly,Pinplay))	7,347	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
	₩ 25,662			

[1] For some investees, the acquisition cost was measured at fair value in accordance with the 'Guidelines for fair value assessment of unlisted equity securities' because no sufficient information for fair value measurement was available and there is no clear evidence of value changes in the previous or current period.

5.4 Valuation Processes for Fair Value Measurements Categorized Within Level 3

The financial division of the Company performs the fair value measurements required for financial reporting purposes, including level 3 fair values. This division reports to the Chief Financial Officer ("CFO") and the Audit Committee, and discusses valuation processes and results with CFO and Audit Committee at least once every year depending on the materiality.

The results of the sensitivity analysis for the effect on profit or loss (before income tax) or other comprehensive income (before income tax) from changes in fair value (1%) for each financial instrument for the year ended December 31, 2019, are as follows:

(in millions of Korean won)	2019	
	Favorable changes	**Unfavorable changes**
Financial assets at fair value through profit or loss	₩ 1,553	₩ (1,553)
Financial assets at fair value through other comprehensive income	878	(878)
Derivative financial assets	11	(11)
	2,442	(2,442)
Derivative financial liabilities	257	(257)
	₩ 2,699	₩ (2,699)

6. Segment Information

The Company is operated as a single operating segment. The financial information reported to the chief operating decision-maker is consistent with the disclosed financial statements.

Breakdown of the Company's revenue for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	**2019**[1]		
	Platform	**Contents**	**Total**
Revenue	₩ 1,682,122	₩ 1,913,138	₩ 3,595,260
Inter-company revenue	(247,373)	(277,775)	(525,148)
Net revenue	₩ 1,434,749	₩ 1,635,363	₩ 3,070,111

[1] The Company classified the type of revenue as advertising, contents, and others until 2018, but the Company changed the classification of operating revenue in consideration of future business growth and market understanding during 2019. Most of the platform revenue consist of advertising and other revenue.

(in millions of Korean won)	**2018**		
	Platform	**Contents**	**Total**
Revenue	₩ 1,192,588	₩ 1,647,078	₩ 2,839,666
Inter-company revenue	(153,273)	(269,400)	(422,673)
Net revenue	₩ 1,039,315	₩ 1,377,678	₩ 2,416,992

For the years ended December 31, 2019 and 2018, the Company's most of the revenue arise in Korea, and most of non-current assets held by the Company as December 31, 2019 and 2018 are located in Korea.

There was no external customer contributing more than 10% of the total revenue for the years ended December 31, 2019 and 2018.

7. Financial Instruments by Category

Carrying amounts of financial assets and liabilities by category as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Financial assets at fair value through profit or loss	₩	176,661	₩	130,627
Financial assets at fair value through other comprehensive income		419,265		329,345
Financial assets at amortized costs				
Cash and cash equivalents		1,918,225		1,247,013
Trade receivables, net		157,221		193,669
Short-term financial instruments		207,767		924,215
Long-term financial instruments		50,062		50,689
Other current financial assets		252,486		207,656
Other non-current financial assets		92,355		58,321
		2,678,116		2,681,563
Derivative financial assets		1,112		1,174
	₩	3,275,154	₩	3,142,709

(in millions of Korean won)		**2019**		**2018**
Financial liabilities at amortized costs				
Trade and other payables	₩	578,567	₩	460,813
Short-term borrowings		448,596		609,480
Deposits received		299,564		129,889
Other current financial liabilities		25,256		20,526
Non-current trade and other payables		32,872		389
Long-term borrowings		72,269		44,995
Other non-current financial liabilities[1]		62,843		45,869
		1,519,968		1,311,961
Derivative financial Liabilities				
Current derivative financial liabilities		18,290		13,916
Non-current derivative financial liabilities		7,372		-
		25,662		13,916
	₩	1,545,630	₩	1,325,878

[1] As at December 31, 2019, the Company recognized non-controlling interests in fund with maturity as financial liabilities amounting to ₩ 46,236 million (2018: ₩ 43,046 million).

Gains or losses of financial instruments by category for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	2019					
	Gain (loss) on valuation (other comprehensive income (loss))	**Gain (loss) on valuation / disposal (profit or loss)**	**Interest income (expenses)**	**Dividend income**	**Impairment loss**	**Gain (loss) on foreign currency translation**
Financial assets						
Financial assets at fair value through profit or loss	₩ -	₩ (3,262)	₩ -	₩ 1,287	₩ -	₩ -
Financial assets at fair value through other comprehensive income	(702)	-	-	-	-	-
Financial assets at amortized costs and other financial assets	-	-	31,700	-	(1,811)	13,447
Derivative financial assets	-	(2,667)	-	-	-	-
Financial liabilities						
Financial liabilities at amortized costs and other financial liabilities	-	-	(4,030)	-	-	(208)
Derivative financial liabilities	-	622	-	-	-	-

(in millions of Korean won)	2018					
	Gain (loss) on valuation (other comprehensive income (loss))	**Gain (loss) on valuation / disposal (profit or loss)**	**Interest income (expenses)**	**Dividend income**	**Impairment loss**	**Gain (loss) on foreign currency translation**
Financial assets						
Financial assets at fair value through profit or loss	₩ -	₩ 7,401	₩ -	₩ 381	₩ -	₩ -
Financial assets at fair value through other comprehensive income	9,251	(272)	-	-	-	1
Loans and receivables	-	-	41,783	-	(6,641)	22,628
Derivative financial assets	-	988	-	-	-	-
Financial liabilities						
Financial liabilities at amortized costs	-	-	(9,202)	-	-	(205)
Derivative financial liabilities	-	(732)	-	-	-	-

8. Cash and Cash Equivalents, Short-term and Long-term Financial Instruments and Restricted Financial Instruments

Cash and cash equivalents comprise cash on hand, demand deposits and short-term, highly liquid investments that are readily convertible to known amounts of cash which are subject to an insignificant risk of changes in value.

Details of cash and cash equivalents and short-term and long-term financial instruments as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	2019	2018
Bank deposits and cash on hand and others	₩ 1,918,225	₩ 1,247,013
Short-term financial instruments[1]	207,767	924,215
Long-term financial instruments – time deposits and others	50,062	50,689
	₩ 2,176,054	₩ 2,221,917

[1] See Note 38 for information about restricted deposits and payment guarantees.

As at December 31, 2019, the Company has received payment guarantees from KB Kookmin Bank for the exchangeable bonds (old). In connection with the said payment guarantees, the stock return rights for the remaining shares subject to exchange were provided as collateral. 1,793,755 treasury shares required for the exchange are deposited at Korea Securities Depository.

In addition, the Company's deposits of ₩ 6,191 million are pledged as collateral in relation to employees' bank loans (Note 38).

9. Credit Quality of Financial Assets

The credit quality of financial assets that are neither past due nor impaired can be assessed by reference to external credit ratings (if available) or to historical information about counterparty default rates.

Cash and cash equivalents are all deposited in the financial institutions with high credit ratings.

10. Financial Assets

(a) Financial assets at fair value through profit or loss and derivative financial assets

Financial assets mandatorily measured at fair value through profit or loss and derivative financial assets include the following classes of financial assets:

(in millions of Korean won)		2019		2018
Financial assets at fair value through profit or loss				
Non-current				
Beneficiary securities and fund	₩	60,943	₩	36,925
Listed shares		20,925		31,637
NEPTUNE Corp.		20,925		31,552
Mr. Blue Corporation		-		52
SHOWBOX Corp.		-		33
Compound financial instruments		45,280		36,285
		127,148		104,846
Current				
Beneficiary securities		6,527		1,073
Listed shares		433		432
Compound financial instruments		42,553		24,276
		49,512		25,781
	₩	176,660	₩	130,627
Derivative financial assets				
Derivative financial assets	₩	1,112	₩	1,174

The amounts recognized in profit or loss are as follows:

(in millions of Korean won)		2019		2018
Gain (loss) on financial assets at fair value through profit or loss	₩	(1,975)	₩	7,401
Gain (loss) on derivative financial assets		(2,667)		-

(b) Financial Assets at Fair Value through Other Comprehensive Income

Equity investments at fair value through other comprehensive income comprise the following individual investments:

(in millions of Korean won)		**2019**		**2018**
Non-current				
Listed equity securities	₩	331,441	₩	6,111
YD ONLINE CORP.		-		982
FNC ENTERTAINMENT		5,473		5,129
SK TELECOM CO., LTD. [2]		301,456		-
HANJINKAL.		24,511		-
Action Square Co., Ltd.		1		-
Unlisted equity securities[1,3]		87,825		323,234
	₩	419,265	₩	329,345

[1] See Note 5 for details of unlisted equity securities.

[2] The Company acquired 1,266,620 shares of SK TELECOM CO., LTD. by issuing 2,177,401 new shares through a capital increase by allotment to a third party to enter into a strategic partnership with SK TELECOM CO., LTD. during the year ended December 31, 2019.

[3] During the year ended December 31, 2019, the Company acquired shares of KakaoBank of Korea Corp. through a call option exercise and reclassified the financial assets as investments in associates due to changes in interests (Note 16).

Upon disposal of these equity investments, any balance within the accumulated other comprehensive income for these equity investments is reclassified to retained earnings and is not reclassified to profit or loss.

(c) Trade Receivables, Other Current Financial Assets and Other Non-current Financial Assets

Trade receivables and allowance for doubtful accounts as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Trade receivables	₩	162,404	₩	201,238
Less: allowance for doubtful accounts (Note 41)		(5,184)		(7,568)
Trade receivables, net	₩	157,221	₩	193,669

There is no collateral held by the Company.

Details of other current financial assets and other non-current financial assets as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Other current financial assets				
Non-trade receivables	₩	239,438	₩	204,271
Accrued revenues		2,132		9,132
Short-term loans receivable		21,709		3,142
Short-term loans to employees		177		134
Others		33		-
		263,488		216,680
Other non-current financial assets				
Long-term non-trade receivables		39,832		32,332
Long-term accrued revenues		209		-
Long-term loans receivable		19,359		2,521
Leasehold deposits		65,343		56,183
Long-term loans to employees		203		17
Others		63		17
		125,010		91,071
		388,498		307,751
Less: allowance for doubtful accounts(Note 41)		(43,657)		(41,774)
Other current financial assets and other non-current financial assets, net	₩	344,841	₩	265,976

See Note 41 for the impairment of trade receivables, other current financial assets and other non-current financial assets at amortized cost and the Company's exposure to credit risk.

11. Contract Assets and Liabilities

Details of incremental costs (other current assets and other non-current assets), costs to fulfil a contract (other non-current assets), contract assets (other current assets) and contract liabilities (other current liabilities), recognized in relation to contracts with customers, as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Contract assets				
Contract assets – platform	₩	2,851	₩	-
Contract assets – contents		281		612
	₩	3,133	₩	612
Incremental costs				
Incremental costs – platform	₩	376	₩	-
Incremental costs – contents		6,841		3,819
	₩	7,217	₩	3,819
Costs to fulfil a contract				
Costs to fulfil a contract - platform	₩	6,543	₩	-
Contract liabilities				
Contract liabilities – platform	₩	116,753	₩	44,337
Contract liabilities – contents		167,017		156,013
	₩	283,770	₩	200,350

Significant changes in incremental costs and contract liabilities

Contract liabilities of the Company consist of deferred income from the settlement amount for paid game goods that were not used, permanent items and paid platform goods and cryptocurrency (Klaytn) as at the end of the reporting period, and costs to fulfil a contract are the capitalized those fees. Incremental costs are the capitalized fees paid to the open market (app market) in connection with the aforementioned settlement amount for paid game goods and transaction fees in connection with sales of cryptocurrency.

Compared to the beginning of the current period, incremental costs and contract liabilities as at December 31, 2019, have increased due to the increase in the amount of payments made for unused game goods, permanent items and paid platform goods, but it has not increase significantly.

Expenses and revenue recognized in relation to contract assets and contract liabilities

The following table shows how much of the revenue and expenses recognized in the current reporting period relates to carried-forward contract assets and contract liabilities.

(in millions of Korean won)		**2019**		**2018**
Expenses recognized that was included in the contract liability balance at the beginning of the year				
Incremental costs - contents	₩	3,819	₩	2,747
Revenue recognized that was included in the contract liability balance at the beginning of the year				
Contract liabilities - platform		44,308		39,835
Contract liabilities – contents		117,908		48,831
	₩	162,216	₩	88,666

Classification of revenue from contracts with customers

(in millions of Korean won)		**2019**		**2018**
Timing of revenue recognition				
At a point in time	₩	1,947,450	₩	1,731,483
Over a period		1,122,662		685,509
	₩	3,070,111	₩	2,416,992

12. Trade and Other payables

Trade and other payables as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Trade and other payables				
Trade payables	₩	28,950	₩	29,359
Non-trade payables		546,630		431,454
Withhold deposits received		2,987		-
		578,567		460,813
Non-current trade and other payables				
Long-term non-trade payables		32,849		389
Withhold deposits received		23		-
		32,872		389
	₩	611,439	₩	461,202

13. Other Financial Liabilities

Other financial liabilities as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Other current financial liabilities				
Accrued expenses	₩	25,256	₩	20,526
Deposits received				
Deposits received		299,565		129,889
Other non-current financial liabilities				
Long-term accrued expenses		62,843		45,869
	₩	387,664	₩	196,284

14. Other Assets and Liabilities

Other assets as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Other current assets				
Advance payments	₩	151,586	₩	107,872
Prepaid expenses		32,378		37,119
Prepaid value added tax		7,836		75,901
Corporate tax refund receivable		1,994		1,883
Others		127		830
		193,921		223,605
Other non-current assets				
Long-term advance payments		36,529		8,499
Long-term prepaid expenses		13,765		7,813
Other investments		100		100
Others		154		-
		50,548		16,412
	₩	244,469	₩	240,017

Other liabilities as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Other current liabilities				
Advances from customers	₩	613,860	₩	505,403
Deferred revenues		167,722		68,437
Withholdings		32,374		32,793
Value added tax payable		41,035		98,801
Government grants		565		565
Accrued expenses – short-term employee benefits liabilities		63,987		23,898
		919,543		729,896
Other non-current liabilities				
Deferred revenues		19,623		-
Long-term employee benefits liabilities		801		118
		20,424		118
	₩	939,967	₩	730,014

15. Inventories

(in millions of Korean won)		**2019**		**2018**
Merchandise	₩	53,690	₩	34,250
(Valuation allowance for merchandise)		(5,777)		(727)
Finished goods		922		799
(Valuation allowance for finished goods)		(456)		(451)
Raw materials		409		1,485
(Valuation allowance for raw materials)		(102)		(105)
Others		763		586
	₩	49,450	₩	35,836

Inventories recognized as an expense during the year ended December 31, 2019, amounted to ₩ 288,646 million (2018: ₩ 205,734 million). These were included in 'operating expenses'.

Loss on valuation of inventories to net realizable value amounted to ₩ 13,165 million (2018: ₩ 285 million). These were recognized as an expense during the year ended December 31, 2019, and included in 'operating expenses' in profit or loss.

16. Investments in Associates and Joint Venture

Investments in associates and joint venture as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)

Name[1]	Location	2019 Percentage of ownership (%)	2019 Acquisition cost	2019 Net assets value	2019 Book value	2018 Book value
Associates						
Addcredit Corp.[3]	Korea	17.7	₩ 300	₩ 93	₩ 93	₩ 112
DMS Network, Inc.[3]	USA	19.7	2,357	-	-	-
Tapas Media, Inc.	USA	20.4	2,101	1,042	1,125	177
NBT Inc.[3]	Korea	10.5	1,782	1,220	1,220	2,246
DAUM Venture Fund	Korea	39.5	8,024	9,664	9,664	7,925
Dunamu Inc.	Korea	22.4	5,019	55,640	59,385	61,717
Oscar Entertainment.	Korea	20.0	1,997	(64)	-	15
CNT TECH CO., LTD. [3]	Korea	18.0	5,001	3,684	5,670	6,457
Korea Credit Data	Korea	28.7	4,256	2,192	5,360	4,776
MANNACEA	Korea	23.8	10,000	3,877	3,877	5,319
Left Right Co., Ltd.	Korea	40.0	400	(30)	2	224
SCI VENTURE, INC.	Philippines	39.5	1,239	(415)	-	1,170
SHOELAB CO., LTD.[3]	Korea	16.6	500	-	-	-
LUXROBO CO., LTD. [3]	Korea	13.1	5,287	2,224	6,081	5,298
Deleo Korea Co., Ltd.[3]	Korea	9.9	3,000	877	877	759
Skelter Labs, Inc.[3]	Korea	17.0	2,501	851	1,674	2,044
TOROOC Inc.	Korea	20.9	2,500	701	845	744
Dreamcide SPC LTD.	Korea	49.0	5	(6)	-	-
DIGISONIC CO., LTD.[3]	Korea	12.6	100	51	52	76
D&C MEDIA CO.,LTD.[3]	Korea	18.2	12,614	7,494	15,026	14,475
K Cube NEO Fund[3]	Korea	15.6	2,520	1,975	1,977	1,974
BUNJANG Corp.[3]	Korea	9.0	203	151	280	247
Supergene Inc.[3]	Korea	5.0	498	1,493	1,448	1,229
InnoSignal CO., LTD.[3]	Korea	15.4	100	90	165	162
PoteNit Co., Ltd.[3]	Korea	12.1	2,096	(645)	-	-
Doctorbrain SPC Ltd.	Korea	49.0	5	(14)	-	-
CLAIR, Inc.[3]	Korea	2.7	500	651	586	681
KIF-Kakao Wooribank Technology Financing Fund[3]	Korea	19.7	15,000	13,603	13,603	7,554
13MILE.CO.LTD	Korea	31.7	4,435	(252)	3,321	2,945
ADSOTA CORP.	Vietnam	49.0	2,260	1,330	2,413	1,419
CARDOC Inc.	Korea	27.3	6,381	3,895	3,895	4,100
Kakao Kids	Korea	44.3	2,794	8,074	8,074	8,215
Action Square Co., Ltd.[5]	Korea	-	-	-	-	3,807
NOWBUSKING COMPANY[3]	Korea	16.2	3,000	-	2,160	2,724
LINEWALKS Inc.	Korea	35.5	3,000	602	2,869	3,002
CHEQUER Inc.	Korea	23.3	400	153	453	376
Hasys co.,ltd	Korea	47.2	17,729	2,028	15,419	17,133
mycelebs, inc[3]	Korea	15.8	5,000	1,136	5,038	5,000
DAIWAON. C. I. INC[3]	Korea	19.8	15,048	2,459	9,244	15,048
Haksan Publinshing Co., Ltd.[3]	Korea	19.8	14,653	2,881	11,337	14,653
PEOPLEFUND COMPANY[3]	Korea	9.4	3,836	(1,949)	2,636	3,836
SEOUL MEDIA.INC.	Korea	22.2	10,000	3,016	8,520	10,000
UBCARE CO., LTD.[3]	Korea	18.1	37,993	18,844	40,228	45,856
GC Social Marketing Inc. [2]	Korea	27.3	1,018	252	951	-
LEEMITELEESYUN CULTURE INDUSTRIAL JEONMUNHOESA INC.[2]	Korea	49.0	5	4	4	-
KM Solution Corp. (formerly, Tago Solutions Co., Ltd) [9]	Korea	-	-	-	-	3,000

(in millions of Korean won)

Name[1]	Location	2019 Percentage of ownership (%)	2019 Acquisition cost	2019 Net assets value	2019 Book value	2018 Book value
Associates						
Sixshop[2]	Korea	20.0	2,000	454	1,987	-
Tide Square Co., Ltd.[7]	Korea	28.9	26,464	12,331	18,828	-
Glohow Holdings PTE. LTE [2]	Singapore	20.0	1,489	356	1,480	-
MOVILL Co.Ltd [6]	Korea	70.0	1,400	(666)	804	-
EASYGO CO., LTD. [2]	Korea	20.0	100	98	98	-
G&G ENTERPRISE CO.,LTD. [2,3]	Korea	11.5	2,924	4,379	3,060	-
KakaoBank of Korea Corp. [8]	Korea	33.5	621,105	560,200	615,559	-
KW Books, Inc. [2]	Korea	20.0	8,000	1,089	8,000	-
325 E&C [2]	Korea	40.0	2,400	250	2,400	-
UNION K-Culture Contents Investment Fund [2]	Korea	33.3	2,500	2,478	2,478	-
EDAM Entertainment Corp [2]	Korea	40.0	11,000	37	11,000	-
Daeyoung Chaevi CO., Ltd [2,3]	Korea	10.0	5,000	576	5,000	-
Ocean Drive Studio Co., Ltd. [2]	Korea	22.2	10,003	2,216	10,003	-
Un7qi3 Corp.	Korea	21.7	2,831	344	2,703	468
Socialbean Co., Ltd [2,3]	Korea	2.9	999	128	961	-
DOZEN CO.,LTD [2,3]	Korea	9.9	495	50	495	-
KASA NETWORK PTE. LTD [3]	Singapore	4.3	1,086	1,086	1,086	-
Others (61 companies)[4]		2.6~35.7	43,522	13,589	30,087	34,121
			960,777	747,867	961,600	301,085
Joint Venture						
DAUM KAKAO PHILIPPINES CORP.	Philippines	50.0	5,609	4,385	4,385	4,103
Asankakao Medical Data Co., Ltd. [2]	Korea	50.0	5,000	4,862	4,862	-
PINPLAY JAPAN Co., Ltd. [2]	Japan	50.0	2,036	1,962	1,962	-
PHI digital healthcare Inc. [2]	Korea	50.0	6,250	3,944	6,130	-
The Bridges of Madison County Co., Ltd. [2]	Korea	50.0	5	(9)	5	-
			18,900	15,144	17,344	4,103
			₩ 979,678	₩ 763,012	₩ 978,944	₩ 305,188

[1] All investments in associates and joint venture are all unlisted securities excluding UBCARE CO., LTD., D&C MEDIA CO., LTD. and Action Square Co., Ltd.

[2] Newly acquired and established during 2019.

[3] Although the Company holds less than 20% of equity shares, the Company is considered to have a significant influences as the Company holds voting power to participate in the investee's Board of Directors.

[4] Small-sized entities invested by K Cube Venture Fund no.1, KAKAO Venture Fund, Kakao Digital Contents Fund, Kakao Game Growth Share Fund and KAKAO_CCVC Jeju Creative Economy Innovative Fund with the ownership percentage of 2.6%~35.7% and classified as associates as the Company is considered to have a significant influence.

[5] Disposed during 2019.

[6] Reclassified to an associate from a subsidiary due to the designation as a special company under Financial Law.

[7] Reclassified to an associate due to loss of control from changes in option contract.

[8] The entity is classified as an associate by exercising a call option that gives the right to acquire interests up to 34% of the total number of shares.

[9] As the Company obtained control over the entities in 2019, the entities are reclassified as subsidiaries from investments in associates.

Changes in carrying amounts of investments in associates and joint venture for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)

	2019								
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal and impairment**	**Reclassification**	**Gain (loss) on valuation of equity-method investments**	**Share in other comprehensive income (loss) of associates**	**Others**	**Ending balance**
Associates									
Addcredit Corp.	₩ 112	₩ -	₩ -	₩ -	₩ -	₩ (19)	₩ -	₩ -	₩ 93
DMS Network, Inc.	-	-	-	-	-	-	-	-	-
Tapas Media, Inc.[1]	177	-	-	-	-	(313)	109	1,152	1,125
NBT Inc.	2,246	-	-	-	-	(1,014)	(12)	-	1,220
DAUM Venture Fund	7,925	-	-	-	-	1,749	(11)	-	9,664
Dunamu Inc.[1,6]	61,717	-	-	(4,484)	-	2,705	201	(754)	59,385
Oscar Entertainment	15	-	-	-	-	(15)	-	-	-
CNT TECH CO.,LTD.	6,457	-	-	-	-	(780)	(7)	-	5,670
Korea Credit Data [1,5]	4,776	-	-	(144)	-	(2,341)	-	3,069	5,360
MANNACEA	5,319	-	-	-	-	(1,661)	220	-	3,877
Left Right Co., Ltd.[2]	224	-	-	(195)	-	(27)	-	-	2
SCI VENTURE INC. [2]	1,170	-	-	(524)	-	(844)	149	49	-
LUXROBO Co., Ltd.	5,298	-	-	-	-	(808)	(1)	1,592	6,081
Deleo Korea Co.,Ltd.	759	-	-	-	-	(361)	-	479	877
Skelter Labs, Inc.	2,044	-	-	-	-	(2,723)	-	2,353	1,674
TOROOC Inc.	744	-	-	-	-	(1,087)	-	1,188	845
Dreamcide SPC Ltd.	-	-	-	-	-	-	-	-	-
DIGISONIC Co., Ltd.	76	-	-	-	-	(42)	-	18	52
D&C MEDIA CO.,LTD.[1]	14,475	-	-	-	-	758	(83)	(124)	15,026
K Cube NEO Fund[4,6]	1,974	-	750	(480)	-	(268)	2	(1)	1,977
BUNJANG Corp. [5]	247	-	-	(350)	-	(171)	-	554	280
Supergene Inc.[5]	1,229	-	-	(1,448)	-	1,667	-	-	1,448
InnoSignal Co.,Ltd.	162	-	-	-	-	(3)	-	7	165
CLAIR, Inc.	681	-	-	-	(65)	(29)	-	-	586
KIF-Kakao Wooribank Technology Financing Fund[4]	7,554	-	7,200	-	-	(1,216)	66	-	13,603
13MILE.CO.LTD[4]	2,945	-	1,000	-	-	(624)	-	-	3,321
ADSOTA CORP[4]	1,419	-	1,180	-	-	(50)	(136)	-	2,413
CARDOC Inc.[1,4]	4,100	-	900	-	-	(1,102)	-	(3)	3,895
Kakao Kids	8,215	-	-	-	-	(142)	-	-	8,074
Action Square Co., Ltd.[5]	3,807	-	-	(3,807)	-	-	-	-	-
NOWBUSKING COMPANY	2,724	-	-	-	-	(564)	-	-	2,160
LINEWALKS Inc.	3,002	-	-	-	-	(133)	-	-	2,869

(in millions of Korean won)

Name	2019								
	Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Reclassification	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
CHEQUER Inc.	376	-	-	-	-	(37)	1	113	453
Hasys Co., Ltd.	17,133	-	-	-	-	(1,712)	(2)	-	15,419
mycelebs, inc [1]	5,000	-	-	-	-	(1,155)	(1)	1,194	5,038
DAIWAON. C. I. INC [2]	15,048	-	-	(6,121)	-	322	(5)	-	9,244
Haksan Publinshing Co., Ltd. [2]	14,653	-	-	(3,237)	-	(79)	-	-	11,337
PEOPLEFUND COMPANY	3,836	-	-	-	-	(1,487)	-	287	2,636
SEOUL MEDIA.INC.[2]	10,000	-	-	(1,499)	-	19	-	-	8,520
UBCARE CO., LTD. [1,5,6]	45,856	-	-	(4,371)	(3,856)	2,372	188	39	40,228
GC Social Marketing Inc. [3]	-	-	1,018	-	-	(71)	4	-	951
LEEMITELEESYUN CULTURE INDUSTRIAL JEONMUNHOESA INC[3]	-	-	5	-	-	(1)	-	-	4
KM Solution Corp. (formerly, Tago Solutions Co., Ltd)	3,000	(814)	-	-	-	(635)	-	(1,551)	-
Sixshop [3]	-	-	2,000	-	-	(13)	-	-	1,987
Tide Square Co., Ltd.[2,7]	-	26,464	-	(4,424)	-	(3,103)	(109)	-	18,828
Glohow Holdings PTE. LTE[3]	-	-	1,489	-	-	(9)	-	-	1,480
MOVILL Co.Ltd	-	1,400	-	-	-	(596)	-	-	804
EASYGO CO., LTD. [3]	-	-	100	-	-	(2)	-	-	98
G&G ENTERPRISE CO.,LTD.[3]	-	-	2,924	-	-	136	-	-	3,060
KakaoBank of Korea Corp. [1,8]	-	-	378,000	-	243,105	(714)	(3,589)	(1,243)	615,559
KW Books, Inc. [3]	-	-	8,000	-	-	-	-	-	8,000
325 E&C [3]	-	-	2,400	-	-	-	-	-	2,400
UNION K-Culture Contents Investment Fund [3]	-	-	2,500	-	-	(22)	-	-	2,478
EDAM Entertainment Corp [3]	-	-	11,000	-	-	-	-	-	11,000
Daeyoung Chaevi CO., Ltd [3]	-	-	5,000	-	-	-	-	-	5,000
Ocean Drive Studio Co., Ltd. [3]	-	-	10,003	-	-	-	-	-	10,003
Un7qi3 Corp.[4]	468	-	2,301	-	-	(66)	-	-	2,703
Socialbean Co., Ltd [3]	-	-	999	-	-	(38)	-	-	961
DOZEN CO.,LTD [3]	-	-	495	-	-	-	-	-	495
KASA NETWORK PTE. LTD[3]	-	-	1,086	-	-	-	-	-	1,086
Others [1,2,3,4,5] (61 companies)	34,121	-	345	(11,716)	(283)	(3,532)	(2,048)	13,201	30,087
Joint Venture									
DAUM KAKAO PHILIPPINES CORP.	4,103	-	-	-	-	(8)	291	-	4,385
Asankakao Medical Data Co., Ltd. [3]	-	-	5,000	-	-	(138)	-	-	4,862

(in millions of Korean won)

	2019								
Name	Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Reclassification	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
PINPLAY JAPAN Co., Ltd. [3]	-	-	2,036	-	-	(168)	94	-	1,962
PHI digital healthcare Inc [1]	-	-	6,250	-	-	427	-	(547)	6,130
The Bridges of Madison County Co., Ltd. [3]	-	-	5	-	-	-	-	-	5
	₩ 305,188	₩ 27,050	₩ 453,986	₩ (42,802)	₩ 238,901	₩ (19,771)	₩ (4,679)	₩ 21,071	₩ 978,944

[1] Others include gain or loss on disposal from changes in percentage of ownership with maintaining significant influence during 2019.

[2] During 2019, the Company recognized impairment loss for investments in Left Right Co., Ltd. and other nineteen associates amounting to ₩ 25,876 million as their recoverable amounts are considered less than their book values as at December 31, 2019.

[3] Newly acquired and established during 2019.

[4] Additionally acquired during 2019.

[5] Disposed during 2019.

[6] The Company received dividend income from Dunamu Inc., UBCARE CO., LTD. and K Cube NEO Fund amounting to ₩ 5,329 million and deducted it from the carrying amount of investments in associates.

[7] The fair value of the call option to controlling shareholders of Tide Square Co., Ltd. held by the Company amounting to ₩ 6,748 million was reclassified to derivative assets during 2019 and the entity is reclassified to an associate due to loss of control from changes in option contract.

[8] The entity is classified as an associate by exercising a call option that gives the right to acquire interests up to 34% of the total number of shares.

(in millions of Korean won)

Name	2018 Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
Associates								
AD Credits	₩ 92	₩ -	₩ -	₩ -	₩ 20	₩ -	₩ -	₩ 112
Tapas Media, Inc.[2,3]	2,999	-	-	(2,344)	(738)	143	117	177
NBT Corp..	2,012	-	-	-	234	-	-	2,246
DAUM Venture Fund	8,656	-	-	(791)	3	57	-	7,925
Dunamu Inc.[1,2]	33,376	-	570	(2,195)	28,883	448	635	61,717
OSKAR Entertainment Co.,LTD.	745	-	-	-	(706)	-	(23)	15
CNT TECH CO.,LTD.	5,994	-	-	-	472	(9)	-	6,457
Korea Credit Data[2]	4,658	-	-	-	(241)	-	359	4,776
MannaCEA[2]	3,835	-	-	-	(1,357)	(307)	3,148	5,319
NeoBazar Inc.[1,2]	738	(3,850)	-	-	(1,382)	-	4,495	-
Left Right CO., LTD.	291	-	-	-	(67)	-	-	224
SCI VENTURE INC.[2]	1,293	-	-	-	(11)	(98)	(14)	1,170
SONNORI CORP.[1,7]	3,767	(5,929)	-	-	(1,626)	-	3,788	-
JOH&Company[1]	8,673	(13,334)	-	-	(582)	-	5,243	-
LUXROBO CO., LTD..[2,3]	5,222	-	-	-	(1,193)	(2)	1,271	5,298
Leferi Inc.	171	-	-	-	88	-	-	260
Deleo Korea Co.,Ltd.[2]	807	-	-	-	(244)	-	196	759
Skelter Labs, Inc.[2]	2,658	-	-	-	(2,475)	-	1,862	2,044
TOROOC Inc.	2,400	-	-	-	(1,655)	-	-	744
Dreamcide SPC Ltd.	4	-	-	-	(4)	-	-	-
DIGISONIC Co., Ltd.	83	-	-	-	(8)	-	-	76
D&C MEDIA CO., LTD.[2]	16,291	-	-	-	785	(123)	(2,478)	14,475
K Cube NEO Fund[7]	711	-	1,500	-	(237)	-	-	1,974
BUNJANG Corp.	958	-	-	(571)	(123)	(17)	-	247
Supergene Inc.	994	-	-	-	235	-	-	1,229
InnoSignal Co., Ltd.[2]	86	-	-	-	3	-	72	162
PoteNit Co.,Ltd.[2,7]	2,000	-	96	-	(1,931)	(87)	(77)	-
Doctorbrain SPC Ltd.	2	-	-	-	(2)	-	-	-
CLAIR, Inc.[2]	500	-	-	-	75	-	106	681
KIF-Kakao Wooribank Technology Financing Fund[7]	3,000	-	4,800	-	(246)	-	-	7,554
13MILE.CO., LTD[4]	-	-	3,435	-	(490)	-	-	2,945
ADSOTA CORP.[4]	-	-	1,080	-	156	183	-	1,419
CARDOC Inc.[2,5]	-	5,481	-	-	(739)	-	(642)	4,100
Kakao Kids (formerly, BLUEPIN Inc.)[2,5]	-	2,794	-	-	(310)	296	5,436	8,215

(in millions of Korean won)

Name	2018 Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
Associates								
Action Square Co., Ltd.[2,3,4]	-	-	20,000	(15,168)	(992)	57	(90)	3,807
WAY2BIT[4,8]	-	-	2,990	(2,990)	-	-	-	-
NOWBUSKING COMPANY[4]	-	-	3,000	-	(276)	-	-	2,724
LINEWALKS Inc.[4]	-	-	3,000	-	2	-	-	3,002
CHEQUER Inc.[4]	-	-	400	-	(34)	10	-	376
READY ENTERTAINMENT[4]	-	(4,761)	4,761	-	467	-	(467)	-
BH Entertainment[4]	-	(8,100)	8,100	-	364	-	(364)	-
J,WIDE-COMPANY[4]	-	(2,550)	2,550	-	(174)	-	174	-
Hasys Co., Ltd.[5]	-	17,729	-	-	(598)	2	-	17,133
mycelebs, inc[4]	-	-	5,000	-	-	-	-	5,000
DAIWAON. C. I. INC[4]	-	-	15,048	-	-	-	-	15,048
Haksan Publinshing Co.Ltd.[4]	-	-	14,653	-	-	-	-	14,653
easi6 Inc.[4]	-	-	700	(700)	-	-	-	-
PEOPLEFUND COMPANY[4]	-	-	3,836	-	-	-	-	3,836
SEOUL MEDIA.INC.[4]	-	-	10,000	-	-	-	-	10,000
Allstay Co., LTD[4]	-	1,424	-	-	-	-	-	1,424
UBCARE CO., LTD.	-	-	42,000	-	-	-	3,856	45,856
Others[2,6] (63 companies)	44,820	1,977	8,098	(18,959)	(6,707)	(63)	6,739	35,905
Joint Venture								
DAUM KAKAO PHILIPPINES CORP.	4,115	-	-	-	12	(25)	-	4,103
	₩ 161,950	₩ (9,118)	₩ 155,618	₩ (43,718)	₩ 6,652	₩ 465	₩ 33,340	₩ 305,188

[1] As the Company obtained control over the entity in 2018, the entities are reclassified as subsidiaries from investments in associates.
[2] Others include gain or loss on disposal from changes in percentage of ownership with maintaining significant influence during 2018.
[3] During 2018, the Company recognized impairment loss for investments in Action Square Co., Ltd. and other nineteen associates amounting to ₩ 36,747 million as their recoverable amounts are considered less than their book values as at December 31, 2018.
[4] Newly acquired during 2018.
[5] Reclassified to an associate from a subsidiary due to loss of control.
[6] Newly acquired N42 corp. and other nine associates in 2018.
[7] Additionally acquired during 2018.
[8] Disposed during 2018.

Fair value of investments in associates that has a quoted market price as at December 31, 2019 and 2018, is as follows:

(in millions of Korean won)	Company	2019		2018	
		Fair value	Book value	Fair value	Book value
Associates	D&C MEDIA CO.,LTD.	₩ 43,296	₩ 15,026	₩ 31,498	₩ 14,475
	UBCARE CO., LTD.	54,305	40,228	45,856	45,856
	Action Square Co., Ltd.	-	-	4,832	3,807

The tables below provide a reconciliation of the summarized financial information presented to the carrying amount of its interest in material associates and joint venture.

(in millions of Korean won)	2019				
	Net assets at the end of the year (a)	The Company's share in % (b)	The Company's share in KRW (a*b)	Goodwill and etc.	Book value
KakaoBank of Korea Corp.	₩ 1,670,973	33.5%	₩ 560,200	₩ 55,359	₩ 615,559
Dunamu Inc.	248,006	22.4%	55,640	3,745	59,385
UBCARE CO., LTD.	103,970	18.1%	18,844	21,383	40,228
Tide Square Co., Ltd.	42,683	28.9%	12,331	6,497	18,828
D&C MEDIA CO.,LTD.	41,135	18.2%	7,494	7,532	15,026
Hasys Co., Ltd.	4,299	47.2%	2,028	13,390	15,419

(in millions of Korean won)

	2018				
	Net assets at the end of the year (a)	The Company's share in % (b)	The Company's share in KRW (a*b)	Goodwill and etc.	Book value
Dunamu Inc.	₩ 255,862	22.7%	₩ 58,082	₩ 3,635	₩ 61,717
UBCARE CO., LTD.	103,005	20.0%	20,570	25,286	45,856
D&C MEDIA CO.,LTD.	36,904	18.5%	6,843	7,632	14,475
Hasys Co., Ltd.	5,696	47.2%	2,688	14,445	17,133

A summary of financial information on the associates and joint venture for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)

	2019							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
KakaoBank of Korea Corp.	₩ 19,743,144	₩ 2,980,964	₩ 21,030,991	₩ 14,396	₩ 664,940	₩ 13,733	₩ 2,433	₩ 16,166
Dunamu Inc.	413,429	115,995	248,978	102,917	140,251	9,456	-	3,760
UBCARE CO., LTD.	98,050	40,786	30,182	1,400	110,808	8,802	(1,234)	7,568
Tide Square Co., Ltd.	52,631	20,807	24,222	4,952	40,057	(11,141)	503	(10,638)
D&C MEDIA CO.,LTD.	48,386	4,957	11,286	748	42,140	4,640	-	4,640
Hasys co.,ltd	7,678	1,713	2,038	3,053	12,856	(1,394)	-	(1,394)
	₩ 20,363,317	₩ 3,165,221	₩ 21,347,697	₩ 127,466	₩ 1,011,053	₩ 24,095	₩ 1,702	₩ 21,496

(in millions of Korean won)

	2018							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
Dunamu Inc.	₩ 560,455	₩ 68,158	₩ 362,683	₩ 9,056	₩ 479,587	₩ 137,541	₩ -	₩ 137,541
UBCARE CO., LTD.[1]	75,808	39,444	9,783	2,445	63,758	4,682	-	4,682
D&C MEDIA CO.,LTD.	39,228	4,545	6,181	573	32,082	5,414	-	5,414
Hasys co.,ltd[1]	7,615	2,210	1,229	2,899	9,720	(399)	21	(378)
	₩ 683,106	₩ 114,357	₩ 379,876	₩ 14,972	₩ 585,147	₩ 147,239	₩ 21	₩ 147,259

[1] The above table represents financial information since the acquisition date.

17. Property and Equipment

Changes in property and equipment for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	2019							
	Land	Buildings	Structures	Machinery and equipment	Vehicles	Furniture	Construction in progress	Total
Beginning balance	₩ 57,233	₩ 55,268	₩ 752	₩ 132,372	₩ 1,845	₩ 61,019	₩ 6,324	₩ 314,812
Acquisition	7,803	1,162	32	59,949	3,974	37,406	2,693	113,018
Changes in scope of consolidation	2,219	725	-	48	3,694	981	(3,751)	3,917
Disposals	(65)	(2,471)	(11)	(1,663)	(815)	(1,259)	(140)	(6,423)
Depreciation	-	(1,580)	(274)	(53,004)	(817)	(27,317)	-	(82,992)
Impairment	-	-	-	-	-	(57)	-	(57)
Transfer	-	-	-	469	-	3,877	(2,433)	1,912
Others[1]	-	350	-	149	-	5,132	-	5,631
Ending balance	₩ 67,191	₩ 53,454	₩ 499	₩ 138,319	₩ 7,881	₩ 79,781	₩ 2,693	₩ 349,818
December 31, 2019								
Acquisition cost	₩ 67,191	₩ 61,406	₩ 860	₩ 336,427	₩ 11,390	₩ 156,720	₩ 2,693	₩ 636,685
Government grants	-	-	-	(44)	-	(308)	-	(352)
Accumulated depreciation	-	(7,952)	(360)	(198,006)	(3,508)	(76,573)	-	(286,400)
Accumulated impairment	-	-	-	(58)	-	(57)	-	(115)
Net book value	₩ 67,191	₩ 53,454	₩ 499	₩ 138,319	₩ 7,881	₩ 79,781	₩ 2,693	₩ 349,818

[1] Others include currency translation effects.

(in millions of Korean won)

	2018							
	Land	Buildings	Structures	Machinery and equipment	Vehicles	Furniture	Construction in progress	Total
Beginning balance	₩ 57,220	₩ 53,771	₩ 215	₩ 119,162	₩ 520	₩ 38,423	₩ 1,733	₩ 271,044
Acquisition	8	1,040	567	59,707	825	35,155	3,891	101,193
Changes in scope of consolidation	(28)	10,029	18	1,285	878	3,506	3,890	19,578
Disposals	-	(9,501)	(6)	(509)	(95)	(1,224)	-	(11,335)
Depreciation	-	(1,619)	(39)	(47,279)	(52)	(18,661)	-	(67,650)
Transfer	33	1,559	-	6	(150)	3,819	(3,191)	2,077
Others[1]	-	(11)	(3)	-	(80)	-	-	(95)
Ending balance	₩ 57,233	₩ 55,268	₩ 752	₩ 132,372	₩ 1,845	₩ 61,019	₩ 6,324	₩ 314,812
December 31, 2018								
Acquisition cost	₩ 57,233	₩ 61,740	₩ 847	₩ 300,936	₩ 3,166	₩ 119,165	₩ 6,324	₩ 549,411
Government grants	-	-	-	(28)	-	(286)	-	(314)
Accumulated depreciation	-	(6,473)	(95)	(168,536)	(1,321)	(57,860)	-	(234,285)
Net book value	₩ 57,233	₩ 55,268	₩ 752	₩ 132,372	₩ 1,845	₩ 61,019	₩ 6,324	₩ 314,812

[1] Others include currency translation effects.

Certain land and buildings are provided as collateral in relation to loans agreement (Note 38).

18. Investment Properties

Changes in investment properties for the year ended December 31, 2019, are as follows:

(in millions of Korean won)	**Land**	**Buildings**	**Total**
Beginning balance	₩ -	₩ -	₩ -
Changes in scope of consolidation	2,146	701	2,848
Depreciation	-	(5)	(5)
Ending balance	₩ 2,146	₩ 697	₩ 2,843
December 31, 2019			
Acquisition cost	₩ 2,146	₩ 734	₩ 2,880
Accumulated depreciation	-	(37)	(37)
Net book value	₩ 2,146	₩ 697	₩ 2,843

During the year, rental income earned from operating leases of investment property is ₩ 29 million, and direct operating expenses (including repairs and maintenance) from property that generated rental income are ₩ 2 million.

19. Intangible Assets

Changes in intangible assets for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	2019						
	Goodwill[1]	Development costs	Industrial property rights	Exclusive rights	Membership / Brand	Other intangible assets[2,3]	Total
Beginning balance	₩ 3,175,610	₩ 8,861	₩ 39,467	₩ 7,388	₩ 356,875	₩ 277,064	₩ 3,865,265
Acquisition	-	242	1,242	926	3,652	56,250	62,312
Transfer	-	-	-	12,945	-	6,178	19,123
Changes in scope of consolidation	114,193	-	61	15,643	344	(7,950)	122,290
Disposal	-	-	(5)	(16)	(386)	(10,883)	(11,290)
Amortization	-	(4,760)	(5,767)	(9,520)	-	(59,631)	(79,679)
Impairment	(374,639)	(224)	(28)	-	(56)	(65,035)	(439,982)
Other	-	-	20	-	-	10,356	10,375
Ending balance	₩ 2,915,165	₩ 4,119	₩ 34,990	₩ 27,365	₩ 360,429	₩ 206,348	₩ 3,548,416
December 31, 2019							
Acquisition cost	₩ 3,302,966	₩ 24,592	₩ 41,783	₩ 37,460	₩ 360,524	₩ 382,185	₩ 4,149,509
Accumulated amortization	-	(18,274)	(5,183)	(10,094)	-	(119,757)	(153,309)
Government grants	-	(5)	(1)	-	-	(17)	(23)
Accumulated impairment	(387,801)	(2,195)	(1,609)	-	(95)	(56,062)	(447,762)
Net book value	₩ 2,915,165	₩ 4,119	₩ 34,990	₩ 27,365	₩ 360,429	₩ 206,348	₩ 3,548,416

[1] The impairment loss on goodwill is recognized from cash-generating unit goodwill related to music services arising from the M&A of Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.), a subsidiary. Due to changes in the market environment and deteriorated in profitability from changes in the regulation on collection of rights costs, the recoverable amount became less than the carrying amount at the end of the reporting period and ₩ 352.7 billion of goodwill was recognized as an impairment loss.

[2] The impairment loss on intangible assets is recognized from customer relationships recognized by the Company at the acquisition of Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.). The Company estimated the recoverable amount as at December 31, 2019, and recognized the difference between the recoverable amount and its book value as impairment loss amounting to ₩ 52.4 billion as the Company determined that the recognized customer relationships and future economic benefit are less than there book value.

[3] As at December 31, 2019, the Company owns marketable cryptocurrency of ₩ 182 million and non-marketable cryptocurrency of ₩ 2,768 million.

(in millions of Korean won)

	2018						
	Goodwill[1]	Development costs[2]	Industrial property rights[2]	Exclusive rights[2]	Membership / Brand[2]	Other intangible assets[2,3]	Total
Beginning balance	₩ 3,020,579	₩ 16,231	₩ 37,187	₩ 6,500	₩ 350,404	₩ 258,681	₩ 3,689,582
Acquisition	-	519	442	4,328	7,493	45,400	58,183
Transfer	-	-	-	-	-	214	214
Changes in scope of consolidation	162,782	2,338	8,936	300	-	29,759	204,115
Disposal	(7,102)	(2,579)	-	(413)	(1,022)	(1,734)	(12,850)
Amortization	-	(5,769)	(5,261)	(3,194)	-	(53,154)	(67,379)
Impairment	(898)	(1,872)	(1,901)	(133)	(1)	(3,514)	(8,320)
Other	251	(7)	64	-	-	1,411	1,719
Ending balance	₩ 3,175,610	₩ 8,861	₩ 39,467	₩ 7,388	₩ 356,875	₩ 277,064	₩ 3,865,265
December 31, 2018							
Acquisition cost	₩ 3,194,834	₩ 23,991	₩ 44,071	₩ 8,752	₩ 356,875	₩ 358,336	₩ 3,986,859
Accumulated amortization	-	(13,247)	(3,094)	(1,364)	-	(79,120)	(96,826)
Government grants	-	(5)	(1)	-	-	(2)	(8)
Accumulated impairment	(19,223)	(1,878)	(1,509)	-	-	(2,151)	(24,761)
Net book value	₩ 3,175,610	₩ 8,861	₩ 39,467	₩ 7,388	₩ 356,875	₩ 277,064	₩ 3,865,265

[1] The impairment loss on goodwill is recognized for Nylon Korea Media and certain other subsidiaries, as the recoverable amount decreased and became less than the carrying amount due to slump in sales and etc.

[2] The impairment loss on intangible assets is recognized from PATH MOBILE INC. PTE. LTD. and certain other subsidiaries. The Company estimated the recoverable amount as at December 31, 2018, and recognized the difference between the recoverable amount and its book value as impairment loss considering limited future economic benefit from the projects being developed.

[3] As at December 31, 2018, the Company owns marketable cryptocurrency of ₩ 2,053 million and non-marketable cryptocurrency of ₩ 4,721 million.

Management reviews operation performance based on region and type of operation, and manages goodwill at the operating segment level.

The following is a summary of goodwill allocation for cash generating units ("CGU"s) operated by management for the years ended December 31, 2019 and 2018:

(in millions of Korean won)	2019					
	Beginning balance	Increase [1]	Changes in scope of consolidation	Impairment	Other adjustments [2]	Ending balance
Internet portal service and other service	₩ 1,080,385	₩ 4,957	₩ -	₩ (3,485)	₩ -	₩ 1,081,856
Music service	1,221,284	-	-	(352,733)	-	868,551
Other mobile service	261,858	81,170	(10,278)	(9,187)	(18,193)	305,370
Game business	41,461	-	-	(4,322)	(729)	36,410
Commerce service	277,901	-	-	-	-	277,901
Entertainment service	292,722	76,997	-	(4,912)	(19,731)	345,077
	₩ 3,175,610	₩ 163,124	₩ (10,278)	₩ (374,639)	₩ (38,653)	₩ 2,915,165

[1] It is the amount increased by the acquisition of shares in 14 companies including Moonlight Film and the transfer of business with 8 companies including CMNP Corp. during 2019.

[2] It includes the amount transferred as an identifiable asset from the purchase price allocation amount related to the business combination which was not determined and presented at a provisional amount in 2018 because the purchase price allocation amount has been determined in 2019.

(in millions of Korean won)

	2018							
	Beginning balance	Increase [1]	Transfer[2,3]	Disposal	Changes in scope of consolidation	Impairment	Other adjustments [4]	Ending balance
Internet portal service and other service	₩ 1,410,206	₩ -	₩ (329,821)	₩ -	₩ -	₩ -	₩ -	₩ 1,080,385
Music service	1,446,307	-	(228,714)	-	-	-	3,691	1,221,284
Other mobile service	117,287	116,305	51,920	(7,102)	(8,672)	-	(7,881)	261,858
Game business	33,668	7,793	-	-	-	-	-	41,461
Commerce service	-	-	277,901	-	-	-	-	277,901
Entertainment service	13,111	56,552	228,714	-	-	-	(5,655)	292,722
	₩ 3,020,579	₩ 180,650	₩ -	₩ (7,102)	₩ (8,672)	₩ -	₩ (9,845)	₩ 3,175,610

[1] It is the amount increased by the acquisition of shares in 19 companies including luxi Co., Ltd. during 2018.

[2] In 2018, the commerce business division was transferred to Kakao Commerce Corp., a subsidiary, through the split off and ₩ 329,821 million of goodwill of existing internet portal service, and other service was also transferred.

[3] The Company invested in cash to the video / music contents business of Kakao M Corp. and also transferred ₩ 228,714 million of goodwill of existing music service.

[4] It includes the amount transferred as an identifiable asset from the purchase price allocation amount related to the business combination which was not determined and presented at a provisional amount before the prior year because the purchase price allocation amount has been determined in 2018.

The Company annually tests impairment of its goodwill. The recoverable amounts of CGU or CGUs have been determined based on value-in-use calculations. These calculations use cash flow projections after tax based on financial budgets approved by management covering a five-year period.

The following table sets out major assumption, operating profit rate, revenue growth rate, perpetual growth rate and after-tax discount rate used in the value-in-use calculations for those CGUs that have significant goodwill allocated to them.

	2019		
	Internet portal and other services[1]	**Music Services[2]**	**Other mobile service, game business, commerce service, other contents service, entertainment service and others**
Operating profit rate	13.9%~ 19.3%	16.8% ~ 17.6%	(-)11.7% ~ 17.0%
Revenue growth rate	5.5%~18.5%	4.3% ~ 23.6%	(-)18.1% ~ 261.1%
Perpetual growth rate	2.0%	1.0%	1.0% ~ 2.0%
After-tax discount rate	10.4%	10.4%	8.0% ~ 18.7%

	2018		
	Internet portal and other services	**Music Services**	**Other mobile service, game business, commerce service, other contents service, entertainment service and others**
Operating profit rate	8.8% ~ 19.8%	18.7% ~ 20.3%	1.5% ~22.54%
Revenue growth rate	6.5% ~ 20.3%	11.0% ~ 39.3%	3.9% ~ 44.0%
Perpetual growth rate	2.0%	2.0%	1.0%
After-tax discount rate	10.6%	9.1%	9.1% ~ 17.2%

These assumptions were used for each cash flow generation unit within the operating segment.

The after-tax discount rate is the discount rate that reflects the specific risk associated with the segment to which the CGUs (group) belongs.

[1] When estimating the recoverable amount, if a perpetual growth rate applied to CGU is lower than the management's estimate by 0.5%, the recoverable amount will be reduced by 3.9%.

If after-tax discount rate applied to the estimation is higher than the management's estimate by 1%, the recoverable amount will decrease by 10.7%.

[2] When estimating the recoverable amount, if a perpetual growth rate applied to CGU is lower than the management's estimate by 0.5%, the recoverable amount will be reduced by 3.6%.

If after-tax discount rate applied to the estimation is higher than the management's estimate by

1%, the recoverable amount will decrease by 9.5%.

20. Leases

(a) Amounts recognized in the consolidated statement of financial position

The consolidated statement of financial position shows the following amounts relating to leases:

(in millions of Korean won)	**December 31, 2019**	**January 1, 2019**
Right-of-use assets		
Properties	₩ 179,781	₩ 176,750
Machinery	42,242	18,910
Vehicles	5,436	4,132
	₩ 227,458	₩ 199,792

(in millions of Korean won)	**December 31, 2019**	**January 1, 2019**
Lease liabilities		
Current	₩ 68,077	₩ 42,514
Non-current	164,989	156,261
	₩ 233,065	₩ 198,775

Additions to the right-of-use assets during the 2019 financial year were ₩ 83,598 million.

(b) Amounts recognized in the consolidated statement of profit or loss

The consolidated statement of profit or loss shows the following amounts relating to leases:

(in millions of Korean won)		**2019**
Depreciation of right-of-use assets		
Properties	₩	37,994
Machinery		15,492
Vehicles		2,643
	₩	56,129
Interest expense relating to lease liabilities (included in finance cost)	₩	6,370
Expense relating to short-term leases (included in operating expenses)		11,142
Expense relating to leases of low-value assets that are not short-term leases (included in operating expenses)		927
Expense relating to variable lease payments not included in lease liabilities (included in operating expenses)		22,957
Income from subleases of right-of-use assets		69

The total cash outflow for leases in 2019 was ₩ 78,071 million.

21. Borrowings, Bonds and Lease Liabilities

Short-term borrowings and lease liabilities as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)

Classification	**Lender**	**Interest rate as at December 31, 2019**	**2019**	**2018**
Current portion of long-term borrowings	8th non-guarantee private bonds[1]	-	₩ -	₩ 50,000
	9-1st non-guarantee public bonds[2]	-	-	60,000
	Discount on issuance of bonds		-	(28)
	Net		-	109,972
	THE KUMAMOTO DAI-ICHI SHINKIN BANK and others	0.90 ~ 4.30%	177	-
Convertible bonds[3,5]	10th non-guarantee private convertible bonds	-	208,400	241,000
	Discount on issuance of bonds		(269)	(552)
	Net		208,131	240,448
Exchangeable bonds[3,4]	11th guaranteed private convertible bonds	-	230,000	230,000
	Discount on issuance of bonds		(880)	(1,524)
	Net		229,120	228,476
Short-term lease liabilities[6]	Properties and others	1.45% ~ 5.92%	69,139	-
	Present value discounts		(1,062)	-
	Net		68,077	-

(in millions of Korean won)

Classification	Lender	Interest rate as at December 31, 2019	2019	2018
Loans for operation capital	KB Kookmin Bank	-	-	20,000
Facility loan	Woori Bank	-	-	1,000
Facility loan	Woori Bank	-	-	4,000
Loans for operation capital	Employees of subsidiaries	-	450	190
Loans for operation capital	KB Kookmin Bank and others	2.81%~5.98%	7,079	3,937
Redeemable convertible preferred shares	Preferred shareholders	-	3,638	1,457
			₩ 516,672	₩ 609,480

[1] The Company repaid all of outstanding bonds (₩ 50 billion) as the 8th non-guarantee private bonds matured in 2019.
[2] The Company repaid all of outstanding bonds (₩ 60 billion) as the 9-1st non-guarantee public bonds matured in 2019.
[3] Reclassified as short-term borrowings as the period of early redemption right is within a year as at December 31, 2019.
[4] As Kakao M Corp., a subsidiary, merged with the Company during 2018, shares subject to exchange was changed from ordinary shares of Kakao M Corp. to ordinary shares of the Parent Company.
[5] 274,439 private convertible bonds issued by the Company were converted into ordinary shares of the Company during 2019 (Note 27).
[6] The Company recognized lease liabilities as at January 1, 2019 in accordance with the application of Korean IFRS 1116.

Long-term borrowings and long-term lease liabilities as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)

Classification	Lender	Interest rate as at December 31, 2019	2019	2018
Bonds	Public offering (9-2th non-guaranteed public bonds)	2.30%	₩ 40,000	₩ 40,000
	Discount on issuance of bonds		(35)	(61)
	Net		39,965	39,939
Long-term lease liabilities[1]	Properties and others	1.45%~5.92%	179,994	-
	Present value discounts		(15,005)	-
	Net		164,989	-
Long-term borrowings	THE KUMAMOTO DAI-ICHI SHINKIN BANK	0.90%~4.30%	7,418	1,672
	Shinhan Bank	-	-	500
	Industrial Bank of Korea	-	-	500
Redeemable convertible preferred shares and exchangeable bonds	Preferred shareholders		24,886	2,384
			₩ 237,258	₩ 44,995

[1] The Company recognized lease liabilities as at January 1, 2019 in accordance with the application of Korean IFRS 1116.

Movements in the borrowings for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Beginning balance	₩	654,475	₩	795,180
Changes in scope of consolidation		7,374		13,147
Additions		364,214		41,040
Repayments		(455,502)		(177,161)
Conversion and others		(32,600)		(19,831)
Amortization of present value discounts		1,151		2,100
Others[1]		(18,247)		-
Ending balance	₩	520,865	₩	654,475

[1] Some ordinary shares of TNK Factory, a subsidiary, were converted to redeemable convertible preferred shares during 2019. As conversion rights and early redemption rights embedded in the above redeemable convertible preferred shares meet the terms of separation of embedded derivatives, they are separately accounted for as derivative liabilities.

Movements in the lease liabilities for the year ended December 31, 2019, are as follows:

(in millions of Korean won)		**2019**
Changes in accounting policy (Note 42)	₩	198,775
Changes in scope of consolidation		340
Increase		86,231
Repayments		(49,851)
Transfer		(8,800)
Amortization of present value discounts		6,370
Ending balance	₩	233,065

Details of exchangeable bonds issued by the Parent Company are as follows:

		Details
Type		11th US dollar-settled zero coupon guaranteed exchangeable bonds denominated in Korean won
Principal amount		₩ 230,000 million
Interest rate	Coupon rate	0%
	Yield rate	0%
Date of maturity		May 11, 2021
Redemption		1) Redemption at maturity: Unless previously redeemed, repurchased and cancelled or exchanged, 100% of principal amount will be redeemed
		2) Early redemption : put or call option is exercised
Exchange detail	Exchange ratio	100%
	Exchange price	₩ 128,223 (per share)
	Exchange into	Ordinary shares of Kakao Corp.
	Exchange period	From and including June 21, 2016 up to and including April 30, 2021
	Exchange price adjustments	Subject to adjustment in certain circumstances as described in the agreement
Redemption at the option of the bondholders (Put Option)		Until and unless previously redeemed, repurchased and cancelled, or exchanged, on May 11, 2019, each of the bondholders has the right, at the option of such holder, to require the Company to redeem all or a portion of principal amount. And the bondholders may claim early redemption if: - a change of control occurs with respect to Kakao corp., or - the shares officially cease to be listed or admitted for trading or are suspended for a period of at least 30 consecutive trading days.
Redemption at the option of the issuer (Call Option)		The Company may, at its option at any time on or after May 11, 2019, until the 30th six business day prior to the maturity date, redeem the bonds if the closing price of a share for each of 20 trading days in the period of 30 consecutive trading days ending on the trading day immediately prior to the date of our redemption notice, is at least 130% of the prevailing exchange price. And the Company may claim early redemption if: - at least 90% of the initial principal amount of the bonds have been redeemed, repurchased and cancelled, or exchanged, or - certain changes relating to taxation in Korea that the Company becomes obliged to gross up for any payments on the bonds

The entire amount of financial instruments was accounted for liability as the event of default of the exchangeable bonds is considered contingent settlement provisions.

As at December 31, 2019, the Company received payment guarantees from KB Kookmin Bank for the exchangeable bonds. In connection with the said payment guarantees, the stock return

rights for the remaining shares subject to exchange were provided as collateral. 1,793,755 treasury shares required for the exchange are deposited at Korea Securities Depository.

Details of convertible bonds issued by the Parent Company are as follows:

		Detail
Type		10th non-guaranteed private convertible bonds
Principal amount		₩ 241,000 million
Interest rate	Coupon rate	0%
	Yield rate	0%
Date of maturity		April 14, 2021
Redemption at maturity		The bonds to be redeemed at their principal amount with 0% of yield to maturity on the maturity date
Conversion details	Conversion ratio	100%
	Conversion price	₩ 118,786 (per share)
	Conversion to	Ordinary shares of Kakao Corp.
	Conversion period	From and including April 14, 2017 up to and including March 14, 2021
	Conversion price adjustments	Adjusted in accordance with the agreement in the event of any occasions prescribed in the agreement
Investor's early redemption right (Put Option)		Bondholders may claim early redemption before the maturity date for either entire or partial amount of principal on every April 14th starting from 2019, three years after the issuance date.

The entire amount of financial instruments was accounted for liability as the event of default of the convertible bonds is considered contingent settlement provisions. During 2019, convertible bond of ₩ 32,546 million (principal amount of ₩ 32,600 million) has been converted into ordinary shares (Note 27).

Details of redeemable convertible preferred shares issued by subsidiaries as at December 31, 2019, are as follows:

	Issuer[1]		
	Friendsgames Co.,Ltd.	TNK Factory (Series 1)	TNK Factory (Series 2)
Date of issue	May 4, 2018	April 9, 2019	April 9, 2019
Value at issue *(in millions of Korean won)*	₩ 7,000	₩ 16,152	₩ 2,598
Dividend rate for preferred shares	1% of issue value	1% of standard value	1% of standard value
Guaranteed yield upon redemption	8%	5%	5%
Conversion period	From the day after issuance date to the day before 10 years from issuance date	From the issuance date to the day of 5 years from issuance date	From the issuance date to the day of 5 years from issuance date
Conversion rate	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price b) anti-dilution	1 preferred share for 1 ordinary share : adjustable if (based on) a) anti-dilution
Redemption period	Redeemable from one year after issuance date	Redeemable during one year from four years after issuance date	Redeemable during one year from four years after issuance date

	Issuer[1]		
	stagefive Co., Ltd.	stagefive Co., Ltd.	INBYU
Date of issue	November 2, 2018	November 2, 2018	Febuary 25, 2019 / March 26, 2019
Value at issue *(in millions of Korean won)*	₩ 5,942	₩ 1,808	₩ 1,000
Dividend rate for preferred shares	1% of issue value	1% of standard value	0.1% of issue value
Guaranteed yield upon redemption	7%	3%	6%
Conversion period	From the day after issuance date to the day before 10 years from issuance date	From the issuance date to the day of 10 years from issuance date	From the issuance date to the day of 10 years from issuance date
Conversion rate	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price b) anti-dilution	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price b) anti-dilution	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price
Redemption period	Redeemable from three year after issuance date	Redeemable from three year after issuance date	Redeemable from three year after issuance date

[1] As at December 31, 2019, conversion rights and early redemption rights in relation to the above redeemable convertible preferred shares meet the terms of separation of embedded derivatives and are considered as the one compound embedded derivatives, separate from the main contract, and derivative liabilities of ₩ 25,662 million are separately recognized.

Other than the above redeemable convertible preferred shares, KIWI PLUS and Kids Note Co., Ltd., subsidiaries, have issued six redeemable convertible preferred shares as at December 31, 2019 and they are recognized as ₩ 4,955 million of short-term and long-term borrowings.

Details of convertible preferred shares issued by subsidiaries as at December 31, 2018, are as follows:

	Issuer[1]	
	Kakao VX	Kakao VX
Date of issue	October 4, 2018	December 3, 2018
Number of shares issued	107,633	107,732
Value at issue *(in millions of Korean won)*	₩ 3,996	₩ 4,000
Conversion price adjustments	a) In the case of a paid-in capital increase at an issue price below the conversion price and others b) May be adjusted depending on IPO offering unit price	a) In the case of a paid-in capital increase at an issue price below the conversion price and others b) May be adjusted depending on IPO offering unit price
Conversion rate	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price
Conversion period	From the issuance date to the day of 10 years from issuance date	From the issuance date to the day of 10 years from issuance date

[1] As at December 31, 2019, conversion rights in relation to the above convertible preferred shares meet the terms of separation of embedded derivatives and are considered as the one compound embedded derivatives, separate from the main contract.

The Company has been provided the guarantee by two financial institutions including Korea Technology Finance Corporation in relation to the borrowings above (Note 38).

22. Net Defined Benefit Liabilities

Net defined benefit liabilities recognized in the consolidated statements of financial position as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Present value of funded defined benefit obligation	₩	142,558	₩	102,630
Fair value of plan assets		(139,003)		(99,808)
Liability in the consolidated statements of financial position	₩	3,555	₩	2,822

Changes in the defined benefit obligations for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		**2019**		**2018**
Beginning balance	₩	102,630	₩	85,720
Increase due to change in scope of consolidation		5,505		4,836
Current service cost		36,487		28,363
Interest cost		2,946		2,484
Remeasurement:				
Actuarial loss from change in demographic		2,420		556
Actuarial loss (gain) from change in financial		947		(2,701)
Actuarial loss from experience adjustments		5,399		4,912
Benefits paid		(13,779)		(21,542)
Others		2		4
Ending balance	₩	142,558	₩	102,630

Changes in the fair value of plan assets for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		**2019**		**2018**
Beginning balance	₩	99,808	₩	83,757
Increase due to change in scope of consolidation		205		2,793
Interest income		1,933		2,237
Contribution		48,976		29,542
Payments from plans		(11,129)		(17,755)
Remeasurement:				
Revenue from plan assets(excluding amounts included in interest income)		(791)		(769)
Others		-		3
Ending balance	₩	139,003	₩	99,808

The amounts recognized in the consolidated statements of comprehensive income for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		**2019**		**2018**
Current service cost	₩	36,487	₩	28,363
Net interest cost		1,013		246
	₩	37,500	₩	28,609

Total service cost from defined benefit plan amounting to ₩ 37,500 million and ₩ 28,609 million is included in operating expenses for the years ended December 31, 2019 and 2018,

respectively. In addition, total service cost from defined contribution plan was ₩ 2,217 million and ₩ 1,787 million for the years ended December 31, 2019 and 2018, respectively.

Principal assumptions on actuarial valuation as at December 31, 2019 and 2018 are as follows:

	2019	2018
Discount rate	2.1% ~ 3.5%	2.3% ~ 3.9%
Salary growth rate	2.5% ~ 7.5%	4.5% ~ 7.5%

The sensitivity analysis of the defined benefit obligations as at December 31, 2019 to changes in the weighted principal assumptions is:

		Effect on defined benefit obligations	
	Changes in principal assumption	Increase in principal assumption	Decrease in principal assumption
Discount rate	1%	3.3% decrease	11.8% increase
Salary growth rate	1%	11.6% increase	3.2% decrease

The Company is exposed to the most significant risk through changes in bond yields, which was used as a discount rate. A decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized on the consolidated statement of financial position.

Plan assets as at December 31, 2019 and 2018 consist of the following:

(in millions of Korean won)	2019	2018
Equity linked bond	₩ 12,448	₩ 17,967
Time deposits	38,990	20,381
Debt instruments	201	372
Financial instruments with fixed rate	65,179	46,472
Interest guarantee insurance	21,567	11,068
Others	618	3,548
	₩ 139,003	₩ 99,808

Expected contributions to post-employment benefit plans for the year ending December 31, 2020, are ₩ 43,039 million.

The weighted average duration of the defined benefit obligation is 4.1 ~ 12.7 years.

23. Other Long-term Employee Benefits Liabilities

Changes in other long-term employee benefits liabilities for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	**2019**	**2018**
Beginning balance	₩ 40,156	₩ 32,015
Increase due to change in scope of consolidation	36	150
Current service cost	13,049	10,354
Interest cost	787	837
Remeasurement of the benefit liabilities	(3,021)	3,056
Benefits paid	(7,415)	(6,256)
Ending balance	₩ 43,592	₩ 40,156

The amounts recognized on the consolidated statements of comprehensive income for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	**2019**	**2018**
Current service cost	₩ 13,049	₩ 10,354
Interest cost	787	837
Remeasurement of the benefit liabilities	(3,021)	(163)
	₩ 10,815	₩ 11,028

Principal assumptions on actuarial valuation in relation to other long-term employee benefits liabilities for the years ended December 31, 2019 and 2018 are as follows:

	2019	**2018**
Discount rate	1.8% ~ 2.8%	2.2% ~ 3.2%
Salary growth rate	4.0% ~ 7.5%	4.0% ~ 7.5%

24. Income Tax Expense and Deferred Tax

Income tax expense for the years ended December 31, 2019 and 2018 consists of:

(in millions of Korean won)	**2019**	**2018**
Current tax:		
Current tax on profit for the year	₩ 99,410	₩ 106,077
Adjustments due to changes in estimates related to prior years	1,846	(3,692)
	101,256	102,385
Deferred tax:		
Changes in temporary differences	(15,159)	(29,624)
Changes in accounting policies	-	(665)
Increase (decrease) in temporary differences due to change in scope of consolidation	(209)	(4,402)
Deferred tax charged or credited directly to equity	21,780	47,087
	6,412	12,396
Income tax expense	₩ 107,668	₩ 114,781

Reconciliation between actual income tax expense and amount computed by applying the statutory tax rate to profit before income tax for the years ended December 31, 2019 and 2018 follows:

(in millions of Korean won)	**2019**	**2018**
Profit (loss) before income tax	₩ (234,257)	₩ 130,670
Income tax expense computed at statutory tax rate	(56,690)	31,622
Adjustments:		
Non-taxable income	(4,003)	(1,874)
Non-deductible expenses	6,892	28,880
Changes in valuation allowance of deferred income tax asset	169,418	51,467
Adjustments due to changes in estimates related to prior years	1,846	(3,692)
Effects of the tax system for recirculation of corporate income	(7,999)	11,478
Tax credits	(1,795)	(3,099)
Income tax expense	₩ 107,668	₩ 114,781

Income tax effects related to components of other comprehensive income (expenses) for the years ended December 31, 2019 and 2018 are as follows:

	2019		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other comprehensive income (expense):			
Gain on valuation of equity instruments at fair value through other comprehensive income	₩ (702)	₩ 170	₩ (532)
Gain on valuation of debt instruments at fair value through other comprehensive income	-	-	-
Remeasurement of the net defined benefit liabilities	(8,511)	2,060	(6,452)
Share of other comprehensive income of associates	(4,679)	1,132	(3,547)
	₩ (13,893)	₩ 3,362	₩ (10,531)

	2018		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other comprehensive income (expense):			
Gain on valuation of equity instruments at fair value through other comprehensive income	₩ 9,064	₩ (2,193)	₩ 6,870
Gain on valuation of debt instruments at fair value through other comprehensive income	187	(45)	142
Remeasurement of the net defined benefit liabilities	(3,535)	856	(2,680)
Share of other comprehensive income of associates	(48)	12	(36)
	₩ 5,668	₩ (1,372)	₩ 4,296

The aggregate current and deferred tax relating to items that are reflected directly to equity for the years ended December 31, 2019 and 2018, is as follows:

	2019		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other reserves:			
Goodwill (investment in kind)	₩ 83,720	₩ (18,418)	₩ 65,302

	2018		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other reserves:			
Goodwill (investment in kind)	₩ 220,270	₩ (48,459)	₩ 171,811

Deferred tax assets (liabilities) recognized in the consolidated statements of financial position as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Deferred tax assets				
Deferred tax assets to be recovered after more than 12 months	₩	152,477	₩	119,614
Deferred tax assets to be recovered within 12 months		28,056		30,490
		180,533		150,104
Deferred tax liabilities				
Deferred tax liabilities to be settled after more than 12 months		(257,222)		(235,077)
Deferred tax liabilities to be settled within 12 months		(3,664)		(10,540)
		(260,886)		(245,617)
Deferred tax liabilities, net	₩	(80,353)	₩	(95,513)

The gross movement in the deferred tax assets (liabilities) for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		**2019**		**2018**
Beginning balance	₩	(95,513)	₩	(125,136)
Changes in accounting policies		-		(665)
Changes in scope of consolidation		(209)		(4,402)
Deferred income tax charged to profit or loss		(6,412)		(12,396)
Deferred income tax charged to other comprehensive income		3,362		(1,372)
Deferred income tax charged to other equity		18,418		48,459
Ending balance	₩	(80,353)	₩	(95,513)

Changes in deferred income tax assets and liabilities for the years ended December 31, 2019 and 2018 without taking into consideration the offsetting of balances within the same tax jurisdiction are as follows:

(in millions of Korean won)

	2019					
	Beginning balance	Changes in scope of consolidation	Profit or loss	Other comprehensive income	Other equity	Ending balance
Deferred tax liabilities						
Accrued revenue	₩ (2,074)	₩ -	₩ 1,629	₩ -	₩ -	₩ (446)
Property and equipment	(6,502)	-	(1,028)	-	-	(7,530)
Intangible assets	(168,760)	(209)	19,367	-	-	(149,602)
Non-trade receivables	(4,408)	-	4,408	-	-	-
Financial assets at fair value through profit or loss	(6,533)	-	(10,186)	-	-	(16,719)
Financial assets at fair value through other comprehensive income	(3,258)	-	-	(50)	-	(3,307)
Plan assets	(24,434)	-	1,699	-	-	(22,735)
Non-refundable tax	(8,466)	-	8,466	-	-	-
Derivative instruments	-	-	(3,219)	-	-	(3,219)
Lease	-	-	(28,106)	-	-	(28,106)
Investments in subsidiaries and associates	10,188	-	(20,028)	1,132	-	(8,707)
Others	(21,184)	-	669	-	-	(20,514)
	(235,429)	(209)	(26,331)	1,083	-	(260,886)
Deferred tax assets						
Property and equipment	3,055	-	(391)	-	-	2,663
Advances from customers	6,352	-	4,965	-	-	11,317
Intangible assets	3,451	-	(472)	-	-	2,979
Allowance for doubtful accounts	6,936	-	(2,404)	-	-	4,532
Other payables	14,945	-	(5,619)	-	-	9,325
Provisions	1,602	-	5,924	-	-	7,526
Government grants	171	-	(34)	-	-	137
Defined benefit liabilities	23,188	-	(1,838)	2,060	-	23,409
Other long-term employee benefits liabilities	15,447	-	1,297	-	-	16,745

(in millions of Korean won)

	2019					
	Beginning balance	Changes in scope of consolidation	Profit or loss	Other comprehensive income	Other equity	Ending balance
Financial assets at fair value through profit or loss	1,188	-	23	-	-	1,210
Financial assets at fair value through other comprehensive income	1,180	-	-	219	-	1,399
Derivative instruments	2,257	-	489	-	-	2,746
Lease	-	-	30,411	-	-	30,411
Goodwill	48,459	-	(9,692)	-	18,418	57,186
Others	11,686	-	(2,737)	-	-	8,949
	139,916	-	19,919	2,279	18,418	180,533
Deferred tax assets (liabilities), net	₩ (95,513)	₩ (209)	₩ (6,412)	₩ 3,362	₩ 18,418	₩ (80,353)

(in millions of Korean won)

	2018						
	Beginning balance	Changes in accounting policies	Changes in scope of consolidation	Profit or loss	Other comprehensive income	Other equity	Ending balance
Deferred tax liabilities							
Accrued revenue	₩ (614)	₩ -	₩ -	₩ (1,461)	₩ -	₩ -	₩ (2,074)
Property and equipment	(5,824)	-	-	(678)	-	-	(6,502)
Intangible assets	(154,345)	-	(3,370)	(11,045)	-	-	(168,760)
Non-trade receivables	(4,408)	-	-	-	-	-	(4,408)
Available-for-sale securities	(2,107)	2,107	-	-	-	-	-
Financial assets at fair value through profit or loss	-	(1,088)	-	(5,445)	-	-	(6,533)
Financial assets at fair value through other comprehensive income	-	(1,019)	(1,032)	-	(1,206)	-	(3,258)
Plan assets	(18,527)	-	-	(5,907)	-	-	(24,434)
Treasury shares	(85)	-	-	85	-	-	-
Tax system for recirculation of corporate income	(7,644)	-	-	(822)	-	-	(8,466)
Others	(12,421)	(665)	-	(8,098)	-	-	(21,184)

(in millions of Korean won)

	2018						
	Beginning balance	Changes in accounting policies	Changes in scope of consolidation	Profit or loss	Other comprehensive income	Other equity	Ending balance
	(205,973)	(665)	(4,402)	(33,371)	(1,206)	-	(245,617)
Deferred tax assets							
Property and equipment	3,103	-	-	(48)	-	-	3,055
Advances from customers	1,794	-	-	4,558	-	-	6,352
Intangible assets	1,910	-	-	1,541	-	-	3,451
Allowance for doubtful accounts	3,164	-	-	3,772	-	-	6,936
Investments in subsidiaries and associates	10,850	-	-	(674)	12	-	10,188
Other payables	11,072	-	-	3,872	-	-	14,945
Provisions	1,043	-	-	559	-	-	1,602
Government grants	52	-	-	119	-	-	171
Defined benefit liabilities	17,863	-	-	4,469	856	-	23,188
Other long-term employee benefits liabilities	6,988	-	-	8,460	-	-	15,447
Available-for-sale securities	4,575	(4,575)	-	-	-	-	-
Financial assets at fair value through profit or loss	-	2,363	-	(1,175)	-	-	1,188
Financial assets at fair value through other comprehensive income	-	2,212	-	-	(1,032)	-	1,180
Derivative instruments	5,854	-	-	(3,597)	-	-	2,257
Goodwill (investment in kind)	-	-	-	-	-	48,459	48,459
Others	12,567	-	-	(882)	-	-	11,686
	80,836	-	-	20,974	(165)	48,459	150,104
Deferred tax assets (liabilities), net	₩ (125,136)	₩ (665)	₩ (4,402)	₩ (12,396)	₩ (1,372)	₩ 48,459	₩ (95,513)

The Company did not recognize deferred income tax asset of ₩ 11,965 million as at December 31, 2019, related to the investments in subsidiaries and associates considering the possibility of realization. As at December 31, 2019, the deferred tax assets that have not been recognized for deductible temporary differences arising from subsidiaries' net loss carryforwards amount to ₩ 58,740 million.

25. Provisions

Changes in provisions for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	2019				
	Beginning balance	**Changes in scope of consolidation**	**Increase**	**Decrease**	**Ending balance**
Current					
Provision for mileage	₩ 406	₩ -	₩ 711	₩ (530)	₩ 587
Provision for restoration	73	-	53	(73)	53
Provision for returns	1,571	-	(657)	(133)	781
Provision for litigation[1]	-	-	2,649	-	2,649
Other provisions	1,586	-	1,632	(207)	3,011
	3,636	-	4,388	(943)	7,081
Non-current					
Provision for restoration	7,611	(100)	7,362	(28)	14,844
	₩ 11,246	₩ (100)	₩ 11,750	₩ (972)	₩ 21,924

[1] Kakao VX, a subsidiary, was sued for patent infringement in May 2016, and completed the first trial by the Seoul Central District Court in September 2019. Based on the judgment, the Company recognized indemnification payable of ₩ 2,649 million as a provision for litigation.

(in millions of Korean won)	2018				
	Beginning balance	**Changes in scope of consolidation**	**Increase**	**Decrease**	**Ending balance**
Current					
Provision for mileage	₩ 151	₩ -	₩ 722	₩ (467)	₩ 406
Provision for restoration	-	73	-	-	73
Provision for returns	1,783	93	441	(746)	1,571
Other provisions	-	107	3,916	(2,437)	1,586
Non-current					
Provision for restoration	4,211	138	3,261	-	7,611
	₩ 6,145	₩ 412	₩ 8,339	₩ (3,650)	₩ 11,246

26. Derivative Financial Instruments

The carrying amounts of derivative financial assets, liabilities and commitments as at December 31, 2019 and 2018, are as follows:

(a) Derivative financial assets

(in millions of Korean won)		2019		2018
Call option (Tide Square Co., Ltd.)	₩	894	₩	-
Option (KakaoBank of Korea Corp.)		-		957
Others		217		217
	₩	1,112	₩	1,174

(b) Derivative financial liabilities

(in millions of Korean won)		2019		2018
Conversion right (Kakao VX)[1]	₩	6,876	₩	7,601
Redemption right and conversion right (Friendsgames Co., Ltd.)[2]		7,537		6,315
Redemption right and conversion right (TNK Factory)[3]		3,877		-
Put option (NeoBazar Inc.)		24		-
Redemption right and conversion right ((stagefive Co., Ltd. (formerly,Pinplay))[4]		7,347		-
	₩	25,662	₩	13,916

[1] Conversion right granted to Kakao VX (Note 21).

[2] Redemption right and conversion right granted to Friendsgames Co.,Ltd. (Note 21).

[3] Redemption right and conversion right granted to TNK Factory (Note 21).

[4] Redemption right and conversion right granted to stagefive Co., Ltd. (formerly,Pinplay) (Note 21).

27. Share Capital and Share Premium

As at December 31, 2019, the Parent Company's total number of authorized shares is 150 million and the total number of issued and outstanding ordinary shares are 86,322,636 and 86,222,636, respectively.

The Parent Company may grant stock options to its employees and directors of the Parent Company and its affiliates who contribute or have capabilities to contribute to the establishment, management, overseas business and technical innovation of the Company, with the resolution of special shareholders meeting or board of directors up to 15% of total number of issued stocks. As at December 31, 2019, the number of outstanding stock options among granted is 1,960,405 shares (Note 28).

The Parent Company is authorized to issue convertible bonds and bonds with warrants into registered ordinary shares for up to the total par value of ₩ 500 billion to investors other than current shareholders, with the resolution of the board of directors. As at December 31, 2019, the Parent Company has issued convertible bonds amounting to ₩ 208,400 million (Note 21).

The Parent Company may issue various classes of shares which are different in respect of their particulars as to the dividend, voting rights, conversion and redemption rights up to 50% of the total number of shares issued. The Parent Company has only issued ordinary shares and no other classes having the above conditions as at December 31, 2019.

Changes in share capital and additional paid-in capital during the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won, except number of shares)	Description	Number of ordinary shares	Share capital	Additional paid-in capital	Total
At January 1, 2018	Beginning balance	68,008,527	₩ 34,004	₩ 3,046,516	₩ 3,080,520
At January 11, 2018	Exercise of stock options	52,832	26	445	472
At January 24, 2018	Issuance of global depository receipt (GDR)	8,261,731	4,131	1,046,772	1,050,902
At January 31, 2018	Exercise of conversion right	25,255	13	2,976	2,989
At February 12, 2018	Exercise of stock options	21,677	11	189	200
At March 5, 2018	Exercise of stock options	3,500	2	5	7
At April 12, 2018	Exercise of stock options	6,600	3	140	143
At May 8, 2018	Exercise of stock options	5,500	3	155	158
At July 6, 2018	Exercise of stock options	500	-	6	6
At August 13, 2018	Exercise of stock options	5,667	3	77	80
At September 3, 2018	Issuance of new shares[1]	7,092,884	3,546	883,064	886,611
At September 11, 2018	Exercise of stock options	1,000	1	8	8
At October 11, 2018	Exercise of stock options	600	-	4	4
At November 9, 2018	Exercise of stock options	1,500	1	24	25
At December 31, 2018	Ending balance	83,487,773	₩ 41,744	₩ 4,980,381	₩ 5,022,125
At January 1, 2019	Beginning balance	83,487,773	₩ 41,744	₩ 4,980,381	₩ 5,022,125
At March 22, 2019	Exercise of stock options	10,100	5	1,009	1,014
At April 22, 2019	Exercise of stock options	4,000	2	399	401
At May 23, 2019	Exercise of stock options	40,500	20	3,837	3,857
At June 21, 2019	Exercise of stock options	16,400	8	1,571	1,580

(in millions of Korean won, except number of shares) Description		Number of ordinary shares	Share capital	Additional paid-in capital	Total
At July 2, 2019	Exercise of conversion right	16,837	8	1,988	1,996
At July 17, 2019	Exercise of conversion right	8,418	4	994	998
At July 22, 2019	Exercise of conversion right	42,092	21	4,970	4,991
At July 19, 2019	Exercise of stock options	49,488	25	3,320	3,344
At August 2, 2019	Exercise of conversion right	126,277	63	14,907	14,970
At August 13, 2019	Exercise of conversion right	8,418	4	994	998
At August 19, 2019	Exercise of stock options	92,410	46	8,698	8,744
At September 5, 2019	Exercise of conversion right	1,683	1	193	194
At September 20, 2019	Exercise of stock options	65,550	33	6,399	6,432
At October 14, 2019	Exercise of conversion right	8,418	4	994	998
At October 22, 2019	Exercise of stock options	18,305	9	1,715	1,724
At November 6, 2019	Third party capital increase	2,177,401	1,089	298,847	299,936
At November 7, 2019	Exercise of conversion right	3,367	2	398	399
At November 15, 2019	Exercise of conversion right	16,837	8	1,989	1,997
At November 22, 2019	Exercise of conversion right	42,092	21	4,969	4,990
At November 25, 2019	Exercise of stock options	77,360	39	7,056	7,095
At December 23, 2019	Exercise of stock options	8,910	4	786	790
At December 31, 2019	Ending balance	86,322,636	₩ 43,161	₩ 5,346,415	₩ 5,389,576

The Parent Company retired its treasury shares of 100,000 shares by appropriating retained earnings. Therefore, the total par value of capital stocks issued differs from the total par value of capital stocks outstanding.

(In millions of Korean won, except for number of shares and par value)

Capital stocks outstanding				
Stocks issued	Par value (in Korean won)	Total par value	Share capital	Difference
86,222,636	₩ 500	₩ 43,111	₩ 43,161	₩ 50

In 2018, the Parent Company merged with Kakao M Corp. and issued new 4,228,304 shares for some shares owned by the Parent Company and treasury shares held by Kakao M Corp. and, as a result, treasury shares of the Company increased from 5,188 shares to 4,233,492 shares. As at December 31, 2019, the number of treasury shares of the Parent Company did not change compared to the previous period.

28. Share-based compensation

Details of the Parent Company's stock options as at December 31, 2019, are as follows:

(a) Equity-settled stock option

- Type of shares issued through exercise of stock option: registered ordinary shares
- Grant method: Issuance of new ordinary shares
- Vesting period:
  10th, 12th, 14th, 16th tranches : The requisite service period is two years, exercisable from two to seven years after grant date.
  9th, 11th, 13th tranches: The requisite service period is two or three years, exercisable from two or three years to seven or eight years after grant date.

(b) Cash-settled stock option

- Vesting period:
  3nd – 5th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date.
  6th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price.
  7th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date.
  8th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price.

(c) Share-based payment transactions with cash alternatives

- Grant method: Issuance of new ordinary shares, treasury shares or payment of cash.
  The Company will determine in its discretion grant method at the time of exercise and accounted as equity-settled stock option based on the assumption that it will be granted based on the issuance of new stock or grant of treasury shares in the future.
- Vesting period:
  18th, 21th-22th, 24th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date.
  19th-20th, 23th, 25th-26th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.
  27th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.
  28th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 30% of granted quantity. The requisite service period of remaining 30% of granted quantity is three years, exercisable from three years to seven years after grant date. The requisite service period of remaining 40% of granted quantity is four years, exercisable from four years to seven years after grant date.

Details of the Parent Company's equity-settled stock options outstanding as at December 31, 2019, are as follows:

Tranche	Grant date	Exercise price (in Korean won)	Number of shares					
			Outstanding as at January 1, 2019	Granted	Forfeited	Exercised	Outstanding as at December 31, 2019	Exercisable as at December 31, 2019
9th	January 20, 2012	₩ 7,714	10,000	-	-	10,000	-	-
10th	March 30, 2012	10,285	2,000	-	2,000	-	-	-
11th	March 30, 2012	10,285	500	-	-	500	-	-
12th	August 31, 2012	12,857	6,054	-	-	6,054	-	-
13th	August 31, 2012	12,857	2,000	-	-	1,000	1,000	1,000
14th	December 14, 2012	12,857	11,432	-	-	11,432	-	-
16th	March 28, 2013	32,143	19,942	-	-	8,777	11,165	11,165
18th	March 2, 2017	85,350	302,500	-	4,000	228,950	69,550	34,775
19th	March 2, 2017	85,350	506,000	-	20,000	77,100	408,900	204,450
20th	March 17, 2017	84,650	100,000	-	-	36,460	63,540	31,770
21st	May 2, 2017	88,600	297,000	-	28,000	2,750	266,250	133,125
22nd	September 28, 2017	131,500	43,000	-	4,000	-	39,000	19,500
23rd	September 28, 2017	131,500	15,000	-	-	-	15,000	-
24th	August 31, 2018	123,380	311,000	-	40,000	-	271,000	-
25th	August 31, 2018	123,380	190,000	-	-	-	190,000	-
26th	October 31, 2018	100,580	120,000	-	-	-	120,000	-
27th	May 16, 2019	124,400	-	135,000	10,000	-	125,000	-
28th	May 16, 2019	124,400	-	392,000	12,000	-	380,000	-
			1,936,428	527,000	120,000	383,023	1,960,405	435,785

In addition to the aforementioned stock options, the Company granted equity-settled stock options in relation to the shares of its subsidiaries such as Kakao Page Corp., Kakao Games Corp., TNK Factory, Kakao Investment Co., Ltd., Kakao Mobility Corp, Kakao M Corp., Kakao Commerce Corp., KIWI PLUS, kidsnote, inc, and Kakaopay Corp.

Compensation costs of the Parent Company's equity-settled stock options are calculated by applying a fair value approach using Black-Scholes model, Binomial model and LSMC (Least Square Monte-Carlo) model. The related assumptions are as follows:

Tranche	Fair value of option at grant date (in Korean won)	Stock price at grant date (in Korean won)	Expected volatility[1]	Expected dividends	Expected maturity	Risk free Interest rate
9th	₩ 3,981	₩ 12,000	44%	0%	3 years	3.40%
10th	3,984	16,000	40%	0%	2 years	3.52%
11th	5,055	16,000	41%	0%	3 years	3.55%
12th	4,991	20,000	41%	0%	2 years	2.77%
13th	6,090	20,000	40%	0%	3 years	2.76%
14th	5,188	20,000	43%	0%	2 years	2.86%
16th	12,719	50,000	42%	0%	2 years	2.46%
18th	15,086	85,300	11%	0%	2~3 years	2.14%
19th	8,696	85,300	11%	0.17%	2~3 years	2.14%
20th	7,931	84,000	11%	0.17%	2~3 years	2.09%
21st	19,153	92,600	11%	0.16%	2~3 years	2.13%
22nd	30,997	139,500	11%	0.11%	2~3 years	2.30%
23rd	4,631	139,500	11%	0.11%	2~3 years	2.30%
24th	27,259	125,000	14%	0.12%	2~3 years	2.25%
25th	5,289	125,000	14%	0.12%	2~3 years	2.25%
26th	14,052	91,600	13%	0.00%	2~3 years	2.18%
27th	10,745	133,500	12%	0.00%	2~4 years	1.80%
28th	29,998	133,500	12%	0.00%	2~4 years	1.80%

[1] The volatility measured at the standard deviation of continuously compounded share returns for 1st - 17th tranches granted prior to the Parent Company's listing in Korean stock market is based on statistical analysis of weekly share prices of listed corporations in the similar line of industry over expected maturity period.

Details of the Parent Company's cash-settled stock options outstanding as at December 31, 2019, are as follows:

(In Korean won, except number of shares)

			Number of shares					
Tranche	Grant date	Exercise price	Outstanding as at January 1, 2019	Granted	Cancelled	Exercised	Outstanding as at December 31, 2019	Exercisable as at December 31, 2019
3rd	May 2, 2017	₩ 88,600	7,000	-	500	-	6,500	3,250
4th	September 28, 2017	131,500	500	-	-	-	500	250
5th	August 31, 2018	123,380	5,000	-	-	-	5,000	-
6th	August 31, 2018	123,380	14,500	-	-	-	14,500	-
7th	May 16, 2019	124,400	-	3,000	-	-	3,000	-
8th	May 16, 2019	124,400	-	10,000	-	-	10,000	-
			27,000	13,000	500	-	39,500	3,500

In addition to the aforementioned stock options, the Company granted cash-settled stock options on shares of Kakaopay Corp. and Kakao Games Corp., its subsidiaries.

The fair value of the Company's cash-settled stock options was determined using LSMC (Least Square Monte-Carlo) option pricing model.

Share-based compensation recognized as expenses for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		**2019**		**2018**
Equity-settled stock option[1]	₩	21,444	₩	12,172
Cash-settled stock option[2]		(740)		1,970
	₩	20,704	₩	14,142

[1] Amounts for 2019 include ₩ 11,083 million (2018: ₩ 4,189 million) of share-based compensation recognized as expenses for the shares of subsidiaries.
[2] Amounts for 2019 include ₩ (1,440) million (2018: ₩ 1,962 million) of share-based compensation recognized as expenses for the shares of subsidiaries.

29. Other Components of Equity

Other components of equity as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Other capital adjustments	₩	(5,430)	₩	(5,430)
Treasury shares		(1,034)		(1,034)
Losses on disposal of treasury shares		(5,941)		(5,941)
Stock options		19,643		13,897
	₩	7,238	₩	1,492

As at December 31, 2019, the Parent Company holds 4,233,492 shares of treasury shares in the amount of ₩ 1,034 million recognized as other components of equity.

30. Accumulated Other Comprehensive Income

Accumulated other comprehensive income as at December 31, 2019 and 2018, consists of:

(in millions of Korean won)		**2019**		**2018**
Translation adjustments, net of tax	₩	6,637	₩	1,228
Shares of other comprehensive income (loss) of associates, net of tax		(3,810)		(210)
Equity instruments at fair value through accumulated other comprehensive income, net of tax		(9,283)		(3,690)
Remeasurement of defined benefit obligation, net of tax		(10,463)		(4,961)
Revaluation surplus		526		304
	₩	(16,393)	₩	(7,329)

Changes in accumulated other comprehensive income for the year ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**January 1, 2019**	**Increase (Decrease)**	**Reclassification to retained earnings**	**December 31, 2019**
Translation adjustments, net of tax	₩ 1,228	₩ 5,409	₩ -	₩ 6,637
Shares of other comprehensive income (loss) of associates, net of tax	(210)	(3,600)	-	(3,810)
Equity instruments at fair value through accumulated other comprehensive income, net of tax	(3,690)	217	(5,809)	(9,283)
Remeasurement of defined benefit obligation, net of tax	(4,961)	(5,502)	-	(10,463)
Revaluation surplus	304	222	-	526
	₩ (7,329)	₩ (3,255)	₩ (5,809)	₩ (16,393)

Other comprehensive income in the table above represent amount net of tax.

(in millions of Korean won)	**January 1, 2018**	**Changes in accounting policies**	**Increase (Decrease)**	**December 31, 2018**
Gain on valuation of available-for-sale securities, net of tax	₩ 591	₩ (591)	₩ -	₩ -
Translation adjustments, net of tax	(2,585)	-	3,813	1,228
Shares of other comprehensive income (loss) of associates, net of tax	(174)	-	(36)	(210)
Equity instruments at fair value through accumulated other comprehensive income, net of tax	-	(8,551)	4,861	(3,690)
Debt instruments at fair value through accumulated other comprehensive income	-	(142)	142	-
Equity instruments at fair value through Profit or loss	-	-	-	-
Remeasurement of defined benefit obligation, net of tax	(2,800)	-	(2,161)	(4,961)
Revaluation surplus	-	-	304	304
	₩ (4,968)	₩ (9,283)	₩ 6,922	₩ (7,329)

Other comprehensive income in the table above represent amount net of tax.

31. Retained Earnings

Retained earnings as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Legal reserve[1]	₩	8,432	₩	7,427
Retained earnings before appropriation		139,722		445,973
	₩	148,154	₩	453,400

[1] The Commercial Code of the Republic of Korea requires the Parent Company to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to reduce accumulated deficit.

32. Operating Expenses

Operating expenses for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		2019		2018
Salaries	₩	538,486	₩	420,326
Retirement benefit expense		39,717		30,396
Compensation cost of share-based payments		20,704		14,142
Welfare		88,776		66,997
Travel and transportation expense		12,106		8,522
Taxes and dues		6,667		4,786
Rental expense		9,363		37,390
Commission		360,117		314,379
Sales-related expenses		1,079,324		873,754
Cost of goods sold		288,646		205,734
Advertising expense		146,176		183,827
Depreciation		139,125		67,650
Amortization		79,679		67,379
Expenses for events		5,073		3,487
Others		47,556		42,189
	₩	2,861,514	₩	2,340,959

33. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		2019		2018
Other non-operating income				
Gain on disposal of property and equipment	₩	2,688	₩	584
Gain on disposal of intangible assets		7,882		1,904
Gain on disposal of investment property		-		178
Gain on disposal of equity method investments		50,973		38,650
Gain on disposal of investments in subsidiaries		612		14,746
Gain on foreign currency transactions		1,523		2,398
Gain on foreign currency translation		861		123
Miscellaneous income		7,796		15,436
Rent income		293		10
Gain on disposal of other assets		-		295
Reversal of allowance for doubtful accounts (non-operating income)		62		204
Reversal of impairment loss on intangible assets		341		-
Gains on bargain purchase		694		-
Reversal of provision for restoration		28		-
Others		-		3
	₩	73,755	₩	74,531
Other non-operating expenses				
Loss on disposal of property and equipment	₩	1,245	₩	355
Loss on disposal of intangible assets		1,836		324
Loss on abandonment of property and equipment		578		623
Impairment losses on property and equipment		57		-
Impairment losses on intangible assets		440,323		8,320
Impairment losses on other assets		1,378		2,871
Impairment losses on equity method investments		25,876		36,747
Loss on disposal of equity method investments		4,678		2,165
Loss on disposal of investments in subsidiaries		32		565
Donations		4,651		6,493
Service fees		5,188		5,978
Loss on foreign currency transactions		1,804		1,607
Loss on foreign currency translation		924		81
Miscellaneous losses		28,004		15,831
Other Impairment loss on trade receivables		2,073		3,761
Loss on disposal of trade receivables		3		-
Others		2,763		50
	₩	521,412	₩	85,772

34. Finance Income and Costs

Finance income and costs for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)		2019		2018
Finance income				
Interest income	₩	31,700	₩	41,783
Dividend income		1,287		381
Gain on valuation of derivatives		5,625		988
Gain on valuation of financial assets at fair value through profit or loss		11,489		23,830
Gain on disposal of financial assets at fair value through profit or loss		566		7,443
Gain on foreign currency transactions		5,102		15,138
Gain on foreign currency translation		14,616		16,645
Other finance income		-		6,245
	₩	70,386	₩	112,453
Finance costs				
Interest expense	₩	12,808	₩	9,356
Loss on valuation of derivative financial instruments		7,671		732
Loss on foreign currency transactions		2,116		2,502
Loss on foreign currency translation		4,021		7,690
Loss on valuation of financial assets at fair value through profit or loss		14,990		23,602
Loss on disposal of financial assets at fair value through profit or loss		328		269
Loss on disposal of financial assets at fair value through other comprehensive income		-		272
Other finance costs		2,068		5,720
	₩	44,000	₩	50,143

35. Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to equity holders of the Parent Company by the weighted average number of ordinary shares outstanding, excluding the treasury shares during the year.

Basic earnings per share for the years ended December 31, 2019 and 2018 is calculated as follows:

(in millions of Korean won, except per share data)	2019	2018
Profit (loss) attributable to equity holders of the Parent Company	₩ (301,003)	₩ 47,886
Weighted average number of ordinary shares outstanding	79,715,891	76,863,184
Basic earnings (loss) per share	₩ (3,776)	₩ 623

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. The Company has stock options, exchangeable bonds and convertible bonds as dilutive potential ordinary shares. For the share options, a calculation is done to determine the number of shares that could have been acquired at fair value (determined as the average annual market share price of the Company's shares) based on the monetary value of the subscription rights attached to outstanding share options. The number of shares calculated as above is compared with the number of shares that would have been issued assuming the share options are exercised. The convertible bond and exchangeable bond are assumed to have been converted into ordinary shares, and the net profit is adjusted to eliminate the interest expense less the tax effect.

Diluted earnings per share for the years ended December 31, 2019 and 2018, is calculated as follows:

(in millions of Korean won, except per share data)	**2019**	**2018**
Profit (loss) attributable to equity holders of the Parent Company	₩ (301,003)	₩ 47,886
Interest cost for convertible bonds (net of tax)	-	1,788
	(301,003)	49,673
Weighted average number of ordinary shares outstanding	79,715,891	76,863,184
Adjustment for:		
Stock options	-	193,396
Convertible bonds	-	3,820,325
Weighted average number of diluted potential ordinary shares	-	4,013,721
Weighted average number of ordinary shares for diluted earnings per share	79,715,891	80,876,905
Diluted earnings (loss) per share	₩ (3,776)	₩ 614

Details of the potential ordinary share that may have a dilution effect in the future although it was not considered when calculating the diluted earnings per share due to the anti-dilution effect as at December 31, 2019, is as follows:

(in millions of Korean won, except per share data)	**Interest expense, net of tax**	**Number of ordinary shares to be issued**
Convertible bonds and exchangeable bonds	₩ 661	3,548,171
Stock option	-	352,125

36. Dividends

Dividends paid by the Parent Company for the years ended December 31, 2019 and 2018, are ₩ 10,053 million (₩ 127 per share) and ₩ 10,050 million (₩ 148 per share), respectively.

The dividend to the shareholders of the Parent Company in respect of the year ended December 31, 2019, of ₩ 127 per share, amounting to total dividends of ₩ 10,413 million, is to be proposed at the annual general shareholders' meeting on March 25, 2020. The Company's consolidated financial statements as at December 31, 2019, do not reflect this dividend payable.

37. Cash Generated from Operations

Details of cash generated from operations for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	**2019**	**2018**
Profit (loss) before income tax	₩ (234,257)	₩ 130,670
Adjustments :		
Impairment loss on trade receivables	1,811	3,084
Depreciation	139,125	67,650
Amortization	79,679	67,379
Impairment losses on intangible assets	439,982	8,320
Gain on disposal of property and equipment	(1,443)	(229)
Loss on abandonment of property and equipment	578	623
Gain (loss) on disposal of intangible assets	(6,046)	(1,580)
Retirement benefit expense	37,500	28,609
Compensation cost of share-based payments	20,704	14,142
Interest income	(31,700)	(41,783)
Interest expense	12,808	9,356
Dividend income	(1,287)	(381)
Share of net loss (profit) of associates	19,771	(6,652)
Loss on disposal of equity method investments	-	2,165
Gain on disposal of equity method investments	(50,973)	(38,650)
Impairment losses on equity method investments	25,876	36,747
Gain on disposal of financial assets at fair value through profit or loss	(566)	(7,443)
Loss on disposal of financial assets at fair value through profit or loss	328	269
Gain on valuation of financial assets at fair value through profit or loss	(11,489)	(23,830)
Loss on valuation of financial assets at fair value through profit or loss	14,990	23,602
Loss on disposal of financial assets at fair value through other comprehensive income	-	272
Impairment losses on other assets	1,378	2,871
Gain on valuation of derivative financial instruments	(5,625)	(988)
Loss on valuation of derivative financial instruments	7,671	732
Other Impairment loss on trade receivables	2,073	3,761
Others	(580)	-
Changes in operating assets and liabilities		
Trade receivables	39,192	(1,482)

(in millions of Korean won)	**2019**	**2018**
Inventories	(19,188)	(8,951)
Other current financial assets	(40,544)	(63,994)
Other current assets	24,541	(91,627)
Other non-current assets	(43,181)	(6,758)
Trade payables and other payables	100,465	154,417
Other current liabilities	132,779	393,992
Other current financial liabilities and deposits received	205,815	(782)
Other non-current liabilities	8,916	882
Other non-current financial liabilities	16,892	(2,441)
Net defined benefit liabilities	(51,627)	(33,329)
Other long-term employee benefit liabilities	(1,656)	(2,887)
Other provisions	-	882
Others	(1,566)	(8,605)
Cash generated from operations	₩ 831,143	₩ 608,033

Significant transactions not affecting cash flows for the years ended December 31, 2019 and 2018 are as follows:

(in millions of Korean won)	**2019**	**2018**
Provision for restoration to specific property and equipment account	₩ 5,117	₩ 2,258
Write-offs of trade receivables	1,650	336
Change of other payables related to acquisition of property and equipment	6,655	5,628
Change of non-trade receivables related to disposal of property and equipment	179	-
Change of other payables related to acquisition of intangible assets	515	540
Change of advanced payments related to acquisition of intangible assets	4,336	8,636
Change of deferred revenues related to disposal of intangible assets	-	10,325
Transfer from advanced payments and long-term advanced payments to property and equipment	3,794	-
Transfer from advanced payments and long-term advanced payments to intangible assets	4,300	-
Conversion of convertible bonds	32,600	2,990
Conversion of redeemable convertible preferred shares	-	4,456
Transfer to current portion of long-term borrowings	1,054	575,931
Increase in right-of-use assets due to changes in accounting policies	198,775	-
Increase in lease liabilities due to changes in accounting policies	199,792	-
Change of non-trade receivables related to payment of lease liabilities	8,800	-
Transfer from financial assets at fair value through other comprehensive income to investments in associates	243,105	1,977

Changes in net liabilities arising from financial activities for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	Other assets		Liabilities from financing activities				
	Cash and cash equivalents	Short-term financial assets	Short-term borrowings	Long-term borrowings	Current lease liabilities	Non-current lease liabilities	Total
At December 31, 2018	₩ 1,247,013	₩ 924,215	₩ (609,480)	₩ (44,995)	₩ -	₩ -	₩ 1,516,753
Changes in accounting policies	-	-	-	-	(42,514)	(156,261)	(198,775)
At January 1, 2019	1,247,013	924,215	(609,480)	(44,995)	(42,514)	(156,261)	1,317,978
Acquisition - lease	-	-	-	-	(4,044)	(82,187)	(86,231)
Cash flows	799,132	(593,555)	128,208	(36,919)	43,045	-	339,911
Exchange differences	10,528	(194)	(142)	(79)	-	-	10,112
Changes in consolidation scope	(138,448)	1,194	(4,128)	(3,246)	(340)	-	(144,967)
Transfer from/to current portion	-	-	(1,054)	1,054	(73,459)	73,459	-
Unwind of discount	-	-	(956)	(196)	-	-	(1,151)
Transfer	-	(124,322)	-	12,229	8,800	-	(103,293)
Conversion of convertible bond	-	-	32,600	-	-	-	32,600
Others	-	429	6,357	(117)	435	-	7,104
At December 31, 2019	₩ 1,918,225	₩ 207,767	₩ (448,596)	₩ (72,269)	₩ (68,077)	₩ (164,989)	₩ 1,372,062

(in millions of Korean won)	Other assets		Liabilities from financing activities		
	Cash and cash equivalents	Short-term financial assets	Short-term borrowings	Long-term borrowings	Total
At January 1, 2018	₩ 1,116,793	₩ 394,152	₩ (174,372)	₩ (620,808)	₩ 715,765
Cash flows	9,747	514,098	139,350	(3,229)	659,966
Exchange differences	30,483	8,305	(2)	-	38,786
Changes in consolidation scope	89,990	7,661	(5,309)	(7,838)	84,503
Transfer from/to current portion	-	-	(575,931)	575,931	-
Unwind of discount	-	-	(1,788)	(312)	(2,100)
Others (conversion of convertible bond, etc.)	-	-	8,572	11,261	19,833
At December 31, 2018	₩ 1,247,013	₩ 924,215	₩ (609,480)	₩ (44,995)	₩ 1,516,753

38. Commitments and Contingencies

The Company provided the following guarantees as at December 31, 2019 and 2018:

(*in millions of Korean won)*

Beneficiary	Guarantor	Amount		Guaranteed item
		2019	2018	
Employees[1]	Woori Bank	₩ 245	₩ 292	Employee loans
Customers[2]	Korea Investment Savings Bank, etc.	15,151	4,922	Guarantee for installment sales
Credit guarantee	Intercontinental Hongkong, etc.	-	1,144	Credit guarantee for LC
Housing loans to employees[3]	Executives of associates	440	-	Housing loans to employees
		₩ 15,836	₩ 6,358	

[1] The Company provided its employees payment guarantee with banks for the employees' bank loans related to their welfare and the Company's deposits of ₩ 6,191 million are pledged as collateral.
[2] Debt guarantee provided for the customer's installment amount for financial institutions among the purchase amount. In relation to such debt guarantee, one promissory note (₩ 300 million) and financial instruments of ₩ 100 million of the Company are provided as collateral.
[3] Financial instruments of ₩ 425 million of the Company are provided as collateral in relation to guarantees for housing loans to employees.

The Company was provided the following guarantees by others as at December 31, 2019 and 2018:

(in millions of Korean won)

Guarantor	Details	Amount		Beneficiary
		2019	2018	
Seoul Guarantee Insurance and others	Performance guarantee and others	₩ 128,369	₩ 7,919	Korea Workers' Compensation & Welfare Service, Korea Electric Power Corporation, etc.
Korea Credit Guarantee Fund	Guarantee for borrowings and others	2,410	2,393	Industrial Bank of Korea, etc.
Shinhan Bank	Consumer protection under Act on Electronic Commerce	500	-	Customers
TRAVIX TRAVEL USA INC	Performance guarantee	-	112	Customers
		₩ 131,279	₩ 10,424	

In addition to the above, the Company has been received a payment guarantee from KB Kookmin Bank regarding the issuance of exchangeable bonds (Note 21).

As at December 31, 2019, the Company is involved in 21 lawsuits amounting to ₩ 20,898 million as a defendant or co-defendant. The Company does not expect that these cases would have a material impact on its consolidated financial statements.

The Company's agreements with financial institutions as at December 31, 2019 and 2018, are as follows:

(in millions of Korean won)

Financial Institution	Agreements	2019 Maximum limit	2019 Amount executed
Industrial Bank of Korea	General loans	₩ 100	₩ -
KEB Hana Bank	General loans	50	-
KEB Hana Bank	Trade receivable secured loan	1,000	-
KB Kookmin Bank	Purchasing loan	500	500
Industrial Bank of Korea	Purchasing loan	1,380	1,380
Shinhan Bank	Limit loans for operation capital	200,000	-
KB Kookmin Bank	Facility loans	7,800	7,800
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for operation capital	115	115
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for investments	1,365	1,365
Japan Finance Corporation	Loans for investments	16	16
Woori Bank	General borrowings	1,000	1,000
Shinhan Bank	General borrowings	1,500	1,500
Woori Bank	Retail Banking loans	700	699
KB Kookmin Bank	Loans for operation capital	200	200
Woori Bank	Loans for operation capital	100	100
Shinhan Bank	Limit loan	25,000	-
Korea Development Bank	Limit loan	40,000	-
KB Kookmin Bank	Limit loan	22,000	-
		₩ 302,825	₩ 14,674

(in millions of Korean won)

Financial Institution	Agreements	2018 Maximum limit	2018 Amount executed
Industrial Bank of Korea	Loans for operation capital	₩ 2,000	₩ -
Industrial Bank of Korea	Loans for operation capital	200	-
Woori Bank	Credit limit of borrowings	958	958
Shinhan Bank	Credit limit of borrowings	500	500
Woori Bank	General borrowings	5,000	5,000
KB CAPITAL	General borrowings	22	22
Shinhan Bank	General loans (limit)	2,500	-
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for operation capital	172	172
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for investments	1,401	1,401
Japan Finance Corporation.	Loans for investments	26	26
Orix	Loans for operation capital	157	157
Woori Bank	General borrowings	916	916

(in millions of Korean won)

Financial Institution	Agreements	2018 Maximum limit	2018 Amount executed
KB Kookmin Bank	General borrowings	20,000	20,000
Shinhan Bank	General borrowings	770	770
Shinhan Bank	Loans for operation capital	50	50
Industrial Bank of Korea	Loans for operation capital	600	600
		₩ 35,273	₩ 30,573

In 2016, the Parent Company entered into a securities lending agreement with each of two underwriters of the exchangeable bonds, Citigroup Global Markets Limited and Morgan Stanley & Co. International plc for up to an aggregate 2,191,885 shares of exchange target shares, equivalent to 100% of the total exchangeable shares. According to the agreement, the shares will be lend up to the date specified such as the date of the fifth anniversary of the issuance of the bonds, the date on which all of the bonds are redeemed, or exchanged through the underwriters' agent, NH Investment & Securities Co., Ltd. However, shares subject to the agreement became treasury shares of the Parent Company due to the merge with Kakao M Corp. in 2018. As a result, the number of treasury shares subject to the agreement became 1,793,755 shares after the merger.

The Company granted a right to a customer for reselling equipment for screen golf to the Company at 50% of a price at which it sold to a customer after a certain period of time (selling price: ₩ 3,072 million).

In accordance with the shareholder agreements in relation to Kakaopay Corp., a subsidiary, the right to request Kakaopay Corp., to issue new shares for 9.9% to the extent that it does not affect the Company’s control is provided to non-controlling interest investors within three years after the initial investment. If a subsidiary issues new shares with the approval of the Board of Directors, non-controlling interest investors may take over those shares at $150,000,000. In addition, in accordance with the shareholder agreements, if there are difficulties in management and operation under the above agreements due to changes in governance structure, the non-controlling interest investors of the subsidiary may request the Parent to purchase those shares for a period of time in the agreements at fair value. The management of the Company believes that the Company can control prerequisites for investors to claim the purchase and therefore, as at December 31, 2019, the Company determines that there is no possibility for investors to claim the purchase.

In accordance with the agreements with non-controlling interests of certain subsidiaries including Kakao Page Corp., the Company is required to obtain a consent from investors, when the Company intends to dispose of the investments in subsidiaries within the period specified in the agreements through a transfer or other methods to third party other than stipulated manners in the agreements such as exercise of tag-along right (Note 1).

Financial instruments restricted as at December 31, 2019 and 2018:

(in millions of Korean won)

	2019	2018	Purpose of restriction
Short-term financial instruments	₩ 20,000	₩ 20,000	Withdrawal restriction in relation to firm banking[1]
	-	559	Related to legal procedure
	1,350	1,350	Pledged as collateral for Shinhan Card and etc.[2]
	5,466	9,286	Payment guarantee for employees' loan
	425	-	Pledged for housing loans to employees
	4,997	4,935	Payment guarantee for office lease
	1,700	1,150	Pledged as collateral for a franchise contract
	-	239,600	Pledged as collateral for overseas exchangeable bonds
	-	1,800	Performance guarantee
	-	1,000	Pledged as collateral for Shinhan Card
	100	250	Guarantee for instalment sales of a customer
	2	-	Deposit for checking account
Long-term financial instruments	300	500	Payment guarantee for employee's loan
	701	-	Payment guarantee for office lease
	10	-	Payment guarantee for vehicles lease
Investments in associates	-	42,000	Lock-up[3]
	₩ 35,052	₩ 322,431	

[1] The withdrawal is restricted in relation to the firm banking contract with DGB Daegu Bank.
[2] Pledged as collateral in relation to covering expected loss incurred to credit card companies about business cooperation agreements with Shinhan Card and other credit card companies for 'Automated Payment via Kakao Pay'.
[3] Lock-up of 10,421,421 ordinary shares for additional listing of UBCARE CO., LTD. was released during 2019.

The following assets are pledged as collateral in relation to guarantees for contract fulfilment and borrowings as at December 31, 2019:

(in millions of Korean won)

Asset	Book value	Collateralized amount	Type of Guarantee	Secured party
Promissory note	₩ -	₩ 300	Collateral for fulfillment of repurchase obligation	Daehan Savings Bank
Time deposits and installment deposits	100	100	Collateral for payment guarantees	ORIX Capital Korea Corporation
Time deposits and installment deposits	400	440	Collateral for housing loans to employees	Shinhan Bank
Buildings	677	150	Leasehold rights	Killing Mario
Land, buildings	7,794	4,800	Collateral for facility loans	KB Kookmin Bank
Land, buildings	2,843	3,360	Establishment of the right to collateral security for land and buildings	KB Kookmin Bank
	₩ 11,815	₩ 9,150		

Although short-term financial instruments of the Parent Company regarding the payment guarantee received from KB Kookmin Bank for the exchangeable bonds are provided as collateral until 2018, the collateral was changed to the stock return rights for treasury shares held by the Parent Company for the remaining shares subject to exchange during 2019 (Note 21).

The Company issued new shares through a capital increase by allotment to a third party to enter into a strategic partnership with SK TELECOM CO., LTD. during the year ended December 31, 2019. 2,177,401 new shares issued are subject to a deposit contract (prohibition of withdrawal or sale of relevant securities for one year from the deposit date) with the Korea Securities Depository and the Company executes the deposit contract.

As at December 31, 2019, other commitments of the Company are as follows:

(1) The Company holds shares owned by certain shareholders as collateral.

(2) In accordance with the agreements between shareholders of certain subsidiaries and associates including STARSHIP ENTERTAINMENT CORP., the Company is required to obtain written consent from interested parties and investors when the Company intends to dispose of all or part of investments in such subsidiaries or associates by transfer, sale, providing collateral, or other means before certain period or conditions are met.

(3) In accordance with the agreements between shareholders of STARSHIP ENTERTAINMENT CORP., a subsidiary, if the listing of STARSHIP ENTERTAINMENT CORP. is not completed within five years from the date of the capital increase of STARSHIP ENTERTAINMENT CORP. in December 2019, the investors who participated in the capital increase can request the Company to purchase shares of STARSHIP ENTERTAINMENT CORP. In relation to this, the Company recognized the amount to purchase the additional shares as liabilities.

(4) After lending money to subsidiary's CEO, the Company has pledged all of shares of moonlight film and Kakao M Corp. held by the CEO as collateral and has been comprehensively delegated the voting rights of moonlight film for three years.

(5) For the shares of EDAM Entertainment, an associate, held by other shareholders, the Company can request to sell the number of shares to hold 51% of the total shares issued on a complete dilution basis to the Company or a third party designated by the Company through a written notice within one year after two years from the signed date of shareholders agreements.

(6) SOOP ENTERTAINMENT CO., LTD a subsidiary of the company, has been sued by Fantagio Corp. for the non-existence of the extraordinary shareholders' meeting held in July 2016 and nullification/non-existence of the issuance of new shares. The Company's interests in the SOOP ENTERTAINMENT CO., LTD may change depending on the outcome of the above litigation.

(7) The Company has entered into an agreement between shareholders that grants put options in relation to equity investments of STARSHIP ENTERTAINMENT CORP. and Kakao Page Corp.,

subsidiaries of the Company, and recognized the amount as financial liabilities.

(8) The Company has entered into an agreement between shareholders that holds call options and grants put options in relation to equity investments of moonlight film, a subsidiary of the Company.

(9) As at December 31, 2019, in relation to the acquisition of shares of SamyangCNC Co.,Ltd., Daon Creative inc, Soundist Entertainment.Co.,Ltd., NeoBazar Inc. and RS MEDIA Co., Ltd., the Company has an obligation to purchase shares held by the other parties for a price agreed at a certain point or a specified price when the other party expresses its intention to sell some of the shares. The Company recognizes the amount as financial liabilities.

(10) As at December 31, 2019, the Company has entered into a payment agreement for production and development expenses related to drama production of two cultural industry specialty companies (Doctorbrain SPC Ltd., Dreamside SPC Ltd.) that have been invested in accordance with Framework Act on the Promotion of Cultural Industries. The final amount will be determined after being proposed to the SPC Steering Committee. Meanwhile, the expected net production cost for Doctorbrain SPC Ltd., is ₩ 10.5 billion, and the Company should raise funds by investing on the schedule agreed between the parties or by attracting third party investment.

(11) The Company has entered into contracts with 23 companies to sell and exchange cryptocurrency in relation to its subsidiary's cryptocurrency business ("Klaytn").

39. Business Combinations

In 2019, the Company acquired the shares of 14 companies including AWESOMEENT CO. LTD.., which became its subsidiaries. Details of the percentage of ownership acquired, the consideration paid and goodwill recognized thereto are as follow:

(in millions of Korean won) Company	Percentage of ownership acquired (%)	Consideration	Goodwill
AWESOMEENT CO. LTD..	100.0	₩ 10,000	₩ 6,255
Moonlight Film [3]	41.0	23,719	20,388
Sanai Pictures	81.0	18,630	16,943
VAST. CO., Ltd.	100.0	11,000	5,275
SHOWNOTE Inc.	100.0	26,767	16,516
Others[1,2]	52.5 ~ 100.0	37,886	25,185
		₩ 128,003	₩ 90,560

[1] Presented at a provisional amount for certain subsidiaries as purchase price allocation amount related to the business combination is not determined.

[2] Represent the consideration paid and goodwill of Soundist Entertainment.Co.,Ltd., RS MEDIA Co., Ltd., Mezondbaha Corp., KM Solution Corp., Jinhwa Corp., Donggo Taxi Corp., AWINS , INBYU and Partner Co.,Ltd., of which the Company acquired interests during 2019.

[3] In accordance with call option provision on shareholder agreements of moonlight film, the Company is considered to have additional 40% interests substantially, and considering this, the Company measured and accounted for the consideration.

Details of the consideration transferred, fair value of the acquired identifiable assets and liabilities at the acquisition date, and non-controlling interests in relation to business combinations in 2019, are as follows:

(in millions of Korean won)	**AWESOME ENT Co. Ltd.**	**moonlight Film**	**Sanai Pictures**	**VAST. CO., Ltd.**	**SHOWNOTE Inc.**	**Others**
Consideration transferred						
Cash and cash equivalents	₩ 10,000	₩ 8,200	₩ 18,630	₩ 11,000	₩ 26,767	₩ 37,886
Non-trade payables	-	15,519	-	-	-	-
Assets acquired and liabilities assumed						
Cash and cash equivalents	792	1,774	1,718	1,924	4,730	8,129
Trade receivables	173	20	1	230	1,144	1,615
Inventories	-	-	-	-	-	3,523
Property and equipment	1,049	5,844	124	558	1,681	2,391
Intangible assets	3,131	694	345	6,688	670	7,144
Other assets	6,878	1,658	572	3,256	6,337	4,741
Trade payables	(579)	(44)	(109)	(713)	(949)	(1,994)
Borrowings	-	-	-	-	-	(2,899)
Lease liabilities	-	-	-	-	-	(608)
Other liabilities	(7,698)	(5,834)	(568)	(6,218)	(3,361)	(7,671)
Net identifiable assets acquired	3,746	4,113	2,083	5,725	10,252	14,371
Non-controlling interest	-	(781)	(396)	-	-	(1,669)
Goodwill	₩ 6,255	₩ 20,388	₩ 16,943	₩ 5,275	₩ 16,516	₩ 25,185

In 2019, the Company took over the business of seven companies including Callmaner business of SN TECH CO., LTD. which became its subsidiaries. Details of the consideration transferred, fair value of the acquired identifiable assets and liabilities at the acquisition date, and non-controlling interests in relation to business combinations in 2019, are as follows:

(in millions of Korean won)	**CMNP Corp.**	**Others**[1]
Consideration transferred		
Cash and cash equivalents	₩ 4,230	₩ 40,459
Assets acquired and liabilities assumed		
Cash and cash equivalents	643	355
Trade receivables	131	23
Inventories	-	32
Property and equipment	2	2,225
Intangible assets	4,626	-
Other assets	530	1,483
Other liabilities	(4,078)	(2,399)
Net identifiable assets acquired	1,853	1,718
Non-controlling interest	-	-
Goodwill	₩ 2,377	₩ 38,740

[1] Represent the amount of the business transfer from KM One Corp., KM Two Corp., KM Three Corp., KM Four Corp., KM Five Corp., KM SIX Corp. and KM Seven Corp.

As at December 31, 2019, in relation to the purchasing of shares of two companies, including RS MEDIA Co., Ltd., the Company has an obligation to purchase certain shares held by the other party for a price agreed at a certain point when the other party expresses its intention to sell the shares, and the Company recognized the amount as financial liabilities.

40. Related Parties Transactions

The list of related parties as at December 31, 2019 and 2018, is as follows:

	2019
Relationship	**Related parties[1]**
Associates	Addcredit Corp., DMS Network, Inc., Tapas Media, Inc., NBT Inc., NBT AMERICA INC., NBT BEIJING CO., LTD., DAUM Venture Fund, Dunamu Inc., Futurewiz, Dunamu Investment Management Co., Ltd., Dunamu&Partners, ROOTONESOFT, IGIS Networks, LAMBDA256, Oscar Entertainment, CNT TECH CO.,LTD., Korea Credit Data, MannaCEA , Manna Town, Farmit, Farmit2, Left Right Co., Ltd., SCI VENTURE, INC., Rebittance Inc., SHOELAB CO., LTD, LUXROBO Co., Ltd., Deleo Korea Co.,Ltd., Skelter Labs, Inc., TOROOC Inc., Dreamcide SPC Ltd., DIGISONIC Co., Ltd., D&C MEDIA CO.,LTD., D&C OF STORM CO.,LTD., K Cube NEO Fund, BUNJANG Corp., Supergene Inc., InnoSignal Co.,Ltd., PoteNit Co.,Ltd., Doctorbrain SPC Ltd., CLAIR, Inc., KIF-Kakao Wooribank Technology Financing Fund, 13MILE.CO.LTD, ADSOTA CORP., CARDOC Inc., LUFTT KOREA Inc., Kakao Kids, FOR YOUR KIDS CO.,LTD., Fixel Hub Co.,Ltd., NOWBUSKING COMPANY, LINEWALKS Inc., CHEQUER Inc., Hasys co.,ltd, mycelebs, inc, DAIWAON. C. I. INC, Haksan Publinshing Co.Ltd., PEOPLEFUND COMPANY, Seoul Media Comics, UBCARE CO., LTD., LEEMITELEESYUN CULTURE INDUSTRIAL JEONMUNHOESA INC., GC SOCIAL MEDIA MARKETING, INC., Sixshop, Glohow Holdings PTE. LTD., Tide Square Co., Ltd., MOVILL Co.Ltd, EASYGO CO., LTD., Ltd., G&G Enterprise Co.Ltd., KakaoBank of Korea Corp., DXM CO.,LTD, DOZEN CO.,LTD, UNION K-Culture Contents Investment Fund, Daeyoung Chaevi CO., Ltd, 325E&C Co., Ltd., Ocean Drive Studio Co., Ltd., KW books, EDAM Entertainment, Un7qi3 Corp., Tangram Factory, KASA NETWORK PTE. LTD, Socialbean Co., Ltd, Allstay Co.,LTD and other 61 companies
Joint venture	DAUMKAKAO PHILIPPINES CORP., AsanKakao Medical Data Co., Ltd., PINPLAY JAPAN Co., Ltd., PHI DIGITAL HEALTHCARE Inc., The Bridges of Madison County Co., Ltd.
Other related parties	K Cube Holdings Co., Ltd., T for Invest, New learn English Inc., Onyx K., Golf & Data System, PLUS 2 PERCENT, NPLUTO, GOLF&FRIEND CO.,LTD., LKMS Limited, LKMS Re, Daeheung Co., Ltd., kakao Impact Foundation, GAMERS FOUNDATION

	2018
Relationship	**Related parties[1]**
Associates	Addcredit Corp., DMS Network, Inc., NBT Inc., Dunamu Inc., Futurewiz, IGIS Networks, Dunamu Investment Management Co., Ltd., Dunamu&Partners, ROOTONESOFT, Tapas Media, Inc., DAUM Venture Fund, NBT AMERICA INC., NBT BEIJING CO., Ltd., MannaCEA , Manna Town, , Farmit, Farmit2, Oscar Entertainment., Left Right Co., Ltd. , SCI VENTURE, INC., Tangram Factory, TANGRAMFACTORY AMERICA, INC., CNT TECH CO.,LTD., You Are the Designer, LUXROBO Co., Ltd., Leferi Inc., Deleo Korea Co.,Ltd., D&C MEDIA CO.,LTD., D&C OF STORM CO.,LTD., K Cube NEO Fund, Skelter Labs, Inc., TOROOC Inc., DIGISONIC Co., Ltd., Supergene Inc., BUNJANG Corp., (Dreamcide SPC Ltd., InnoSignal Co.,Ltd., PoteNit Co.,Ltd., Korea Credit Data, Doctorbrain SPC Ltd., CLAIR, Inc., KIF-Kakao Wooribank Technology Financing Fund, 13MILE.CO.LTD, ADSOTA CORP., CARDOC Inc., Kakao Kids (formerly, BLUEPIN Inc.), Fixel Hub Co.,Ltd., Hasys co.,ltd, FOR YOUR KIDS CO.,LTD., Action Square Co., Ltd., NOWBUSKING COMPANY, LINEWALKS Inc., CHEQUER Inc., LUFTT KOREA Inc., Rebittance Inc., mycelebs, inc, DAIWAON. C. I. INC, Haksan Publinshing Co.Ltd., PEOPLEFUND COMPANY, Seoul Media Comics, Allstay Co.,LTD, UBCARE CO., LTD. and other 67 companies
Joint venture	DAUM KAKAO PHILIPPINES CORP.
Other related parties	K Cube Holdings Co., Ltd., T for Invest, New learn English Inc., Onyx K., MODUDA, PLUS 2 PERCENT, NPLUTO, Daeheung Co., Ltd., kakao Impact Foundation, GAMERS FOUNDATION

[1] Include associates and other related parties of KaKao Corp. and the entities that are not the related party in accordance with Korean IFRS 1024 but belong to the Large Enterprise Group to which the Company also belongs in accordance with the Monopoly Regulation and Fair Trade Act.

Transactions with the related parties for the years ended December 31, 2019 and 2018 and the receivables from and payables to the related parties as at December 31, 2019 and 2018, are as follows:

Transactions

(in millions of Korean won)	2019					
	Revenue and others			Operating expenses and others		
	Revenue	Interest income	Other income	Service fee	Advertising expense	Others
Associates						
FOR YOUR KIDS CO.,LTD.	₩ 1,083	₩ -	₩ -	₩ -	₩ -	₩ -
K Cube NEO Fund	481	-	-	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	1,504	-	-	-	-	-
Kakao Kids	122	-	-	-	-	16
Fixel Hub Co.,Ltd.	16	-	-	15	-	-
Hasys co.,ltd	2,779	-	-	-	-	7
DAIWAON. C. I. INC	145	-	-	514	-	-

(in millions of Korean won)	2019					
	Revenue and others			Operating expenses and others		
	Revenue	Interest income	Other income	Service fee	Advertising expense	Others
Haksan Publinshing Co.Ltd.	-	-	-	2,088	-	-
CLAIR, Inc.	1	-	-	-	-	-
CARDOC Inc.	40	-	-	-	-	13
BUNJANG Corp.	-	326	2	-	-	223
SHOELAB CO., LTD.	1	-	-	-	-	-
MannaCEA	152	-	-	196	-	1
NBT Inc.	133	-	-	1,344	-	-
Leferi Inc.	88	-	-	-	-	-
Tangram Factory	1	-	-	-	-	-
LUFTT KOREA Inc.	1	-	-	-	-	-
G&G ENTERPRISE CO.,LTD.	16	-	-	-	-	-
KakaoBank of Korea Corp.	3,703	-	1	1,685	-	-
UBCARE CO., LTD.	-	-	-	-	-	106
MOVILL Co.Ltd	-	-	39	-	-	-
PEOPLEFUND COMPANY	1,276	-	-	-	-	-
13MILE.CO.LTD	-	-	21	5	-	-
DOZEN CO.,LTD	12	-	-	179	-	-
CNT TECH CO.,LTD.	803	-	-	653	-	-
Dunamu Inc.	896	-	-	227	-	-
Sixshop	26	-	-	18	-	-
Deleo Korea Co.,Ltd.	-	-	-	1	-	-
Seoul Media Comics	4	-	-	1,466	-	-
Tapas Media,. Inc.	133	-	-	-	-	-
D&C MEDIA CO.,LTD.	120	-	-	17,653	4	-
Doctorbrain SPC Ltd.	-	-	4	-	-	-
mycelebs, inc	100	-	-	608	-	-
KW Books, Inc.	-	-	-	-	-	-
Tide Square Co., Ltd.	1	-	300	-	-	-
NOWBUSKING COMPANY	-	-	-	4	-	1
Futurewiz	-	-	-	-	-	-
Korea Credit Data	2,021	-	-	-	-	-
Socialbean Co., Ltd	1	-	23	-	-	-
	15,657	326	389	26,655	4	366
Other related parties						
Kakao Impact Foundation	169	-	-	-	-	3,223
GAMERS FOUNDATION	-	-	2	-	-	-
	169	-	2	-	-	3,223
	₩ 15,826	₩ 326	₩ 390	₩ 26,655	₩ 4	₩ 3,589

[1] Received dividends of ₩ 5,329 million from Dunamu Inc., UBCARE CO., LTD. and K Cube NEO Fund in 2019, and the dividends amount is not included in the above table.

Transactions

(in millions of Korean won)	2018					
	Revenue and others			Operating expenses and others		
	Revenue	Interest income	Other income	Service fee	Advertising expense	Others
Associates						
MannaCEA	₩ 54	₩ -	₩ -	₩ 21	₩ -	₩ -
Dunamu Inc. [2]	1,454	-	-	134	-	-
You Are the Designer	1	-	-	-	-	-
CNT TECH CO.,LTD.	1,049	-	-	570	146	1
Leferi Inc.	57	-	-	-	-	-
CARDOC Inc.	39	-	-	-	-	-
BUNJANG Corp.	-	330	-	-	-	40
CLAIR, Inc.	-	-	-	-	-	507
Korea Credit Data	42	-	-	150	-	-
NOWBUSKING COMPANY	3	-	-	1	-	1
Kakao Kids[1]	499	-	-	63	-	17,666
Futurewiz	45	-	-	-	-	-
NBT Inc.	305	-	-	220	-	-
Fixel Hub Co.,Ltd.	3	-	-	100	-	-
Left Right Co., Ltd.	-	-	-	-	-	-
D&C MEDIA CO.,LTD.	57	-	-	12,004	-	37
Doctorbrain SPC Ltd.	4	-	-	-	-	-
K Cube NEO Fund	-	-	385	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	-	-	1,368	-	-	-
DAIWAON. C. I. INC	4	-	-	4	-	1
Haksan Publinshing Co.Ltd.	-	-	-	9	-	-
FOR YOUR KIDS CO.,LTD.	479	-	-	-	-	-
LUFTT KOREA Inc.	-	-	-	-	-	-
13MILE.CO.LTD	-	4	-	2	-	-
PEOPLEFUND COMPANY	130	-	-	-	-	-
Tapas Media, Inc.	144	-	-	-	-	-
Hasys co.,ltd	2,054	-	-	-	-	-
Pinplay	5	-	-	-	-	-
WishLink	16	-	-	-	-	-
	6,442	334	1,753	13,279	146	18,252
Other related parties						
Kakao Impact Foundation	63	-	-	-	-	4,000
NPLUTO	-	-	-	-	-	197
Daeheung Co., Ltd.	-	42	-	-	-	-
	63	42	-	-	-	4,197
	₩ 6,505	₩ 376	₩ 1,753	₩ 13,279	₩ 146	₩ 22,449

[1] Includes purchases of investments in Pinplay from Kakao Kids (formerly, BLUEPIN Inc.) in 2018.

[2] Received dividends of ₩ 800 million from Dunamu Inc. in 2018.

Receivables and Payables

(in millions of Korean won)

	2019				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates					
FOR YOUR KIDS CO.,LTD.	₩ 22	₩ -	₩ -	₩ 1	₩ 77
K Cube NEO Fund	120	-	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	374	-	-	-	-
Kakao Kids	8	-	-	-	-
Fixel Hub Co.,Ltd.	-	-	1	3	-
Hasys co.,ltd	234	-	669	790	-
DAIWAON. C. I. INC	39	-	462	243	-
Haksan Publinshing Co.Ltd.	-	-	2,326	399	-
G&G Enterprise Co.Ltd.	3	-	-	52	-
CLAIR, Inc.	-	-	-	35	-
Tangram Factory	-	-	-	-	-
KakaoBank of Korea Corp.	332	-	10,563	317	-
MANNACEA	21	-	-	27	-
BUNJANG Corp.	-	-	-	8	-
UBCARE CO., LTD.	-	-	-	69	-
MOVILL Co.Ltd	-	1,300	-	-	-
PEOPLEFUND COMPANY	200	-	-	-	-
13MILE.CO.LTD	-	450	4	-	-
DOZEN CO.,LTD	5	-	-	59	-
Sixshop	-	-	-	4	-
Deleo Korea Co.,Ltd.	-	-	-	-	-
Tapas Media,. Inc.	36	-	-	-	11
NBT Inc.	2	-	68	89	-
D&C MEDIA CO.,LTD.	19	-	2,918	1,991	2
Dreamcide SPC Ltd.	-	-	400	-	-
Doctorbrain SPC Ltd.	1	-	400	-	-
mycelebs, inc	110	-	899	93	-
Seoul Media Comics	-	-	823	101	-
KWbooks	-	-	1,397	539	-
Dunamu Inc.	78	-	-	22	-
NOWBUSKING COMPANY	-	-	-	0	-
CNT TECH CO.,LTD.	39	-	-	326	-
Tide Square Co., Ltd.	-	-	-	-	-
CARDOC Inc.	-	-	-	6	-
LUFTT KOREA Inc.	-	-	-	7	-
Socialbean Co., Ltd	-	-	-	17	-
325E&C Co., Ltd.	-	-	2,235	207	16
EDAM Entertainment Corp	12	-	-	856	-
SHOELAB CO., LTD.	-	-	-	-	-
	1,655	1,750	23,165	6,263	105
Other related parties					
kakao Impact Foundation	17	-	-	-	-
LKMS INC.	-	-	2	28	116
K Cube Holdings Co., Ltd.	-	-	-	-	2,500
GAMERS FOUNDATION	-	-	-	-	-
	17	-	2	28	2,616
	₩ 1,671	₩ 1,750	₩ 23,168	₩ 6,290	₩ 2,721

Receivables and Payables

(in millions of Korean won)

	2018				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates					
MannaCEA	₩ -	₩ -	₩ -	₩ 124	₩ -
CNT TECH CO.,LTD.	65	-	-	97	-
NOWBUSKING COMPANY	3	-	-	-	-
Dunamu Inc.	113	-	-	12	-
Kakao Kids	16	-	-	-	-
Fixel Hub Co.,Ltd.	1	-	2	7	-
Left Right Co., Ltd.	-	-	-	-	-
D&C MEDIA CO.,LTD.	11	-	2,316	634	-
Dreamcide SPC Ltd.	-	-	400	-	-
Doctorbrain SPC Ltd.	1	-	400	-	-
Haksan Publinshing Co.Ltd.	-	-	1,394	787	-
DAIWAON. C. I. INC	-	-	-	254	-
Seoul Media Comics	-	-	785	143	-
CLAIR, Inc.	-	-	-	33	-
NBT Inc.	9	-	-	5	-
FOR YOUR KIDS CO.,LTD.	113	-	-	-	-
You Are the Designer.	-	-	-	-	-
CARDOC Inc.	-	-	-	-	-
LUFTT KOREA Inc.	-	-	-	-	-
BUNJANG Corp.	-	-	-	11	-
13MILE.CO.LTD	-	450	4	2	-
PEOPLEFUND COMPANY	82	-	-	-	-
Hasys co.,ltd	221	-	530	520	-
Allstay Co.,LTD	-	100	-	1	-
	₩ 635	₩ 550	₩ 5,832	₩ 2,631	₩ -
Other related parties					
kakao Impact Foundation	₩ 28	₩ -	₩ -	₩ -	₩ -
	₩ 663	₩ 550	₩ 5,832	₩ 2,631	₩ -

Loans arising from related parties for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)

	2019				
	Beginning balance	Loans	Repayments	Changes in scope of consolidation	Ending balance
Associates					
13MILE.CO.LTD	₩ 450	₩ -	₩ -	₩ -	₩ 450
MOVILL Co.Ltd	-	1,300	-	-	1,300
Others	100	200	(100)	(200)	-
Other related parties					
Daeheung Co., Ltd.	4,000	-	-	-	4,000
	₩ 4,550	₩ 1,500	₩ (100)	₩ (200)	₩ 5,750

(in millions of Korean won)	2018				
	Beginning balance	**Loans**	**Acquisition from bonds**	**Repayments**	**Changes in scope of consolidation**	**Ending balance**
Associates						
3Points Inc.	₩ 50	₩ -	₩ -	₩ -	₩ (50)	₩ -
SONNORI CORP.	-	1,500	-	-	(1,500)	-
BUNJANG Corp.	-	150	-	(150)	-	-
Allstay Co.,LTD	-	300	-	(500)	300	100
13MILE.CO.LTD	-	450	-	-	-	450
	50	2,400	-	(650)	(1,250)	550
Other related parties						
Daeheung Co., Ltd.	-	2,000	4,000	(2,000)	-	4,000
	₩ 50	₩ 4,400	₩ 4,000	₩ (2,650)	₩ (1,250)	₩ 4,550

During 2019 and 2018, the Company made contribution in cash to certain related parties (Note 16).

Key management compensation

The compensation paid or payable to key management for the years ended December 31, 2019 and 2018 consists of:

(in millions of Korean won)	**2019**	**2018**
Salaries	₩ 1,830	₩ 2,159
Retirement benefit expense	111	48
Other long-term employee benefits	25	28
Share-based payments	884	473
	₩ 2,850	₩ 2,708

41. Credit Risk

Credit risk arises from cash and cash equivalents, contractual cash flows of debt investments, favorable derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to corporate and individual customers, including outstanding receivables.

(a) Risk management

Credit risk is managed on a group basis. For banks and financial institutions, only independently rated parties with a minimum rating of 'A' are accepted.

If corporate customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors.

There are no significant concentrations of credit risk, whether through exposure to individual customers, specific industry sectors and/or regions.

The Company's investments in debt instruments are considered to be low risk investments.

(b) Security

For some trade receivables, the Company may obtain security in the form of guarantees or letters of credit, etc. which can be called upon if the counterparty is in default under the terms of the agreement.

(c) Impairment of financial assets

The Company has following financial assets that are subject to the expected credit loss model:

· trade receivables for sales of goods and provision of services,

· other financial assets carried at amortized cost.

While cash equivalents are also subject to the impairment requirement, the identified impairment loss was immaterial.

A. *Trade receivables*

The Company applies the simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. Allowance for doubtful accounts as at December 31, 2019, is as follows. The expected credit losses include forward looking information.

(in millions of Korean won)	2019					
	Current	**Less than 3 months past due**	**Less than 6 months past due**	**Less than 9 months past due**	**Over 9 months**	**Total**
Trade receivables						
Expected loss rate	0.23%	2.68%	19.82%	5.99%	88.18%	
Gross carrying amount	₩ 143,751	₩ 11,839	₩ 1,105	₩ 882	₩ 4,827	₩ 162,404
Allowance for doubtful accounts	337	317	219	53	4,257	5,184

Movements in the loss allowance provision for trade receivables and contract assets for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)	**2019**	**2018**
Beginning balance	₩ 7,568	₩ 7,762
Amounts restated through beginning balance	-	567
Loss allowance as at January 1, 2019 – after adjustment	7,568	8,329
Changes in scope of consolidation	(91)	887
Increase in loss allowance recognized in profit or loss during the year	9	2,793
Unused amounts reversed	(404)	-
Receivables written off during the year as uncollectible	(1,669)	(4,441)
Transfer (reclassification of accounts)	(201)	-
Others (currency translation effects)	(28)	-
Ending balance	₩ 5,184	₩ 7,568

The maximum exposure to credit risk at the reporting date is the carrying amount of trade receivables.

Amounts recognized as 'Impairment loss on trade receivables' in profit or loss in relation to impairment for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Trade receivables				
Changes in loss allowance provision for trade receivables	₩	(395)	₩	2,793
Other financial assets				
Changes in loss allowance provision for other financial assets		2,327		292
Other current assets				
Changes in loss allowance provision for other current assets		(121)		-
	₩	1,811	₩	3,084

B. Other financial assets measured at amortized cost

Other financial assets at amortized cost include non-trade receivables, loans and other receivables.

Movements in loss allowance provision for other financial assets at amortized cost for the year ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Beginning balance	₩	41,774	₩	36,720
Increase in loss allowance recognized in profit or loss as operating expenses during the year		2,327		292
Others (changes in scope of consolidation, currency translation effects and others)		(444)		4,763
Ending balance	₩	43,657	₩	41,774

42. Changes in Accounting Policies

The Company has adopted Korean IFRS 1116, retrospectively, from January 1, 2019, but has not restated comparatives for the 2018 reporting period, as permitted under the specific transitional provisions in the standard. The reclassifications and the adjustments arising from the new leasing rules are, therefore, recognized in the consolidated statement of financial position on January 1, 2019.

42.1 Adjustments recognized on adoption of Korean IFRS 1116 *Lease*

On adoption of Korean IFRS 1116, the Company recognized lease liabilities in relation to leases which had previously been classified as ‘operating leases’ under the principles of Korean IFRS 1017. These liabilities were measured at the present value of the remaining lease payments, discounted using the lessee’s incremental borrowing rate as at January 1, 2019. The lessee’s weighted average incremental borrowing rate applied to the lease liabilities on January 1, 2019 was 1.45% ~ 5.92%.

(in millions of Korean won)		**January 1, 2019**
Operating lease commitments disclosed as at December 31, 2018	₩	222,020
Discounted using the lessee's incremental borrowing rate of at the date of initial application		206,143
Less: short-term leases not recognized as a liability		(6,224)
Less: low-value leases not recognized as a liability		(1,054)
others		(90)
Lease liability recognized as at January 1, 2019		198,775
Of which are:		
Current lease liabilities		42,514
Non-current lease liabilities		156,261
	₩	198,775

Right-of use assets were measured at the amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to that lease recognized in the consolidated statement of financial position as at December 31, 2018. There were no onerous lease contracts that would have required an adjustment to the right-of-use assets at the date of initial application.

(a) Amounts recognized in the consolidated statement of financial position

The consolidated statement of financial position shows the following amounts relating to leases:

(in millions of Korean won)		**December 31, 2019**		**January 1, 2019**
Right-of-use assets				
Properties	₩	179,781	₩	176,750
Machinery		42,242		18,910
Vehicles		5,436		4,132
	₩	227,458	₩	199,792

(in millions of Korean won)		**December31,2019**		**January1,2019**
Lease liabilities				
Current	₩	68,077	₩	42,514
Non-current		164,989		156,261
	₩	233,065	₩	198,775

Additions to the right-of-use assets during the 2019 financial year were ₩ 83,598 million.

(b) Amounts recognized in the consolidated statement of profit or loss

The consolidated statement of profit or loss shows the following amounts relating to leases:

(in millions of Korean won)		**2019**
Depreciation of right-of-use assets		
Properties	₩	37,994
Machinery		15,492
Vehicles		2,643
	₩	56,129
Interest expense relating to lease liabilities (included in finance cost)	₩	6,370
Expense relating to short-term leases (included in operating expenses)		11,142
Expense relating to leases of low-value assets that are not short-term leases (included in operating expenses)		927
Expense relating to variable lease payments not included in lease liabilities (included in operating expenses)		22,957
Income from subleases of right-of-use assets		69

The total cash outflow for leases in 2019 was ₩ 78,071 million.

The change in accounting policy affected the following items in the consolidated statement of financial position on January 1, 2019:

- right-of-use assets: increase by ₩ 199,792 million
- lease liabilities: increase by ₩ 198,775 million
- prepaid expenses: decrease by ₩ 1,017 million

(c) Practical expedients applied

In applying Korean IFRS 1116 for the first time, the Company has used the following practical expedients permitted by the standard:

- the use of a single discount rate to a portfolio of leases with reasonably similar characteristics
- reliance on previous assessments on whether leases are onerous
- the accounting for operating leases with a remaining lease term of less than 12 months as at January 1, 2019, as short-term leases

- the exclusion of initial direct costs for the measurement of the right-of-use asset at the date of initial application, and

- the use of hindsight in determining the lease term where the contract contains options to extend or terminate the lease

The Company has also elected not to reassess whether a contract is, or contains a lease at the date of initial application. Instead, for contracts entered into before the transition date, the Company relied on its assessment made applying Korean IFRS 1017 and Interpretation 2104 *Determining whether an Arrangement contains a Lease*.

42.2 The Company's leasing activities and how these are accounted for

The Company leases various offices and machinery. Lease contracts are typically made for fixed periods of 1 to 9 years, but may have extension options as described in (b) below. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

Until the 2018 financial year, leases of property and equipment were classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) were charged to profit or loss on a straight-line basis over the period of the lease.

From January 1, 2019, leases are recognized as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Company. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable

- Variable lease payment that are based on an index or a rate

- Amounts expected to be payable by the lessee under residual value guarantees

- The exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and

- Payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and
- restoration costs

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT-equipment and small items of office furniture.

(a) Variable lease payments

Some machinery leases contain variable payment terms that are linked to usage. Some property leases contain variable payment terms that are linked to sales generated from a store. Variable payment terms are used for a variety of reasons, including minimizing the fixed costs base for machinery and newly established stores. Variable lease payments that depend on usage are recognized in profit or loss when the machinery is used and when the usage is determined by the settlement. Variable lease payments that depend on sales are recognized in profit or loss in the period in which the condition that triggers those payments occurs.

(b) Extension and termination options

Extension and termination options are included in a number of property and infra leases across the Company. These terms are used to maximize operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable by mutual consent between the respective lessor and the Company.

43. Information for Non-controlling Interests

43.1 Changes in Accumulated Non-controlling Interests

The profit or loss allocated to non-controlling interests and accumulated non-controlling interests of subsidiaries that are material to the Company for the years ended December 31, 2019 and 2018, is as follows:

(in millions of Korean won)

	2019						
	Non-controlling interest rate (%)	Accumulated non-controlling interests at the beginning of the year	Profit or loss allocated to non-controlling interests	Dividends paid to non-controlling interests	Investment by non-controlling interests and disposal of shares	Others	Accumulated non-controlling interests at the end of the year
Kakao Games Corp.	39.5	₩ 159,822	₩ (1,127)	₩ -	₩ -	₩ 3,549	₩ 162,244
Kakaopay Corp.	39.1	43,318	(25,424)	-	-	890	18,784
Kakao Page Corp.	36.4	82,723	2,595	-	36,272	6,683	128,273
Kakao Mobility Corp.	30.7	75,831	(7,792)	-	-	1,429	69,468
Kakao M Corp.	10.2	(11)	639	-	54,174	9,845	64,646

(in millions of Korean won)

	2018						
	Non-controlling interest rate (%)	Accumulated non-controlling interests at the beginning of the year	Profit or loss allocated to non-controlling interests	Dividends paid to non-controlling interests	Investment by non-controlling interests and disposal of shares	Others	Accumulated non-controlling interests at the end of the year
Kakao Games Corp.	39.6	₩ 47,265	₩ 5,388	₩ -	₩ 99,077	₩ 8,093	₩ 159,822
Kakaopay Corp.	39.1	79,941	(36,552)	-	-	(70)	43,318
Kakao Page Corp.	36.2	71,820	1,896	-	-	9,007	82,723
Kakao Mobility Corp.	30.7	71,603	(5,637)	-	14,089	(4,224)	75,831
Kakao M Corp.	0.0	-	(11)	-	-	-	(11)

43.2 Summarized Financial Information on Subsidiaries

Set out below is summarized financial information for each subsidiary that has non-controlling interests that are material to the Company. The amounts disclosed for each subsidiary are before inter-company eliminations.

Summarized consolidated statements of financial position

(in millions of Korean won)	2019				
	Kakao Games Corp.	Kakaopay Corp.	Kakao Page Corp.	Kakao Mobility Corp.	Kakao M Corp.
Current assets	₩ 333,592	₩ 475,300	₩ 159,369	₩ 47,168	₩ 294,776
Non-current assets	258,160	49,326	218,203	227,761	528,784
Current liabilities	143,266	457,130	36,993	44,966	218,057
Non-current liabilities	31,105	20,883	24,722	14,364	64,613
Equity	₩ 417,380	₩ 46,614	₩ 315,857	₩ 215,600	₩ 540,889

(in millions of Korean won)	2018				
	Kakao Games Corp.	Kakaopay Corp.	Kakao Page Corp.	Kakao Mobility Corp.	Kakao M Corp.
Current assets	₩ 309,691	₩ 369,495	₩ 65,357	₩ 115,850	₩ 304,314
Non-current assets	236,002	17,836	186,787	145,458	355,795
Current liabilities	114,391	271,501	53,134	19,028	221,292
Non-current liabilities	14,697	4,963	971	2,548	3,136
Equity	₩ 416,606	₩ 110,867	₩ 198,039	₩ 239,732	₩ 435,681

Summarized consolidated statements of comprehensive income

(in millions of Korean won)	2019				
	Kakao Games Corp.	Kakaopay Corp.	Kakao Page Corp.	Kakao Mobility Corp.	Kakao M Corp.
Revenue	₩ 391,040	₩ 141,103	₩ 257,062	₩ 104,852	₩ 353,008
Profit (loss) for the year	8,866	(65,011)	6,095	(25,547)	8,910
Other comprehensive income	(10,401)	(210)	610	(422)	(365)
Total comprehensive income	₩ (1,535)	₩ (65,221)	₩ 6,705	₩ (25,969)	₩ 8,545

(in millions of Korean won)	2018				
	Kakao Games Corp.	Kakaopay Corp.	Kakao Page Corp.	Kakao Mobility Corp.	Kakao M Corp.
Revenue	₩ 420,805	₩ 69,526	₩ 187,578	₩ 53,634	₩ 53,987
Profit (loss) for the year	18,897	(93,483)	(4,205)	(18,531)	59
Other comprehensive income	(8,723)	(51)	1,353	(274)	558
Total comprehensive income	₩ 10,174	₩ (93,534)	₩ (2,852)	₩ (18,805)	₩ 617

Summarized consolidated statements of cash flows

(in millions of Korean won)	2019				
	Kakao Games Corp.	**Kakaopay Corp.**	**Kakao Page Corp.**	**Kakao Mobility Corp.**	**Kakao M Corp.**
Cash flows from operating activities	₩ 73,289	₩ 108,871	₩ 29,671	₩ (9,089)	₩ 26,410
Cash flows from investing activities	73,572	10,771	(55,837)	1,756	(113,356)
Cash flows from financing activities	(5,036)	(2,325)	79,353	(1,490)	77,745
Net increase (decrease) in cash and cash equivalents	141,825	117,317	53,187	(8,823)	(9,201)
Cash and cash equivalents at beginning of year	104,822	261,372	14,645	35,410	135,547
Effects of exchange rate changes on cash and cash equivalents	457	-	(33)	-	-
Cash and cash equivalents at end of year	₩ 247,105	₩ 378,689	₩ 67,799	₩ 26,586	₩ 126,346

(in millions of Korean won)	2018				
	Kakao Games Corp.	**Kakaopay Corp.**	**Kakao Page Corp.**	**Kakao Mobility Corp.**	**Kakao M Corp.**
Cash flows from operating activities	₩ 73,399	₩ 81,007	₩ (1,396)	₩ (7,624)	₩ 2,294
Cash flows from investing activities	(191,173)	4,710	(30,451)	(156,227)	(23,414)
Cash flows from financing activities	162,105	-	17,850	(119)	156,666
Net increase (decrease) in cash and cash equivalents	44,330	85,717	(13,997)	(163,970)	135,547
Cash and cash equivalents at beginning of year	60,502	175,655	28,640	199,380	-
Effects of exchange rate changes on cash and cash equivalents	(11)	-	3	-	-
Cash and cash equivalents at end of year	₩ 104,822	₩ 261,372	₩ 14,645	₩ 35,410	₩ 135,547

43.3 Transactions with Non-controlling Interests

Effects of transactions with non-controlling interests on the equity attributable to owners of the Parent Company for the years ended December 31, 2019 and 2018, are as follows:

(in millions of Korean won)		**2019**		**2018**
Capital increase of a subsidiary [1,2]	₩	42,395	₩	55,430
Disposal of interests in a subsidiary[4]		-		35,911
Business combination of entities under a common control[3]		-		(118,811)
Others		3,665		33,324
Net effect on equity	₩	46,060	₩	5,854

[1] During 2019, Kakao M Corp., a subsidiary, decided to increase capital through allotment to a third party. Total amount of the capital increase is ₩ 96,569 million. As a result, the Company's interests in Kakao M Corp. decreased from 100% to 89.8%. Due to the above transaction, the non-controlling interest increased by ₩ 54,174 million as at the date of capital increase and the share capital attributed to the owners of the Parent Company increased by ₩ 42,395 million.

[2] During 2018, Kakao Games Corp., a subsidiary, decided to increase capital through allotment to a third party. Total amount of the capital increase is ₩ 139,996 million. As a result, the Company's interests in Kakao Games Corp. decreased from 74.9% to 60.4%. Due to the above transaction, the non-controlling interest increased by ₩ 93,143 million as at the date of capital increase and the share capital attributed to the owners of the Parent Company increased by ₩ 46,853 million.

[3] During 2018, the Company acquired treasury shares through merger with Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.), a subsidiary. The acquisition amount of ₩ 222,672 million was deducted from the equity attributable to the owner. In addition, as the Company acquired additional non-controlling interests through the merger, share capital attributed to the owner increased by ₩ 103,861 million.

[4] During 2018, the Company disposed of 735,000 shares of Kakao Mobility Corp., a subdiairy, for ₩ 50,000 million to a third party. Due to the above transaction, the non-controlling interest increased by ₩ 35,911 million as at the disposal date and the share capital attributed to the owners of the Parent Company increased by ₩ 14,089 million.

44. Events After the Reporting Period

In October 2018, Kakaopay Corp., a subsidiary, has entered into a contract to acquire 60% interests of BARO Investment & Securities and applied for a major shareholder qualification examination to Financial Services Commission in April 2019. After the approval of the examination on February 5, 2020, the acquisition of shares was completed on February 6, 2020.

In accordance with the resolution of the Board of Directors on February 11, 2020, Kakao Games Corp., a subsidiary, decided to issue new share to a designated third party. The number of new shares to be issued is 1,375,661 shares and the amount is ₩ 24,641 million.

In accordance with the resolution of the Board of Directors on February 11, 2020, Kakao Games Corp. acquired an additional 4,238,481 shares of XLGAMES Inc. on March 11, 2020. The investment amount is ₩ 118,092 million and the interests after the additional acquisition is 52.97%, and accordingly, it was newly included in subsidiaries.

In accordance with the resolution of the Board of Directors on March 16, 2020, Kakao M Corp., a subsidiary, decided to issue new share to a designated third-party. The number of new shares to be issued is 1,147,974 shares and the amount is ₩ 209,816 million.

Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of
Kakao Corp.

Opinion

We have audited the accompanying consolidated financial statements of Kakao Corp. and its subsidiaries (collectively the "Company"), which comprise the consolidated statements of financial position as at December 31, 2018 and 2017 and the consolidated statements of comprehensive income(loss), of changes in equity and of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as at December 31, 2018 and 2017, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS).

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Consolidated Financial Statements* section of our report. We are independent of the Company in accordance with the ethical requirements of the Republic of Korea that are relevant to our audit of the consolidated financial statements and we have fulfilled our other ethical responsibilities in accordance with the ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

A. Recognition in revenue from search advertising

Key Audit Matter

We considered its size and complexity of revenue from search advertising amounting to ₩ 184,768 million recognized in 2018. Revenue from search advertising depends on the terms of the contracts with a number of advertisers and advertising and the amount of revenue from search advertising of the Company is determined and recorded in a financial system through a complex process based on large amounts of data including a number of customer information and various contract terms aggregated in the sales system (Note 2). There is a potential risk that the amount of revenue would be improperly recognized due to such complex process and large amounts of data. As a result, we determined that there is a significant risk in relation to the occurrence of the revenue from search advertising.

How our audit addressed the Key Audit Matter

To confirm the appropriateness of accounting for recognition in revenue from search advertising of the Company, we performed the following important audit procedures:

- Obtained understanding of and evaluated accounting policies and controls of the Company regarding recognition of revenue from Search and Moment advertising
- Tested the effectiveness of control activities for general computer controls on the operating system (program change, security, computer operation and other)
- Tested the effectiveness of the controls for monitoring the non-charged amounts in the operating system by testing samples
- Examined the accuracy of the charged amounts in the operating system through an independent reperformance
- Examined the effectiveness of the control in relation to a pre-approval for the change of data by testing samples and inspecting the relevant evidence documents
- Reconciled the amount of revenue recorded in the operating system to the amount of revenue recognized in the financial accounting system
- Examined the accuracy of operating income recognized through performing sample test with screening of evidence documents

B. Impairment of goodwill of cash-generating units of internet portal and other services and music services

Key Audit Matter

As at December 31, 2018, goodwill of cash-generating unit of internet portal and other services amounts to ₩ 1,080,385 million and goodwill of cash-generating units of music services amounts to ₩ 1,221,284 million (Note 18). The Company performed the impairment tests on the above goodwill using value-in-use calculations based on the discounted cash flow (Note 3). We determined accounting

for the above goodwill as a key audit considering its significant magnitude (₩ 2,301,669 million) and management's significant judgements and estimates about discount rate, growth rate and future cash flow forecasts uesed for value-in-use calculations.

How our audit addressed the Key Audit Matter

We performed the following important audit procedures for the impairment tests on the above goodwill

- Evaluate the adequacy of valuation model used by management to estimate value-in-use
- Evaluate the qualification and independence of an external specialist hired by the company
- Understand and evaluate procedure and control in relation to future cash flow estimates
- Evaluate whether future cash flow is reasonably estimated based on a business plan reported to management
- Evaluate the reasonableness of key assumptions used to estimate value-in-use
    - Confirm whether forecasts including revenue growth rates and operating profit rates of relevant CGU are consistent with previous performances and compare the actual performance of the current period with the estimates of the prior period
    - Compare the economic and industrial forecasts with long-term growth rate
    - Compare the discount rates that are independently calculated using an observable information with the discount rates applied by management
- Evaluate the results of a sensitivity analysis on the discount rates and the perpetual growth rates performed by management to assess the impact of changes in key assumptions on the impairment tests

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with Korean IFRS, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate

the Company or to cease operations.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Korean Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Company audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Among the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period as the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Doo-sam, Kim, Certified Public Accountant.

/s/ Samil PricewaterhouseCoopers
Seoul, Korea
March 18, 2019

This report is effective as at March 18, 2019, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

Kakao Corp. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2018 and 2017

(in millions of Korean won)	Notes		2018		2017
Assets					
Current assets					
Cash and cash equivalents	4,5,7,8,35	₩	1,247,013	₩	1,116,793
Short-term financial instruments	4,5,7,8,35		924,215		394,152
Financial assets at fair value through profit or loss	5,7,9		25,781		-
Available-for-sale securities	5,7,10		-		103
Derivative financial assets	4,5,7,24		1,174		53,650
Trade receivables	4,5,7,11		193,669		179,238
Other current financial assets	4,5,7,11		207,656		134,343
Inventories			35,836		21,560
Other current assets	15		223,605		93,258
			2,858,950		1,993,096
Non-current assets					
Long-term financial instruments	4,5,7,8		50,689		10,685
Financial assets at fair value through profit or loss	4,5,7,9		104,846		-
Financial assets at fair value through other comprehensive income	5,7,9		329,345		-
Available-for-sale securities	5,7,10		-		160,038
Investments in associates and joint venture	16		305,188		161,950
Other non-current financial assets	4,5,7,11		58,321		39,879
Property and equipment	17		314,812		271,044
Intangible assets	18		3,865,265		3,689,582
Other non-current assets	15		16,412		8,789
Deferred income tax assets	22		55,716		14,366
			5,100,592		4,356,332
Total assets		₩	7,959,542	₩	6,349,428
Liabilities					
Current Liabilities					
Trade and other payables	4,5,7,13	₩	460,813	₩	280,380
Short-term borrowings	4,5,7,19,35		609,480		174,372
Current portion of long-term borrowings	4,5,7,14		174,313		42,247
Income tax payable			71,040		115,123
Provisions	23		3,636		1,934
Derivative financial liabilities	5,7,24		13,916		2,254
Other current liabilities	15		705,998		424,553
			2,039,196		1,040,863
Non-current liabilities					
Non-current trade and other payables	4,5,7,13		915		1,607
Long-term borrowings	4,5,7,19,35		44,995		620,808
Non-current provisions	23		7,611		4,211
Net defined benefit liabilities	20		2,822		1,963
Other long-term employee benefits liabilities	21		40,156		32,015
Deferred income tax liabilities	22		151,228		139,502
Other non-current financial liabilities	4,5,7,14		45,461		45,537
			293,188		845,643
Total liabilities		₩	2,332,385	₩	1,886,506

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2018 and 2017

(in millions of Korean won)	Notes	2018	2017
Equity			
Share capital	1,25	₩ 41,744	₩ 34,004
Share premium	25	4,647,543	3,603,587
Other component of equity	27	1,492	(6,026)
Accumulated other comprehensive loss	28	(7,329)	(4,968)
Retained earnings	29	453,400	402,542
Equity attributable to owners of the Parent Company		5,136,851	4,029,139
Non-controlling interest		490,307	433,783
Total equity		5,627,158	4,462,923
Total liabilities and equity		₩ 7,959,542	₩ 6,349,428

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Comprehensive Income(Loss)
Years Ended December 31, 2018 and 2017

(in millions of Korean won, except per share amounts)	Note	2018	2017
Revenue	6	₩ 2,416,992	₩ 1,972,326
Operating expenses	30	2,340,959	1,805,793
Impairment loss on trade receivables		3,084	1,154
Operating profit		72,949	165,380
Other non-operating income	31	74,531	36,247
Other non-operating expenses	31	85,772	90,568
Finance income	32	112,453	78,947
Interest income		41,783	14,589
Other finance income		70,670	64,358
Finance costs	32	50,143	45,744
Share of income of associates and joint venture	16	32,257	26,475
Share of loss of associates and joint venture	16	25,605	17,438
Profit before income tax		130,670	153,298
Income tax expense	22	114,781	28,204
Profit for the year		15,889	125,094
Profit is attributable to:			
Equity holders of the Parent Company		47,886	108,597
Non-controlling interest		(31,997)	16,497
Other comprehensive income (loss)			
Items not to be reclassified subsequently to profit or loss:			
Remeasurement of net defined benefit liabilities		(2,680)	(2,561)
Gain on valuation of equity instruments at fair value through other comprehensive income		6,870	-
Items to be reclassified subsequently to profit or loss:			
Gains (losses) on valuation of available-for-sale securities, net of tax		-	(1)
Gain on valuation of debt instruments at fair value through other comprehensive income		142	-
Share of other comprehensive loss of associates, net of tax		(36)	(803)
Foreign currency translation adjustments, net of tax		4,038	(2,615)
Other comprehensive income (loss) for the year, net of tax		8,334	(5,979)
Total comprehensive income for the year		₩ 24,223	₩ 119,115
Total comprehensive income for the year is attributable to:			
Equity holders of the Parent Company		₩ 59,297	₩ 102,708
Non-controlling interest		₩ (35,074)	₩ 16,407
Earnings per share to the equity holders of the Parent Company			
Basic earnings per share	33	₩ 623	₩ 1,602
Diluted earnings per share	33	₩ 614	₩ 1,552

The above consolidated statements of comprehensive income(loss) should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2018 and 2017

(in millions of Korean won)	Note	Attributable to equity holders of the Parent Company						Non-controlling Interest	Total Equity
		Share Capital	Share Premium	Other Components of Equity	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total		
Balance at January 1, 2017		₩ 33,858	₩ 3,105,014	₩ (11,232)	₩ 920	₩ 303,952	₩ 3,432,512	₩ 235,539	₩ 3,668,051
Comprehensive income :									
Profit for the year		-	-	-	-	108,597	108,597	16,497	125,094
Foreign currency translation adjustments, net of tax		-	-	-	(2,962)	-	(2,962)	347	(2,615)
Share of other comprehensive income (loss) of associates, net of tax		-	-	-	(1,069)	-	(1,069)	266	(803)
Gain (loss) on valuation of available-for-sale securities, net of tax		-	-	-	(130)	-	(130)	130	(1)
Remeasurement of defined benefit obligation		-	-	-	(1,728)	-	(1,728)	(833)	(2,561)
Total comprehensive income for the year		-	-	-	(5,888)	108,597	102,708	16,407	119,115
Transactions with equity holders:									
Exercise of stock options	25,26	121	1,955	(428)	-	-	1,649	1,501	3,150
Conversion of convertible bonds	19	25	5,954	-	-	-	5,979	-	5,979
Share-based compensation	26	-	-	5,633	-	-	5,633	3,267	8,900
Cash dividends and distribution of investments		-	-	-	-	(10,006)	(10,006)	(9,717)	(19,723)
Change in ownership interest over subsidiaries		-	490,664	-	-	-	490,664	182,995	673,659
Change in scope of consolidation		-	-	-	-	-	-	3,792	3,792
Total transactions with equity holders		146	498,573	5,205	-	(10,006)	493,919	181,838	675,756
Balance at December 31, 2017		₩ 34,004	₩ 3,603,587	₩ (6,026)	₩ (4,968)	₩ 402,542	₩ 4,029,139	₩ 433,783	₩ 4,462,923

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2018 and 2017

(in millions of Korean won)	Note	Attributable to equity holders of the Parent Company						Non-controlling Interest	Total Equity
		Share Capital	Share Premium	Other Components of Equity	Accumulated Other Comprehensive Income (loss)	Retained Earnings	Total		
Balance at January 1, 2018		₩ 34,004	₩ 3,603,587	₩ (6,026)	₩ (4,968)	₩ 402,542	₩ 4,029,139	₩ 433,783	₩ 4,462,923
Cumulative effect of change in accounting policy		-	-	-	(13,773)	13,022	(751)	532	(219)
Balance at January 1, 2018 (as adjusted)		₩ 34,004	₩ 3,603,587	₩ (6,026)	₩ (18,741)	₩ 415,565	₩ 4,028,389	₩ 434,316	₩ 4,462,704
Comprehensive income :									
Profit for the year		-	-	-	-	47,886	47,886	(31,997)	15,889
Foreign currency translation adjustments, net of tax		-	-	-	3,817	-	3,817	221	4,038
Share of other comprehensive loss of associates, net of tax		-	-	-	(36)	-	(36)	-	(36)
Gain (loss) on valuation of equity instruments at fair value through other comprehensive income		-	-	-	9,654	-	9,654	(2,784)	6,870
Gain on valuation of debt instruments at fair value through other comprehensive income		-	-	-	142	-	142	-	142
Remeasurement of employee benefits		-	-	-	(2,165)	-	(2,165)	(515)	(2,680)
Total comprehensive income for the year		-	-	-	11,411	47,886	59,297	(35,074)	24,223
Transactions with equity holders:									
Exercise of stock options	25,26	50	1,053	(228)	-	-	875	3,045	3,920
Share-based compensation	26	-	-	7,983	-	-	7,983	4,189	12,172
Proceeds from issuance of new shares		4,131	1,046,772	-	-	-	1,050,902	-	1,050,902
Conversion of convertible bonds	19,25	13	2,976	-	-	-	2,989	-	2,989
Cash dividends and distribution of investments		-	-	-	-	(10,050)	(10,050)	(3,420)	(13,470)
Change in ownership interest over subsidiaries		-	(3,534)	-	-	-	(3,534)	30,908	27,374
Merger with subsidiary		3,546	(3,310)	(236)	-	-	-	-	-
Change in scope of consolidation		-	-	-	-	-	-	56,343	56,343
Total transactions with equity holders		7,740	1,043,957	7,518	-	(10,050)	1,049,165	91,066	1,140,231
Balance at December 31, 2018		₩ 41,744	₩ 4,647,543	₩ 1,492	₩ (7,329)	₩ 453,400	₩ 5,136,851	₩ 490,307	₩ 5,627,158

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2018 and 2017

(in millions of Korean won)	Note	2018	2017
Cash flows from operating activities			
Cash generated from operations	35	₩ 608,033	₩ 362,297
Interest received		35,898	13,198
Interest paid		(11,532)	(3,400)
Dividend received		381	2,481
Income tax paid		(141,310)	(2,650)
Net cash inflow from operating activities		491,470	371,927
Cash flows from investing activities			
Increase in short-term financial instruments		(514,098)	(155,359)
Increase in long-term financial instruments		(38,432)	(126)
Purchase of property and equipment	17	(97,197)	(75,165)
Disposal of property and equipment	17	11,926	2,942
Purchase of intangible assets	18	(49,084)	(29,676)
Disposal of intangible assets	18	3,724	1,845
Acquisition of available-for-sale securities		-	(85,030)
Disposal of available-for-sale securities		-	22,401
Acquisition of financial assets at fair value through profit or loss		(60,769)	-
Disposal of financial assets at fair value through profit or loss		12,016	-
Acquisition of financial assets at fair value through other comprehensive income		(240,039)	-
Disposal of financial assets at fair value through other comprehensive income		1,486	-
Acquisition of associates	16	(155,618)	(48,316)
Disposal of associates	16	13,973	5,847
Acquisition of subsidiaries, net of cash acquired		(114,638)	8,852
Disposal of subsidiaries, net of cash acquired		(5,659)	-
Disposal of derivative financial assets		-	2,030
Increase in other financial assets		(2,419)	(3,620)
Decrease in other financial assets		4,768	-
Increase in other non-current financial assets		(14,997)	(7,913)
Decrease in other non-current financial assets		7,401	5,955
Increase in other non-current financial liabilities		-	692
Other cash outflow from investing activities		(23,066)	(29)
Net cash outflow from investing activities		(1,260,722)	(354,669)
Cash flows from financing activities			
Proceeds from short-term borrowings	19	33,053	452,163
Repayments of short-term borrowings	19	(172,403)	(653,770)
Repayments of long-term borrowings	19	(4,758)	(250)
Proceeds from long-term borrowings	19	7,987	-
Repayments of corporate bonds	19	-	(168)
Proceeds from issuance of new shares		1,050,902	-
Exercise of stock options		3,920	3,150
Payments of dividends		(12,044)	(16,000)
Acquisition of treasury shares		(236)	-
Acquisition of non-controlling interests		(226,963)	-
Distribution of investments		(1,426)	(3,724)
New shares issued by subsidiaries (to non-controlling interest shareholders)		212,509	686,204
Other cash outflow from financing activities		(24)	-
Net cash inflow from financing activities		₩ 890,517	₩ 467,605

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

Kakao Corp. and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2018 and 2017

(in millions of Korean won)	Note	2018	2017
Net increase in cash and cash equivalents		₩ 121,265	₩ 484,863
Effect of exchange rate changes on cash and cash equivalents		8,955	(9,714)
Cash and cash equivalents at the beginning of year		1,116,793	641,644
Cash and cash equivalents at the end of year		₩ 1,247,013	₩ 1,116,793

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

1. General Information

Kakao Corp. (the "Parent Company") has prepared the consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea ("Korean IFRS") 1110, *Consolidated Financial Statements*, and its consolidated subsidiaries include Daum Global Holdings and 92 entities.

1.1 The Company

General information about Kakao Corp. and its subsidiaries (collectively, the "Company") is as follows:

The Parent Company was incorporated in February 1995 and provides advertising services, contents offerings including Emoticons, games and music, and other online services through its online platforms.

The Parent Company was listed on the KOSDAQ market in Korea on November 9, 1999 and was transferred to the KOSPI market in Korea on July 10, 2017.

The Parent Company's headquarter is located in Youngpyong-dong, Jeju City, in Jeju Province, Korea. As at December 31, 2018, the Parent Company's share capital amounted to ₩ 41,744 million and the Parent Company's shareholders are as follows:

	Number of shares	Percentage of ownership (%)
Kim Bum Soo	12,514,461	15.0
K Cube Holdings Co., Ltd.	9,949,467	11.9
National Pension Service	6,010,705	7.2
MAXIMO PTE. LTD.	5,599,849	6.7
Star Invest Holdings Limited	2,777,986	3.3
Other related parties	1,762,522	2.1
Others	40,539,291	48.7
	79,154,281	94.9
Treasury shares	4,233,492	5.1
	83,387,773	100.00

Details of the consolidated subsidiaries as at December 31, 2018, are as follows:

(in millions of Korean won, except number of shares)

Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
Daum Global Holdings	₩ 2,529	Holding company	Korea	December 31	505,810	100.0
PATH MOBILE INC. PTE. LTD.	68,533	Service operations	Singapore	December 31	82,284,405	100.0
PT. PATH MOBILE INDONESIA[2]	8,518	Service operations	Indonesia	December 31	7,757,757	100.0
DK Service	511	Service operations	Korea	December 31	102,136	100.0
DK Techin	993	Service operations	Korea	December 31	198,605	100.0
DK Business	1,075	Service operations	Korea	December 31	214,934	100.0
Daum Service CHINA Co., Ltd.	1,093	Service operations	China	December 31	1	100.0
Daum Service CHINA YanJiao Co., Ltd. [3]	175	Service operations	China	December 31	1	100.0
ImageOn Corp.	1,786	Contents development	Korea	December 31	357,139	100.0
Buzzpia Company	194	Mobile services	Korea	December 31	38,878	100.0
Beijing KAKAO Co., Ltd.	20,483	Software development and services	China	December 31	18,839,700	99.9
Ultra Caption Corp.	28	Software development and services	Korea	December 31	5,600	100.0
Acciio Inc.	198	Software development and services	Korea	December 31	200,323	50.5
KIWI PLUS	1,860	Software development and sales	Korea	December 31	2,113,526	54.3
Kakao Commerce Corp.[1]	2,256	Wholesale and retail sales and services	Korea	December 31	22,562,293	100.0
Locnall Inc.	611	Software development and services	Korea	December 31	122,231	100.0
About-time	11	Software development and services	Korea	December 31	22,223	100.0
Linkage Lab	149	Services	Korea	December 31	20,000	100.0
MTECHCREW, INC.	50	Data processing business	Korea	December 31	10,000	100.0
KAKAO_CCVC Jeju Creative Economy Innovative Fund	2,000	Investment/Holding company	Korea	December 31	190	95.0
Kakao Makers Corp.	53	Software development and services	Korea	December 31	103,070	97.2
KAKAO Brain	205	Software development	Korea	December 31	400,000	97.3
KAKAO JAPAN Corp.	51,984	Software development and services	Japan	December 31	876,620	99.4
DK CORPORATION[4]	30	Telemarketing and information service and others	Japan	December 31	300	100.0
K-Style CORPORATION[5]	10	Telemarketing and information service and others	Japan	December 31	100	100.0
Web Assist CORPORATION[5]	1	Telemarketing and information service and others	Japan	December 31	10	100.0
ZUBON Inc.[4]	100	Electronic publication design, manufactures and sales and others	Japan	December 31	1,000	100.0
Kakao Investment Co., Ltd.	22,016	Investment/Holding company	Korea	December 31	2,201,614	100.0
K Venture Group[6]	100	Investment/Holding company	Korea	December 31	10,000	100.0
Kids Note Co., Ltd.[6]	117	Software development and services	Korea	December 31	29,700	100.0
TNK Factory[6]	1,633	Mobile advertisement platform operations	Korea	December 31	3,265,600	100.0
KVG SG PTE.LTD[6]	1,313	Holding company	Singapore	December 31	1,100,000	100.0
Pinplay[6]	4,375	Software development and services	Korea	December 31	496,964	56.8
Kakao Ventures Corp. (formerly, K CUBE VENTURES Co., Ltd.)	18,511	Holding company	Korea	December 31	3,702,216	100.0
K Cube Venture Fund no.1[7]	3,468	Investment/Holding company	Korea	December 31	210	60.6
KAKAO Venture Fund[7,30]	27,000	Investment/Holding company	Korea	December 31	110	36.7
Kakao digital contents Fund[7,30]	34,874	Investment/Holding company	Korea	December 31	150	43.1

(in millions of Korean won, except number of shares)

Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
Kakao Game Growth Share Fund[7]	30,000	Investment/Holding company	Korea	December 31	300	100.0
KAKAO IX Corp. (formerly, Kakao Friends Corp.)	1,600	Contents sales	Korea	December 31	160,000	100.0
KAKAO IX JAPAN Corp.[1,8]	2,522	Wholesale and retail sales	Japan	December 31	50,000	100.0
KAKAO IX CHINA Co.,LTD.[1,8]	3,083	Wholesale and retail sales	China	December 31	2,700,000	100.0
Kakao Page Corp. (formerly, Podotree Inc.)[31]	8,094	Software development and services	Korea	December 31	11,360,593	63.9
Kakao PAGE PTE. LTD. (formerly, Valuepotion Pte.LTD)[9]	825	Mobile marketing service	Singapore	December 31	985,443	100.0
SamyangCNC Co.,Ltd.[9]	50	Publishing and e-commerce	Korea	December 31	7,000	70.0
NeoBazar[9]	677	Software development and services	Korea	December 31	160,082	87.5
PT. Neo Bazar Indonesia[10]	1,814	Software development and services	Indonesia	December 31	1,597	99.8
DA'ON CREATIVE[9]	250	Publishing, video production, broadcasting communication and information service	Korea	December 31	33,081	66.2
Beijing Da Yun cultural Communication Co.,LTD.[11]	173	Electronic publication and services	China	December 31	200,000	100.0
J Comics[11]	10	Electronic publication and services	Korea	December 31	2,000	100.0
Kakao Games Corp.[31]	5,583	Game development and services	Korea	December 31	33,730,000	60.4
NGLE CORPORATION[12]	205	Game development and services	Korea	December 31	210,000	51.2
Friendsgames Co.,Ltd. (formerly, SuperNova11 Corp.)[12]	775	Game development and services	Korea	December 31	6,735,369	82.0
SONNORI CORP.[13]	200	Services	Korea	December 31	366,320	58.3
Toonnori Corp.[14]	510	Services	Korea	December 31	52,000	50.9
Kakao Games Europe B.V.[12]	1,296	Game development and services	Netherlands	December 31	1,000,000	100.0
Kakao Games USA. Inc.[15]	2,305	Game development and services	USA	December 31	500,000	100.0
Kakao Games Japan Copr.[1,12]	2,024	Game development and services	Japan	December 31	2,000,000	100.0
Kakao VX[12]	9,427	Service operations	Korea	December 31	1,885,333	89.8
TAESIK MAUMGOLF CO.,LTD.[16]	578	Service operations	China	December 31	1	100.0
GSWING SPORTING GOODS CO., LTD.[16]	574	Service operations	China	December 31	1	100.0
Kakao M Corp. (formerly, EN Company Co., Ltd)[1,17]	3,464	Manufactures and services	Korea	December 31	1,800,000	100.0
STARSHIP ENTERTAINMENT CORP.[18]	54	Entertainment management	Korea	December 31	7,000	64.8
HIGHLINE ENTERTAINMENT (formerly, House of Music)[19]	100	Entertainment management	Korea	December 31	154,000	77.0
PLAN A ENTERTAINMENT[18]	50	Entertainment management	Korea	December 31	10,000	100.0
E&T Story Entertainment[20]	25	Entertainment management	Korea	December 31	30,000	60.0
Fave Entertainment Co., Ltd.[18]	200	Entertainment management	Korea	December 31	32,000	80.0
Cre.ker Entertainment Co., Ltd.[18]	200	Entertainment management	Korea	December 31	32,000	80.0
Mun Hwa In Co., Ltd.[18]	148	Entertainment management	Korea	December 31	20,000	67.5
Krispy Studio Corporation[18]	380	Mobile video contents production	Korea	December 31	760,000	100.0
Nylon korea media[21]	790	Publication	Korea	December 31	103,871	65.7
Mega monsters[18]	13,700	Software development and services	Korea	December 31	24,400,000	89.1
J,WIDE-COMPANY[18]	50	Services	Korea	December 31	100,000	100.0
WIDE-S COMPANY[22]	50	Entertainment	Korea	December 31	7,000	70.0
READY ENTERTAINMENT[18]	400	Services	Korea	December 31	80,000	100.0
READY ENTERTAINMENT (Shanghai) CO., LTD.[23]	83	Entertainment	China	December 31	500,000	100.0
CASTING BOM[23]	100	Entertainment	Korea	December 31	20,000	100.0

(in millions of Korean won, except number of shares)

Subsidiaries	Share Capital	Primary Business	Location	Fiscal Year End	Number of shares	Percentage of ownership (%)
BH Entertainment[18]	500	Services	Korea	December 31	100,000	100.0
SOOP management[18]	1,410	Entertainment	Korea	December 31	280,200	99.4
Kakao Mobility Corp.[31]	2,394	Software development and services	Korea	December 31	16,590,000	69.3
Parking Square Inc.[24]	81	Software development and services	Korea	December 31	162,502	100.0
Kakaopay Corp.[31]	9,494	Software development and services	Korea	December 31	11,563,447	60.9
MOVILL Co,Ltd[25]	50	Software counsel development and supply	Korea	December 31	70,000	70.0
Kakao G Corp.[1]	10,065	Software development and services	Japan	December 31	10,000,000	100.0
Ground X Corp.[1,26]	605	Software development	Japan	December 31	10,000,000	100.0
Ground1 Corp.[1,27]	496	Wholesale and retail sales and e-commerce	Korea	December 31	10,000,000	100.0
PANZEA PTE. LTD.[1,26]	113	Software development	Singapore	December 31	1,027,000	100.0
KLAYTN PTE. LTD.[1,28]	11	Software development	Singapore	December 31	99,999	100.0
TIDESQUARE[30]	3,086	Telemarketing	Korea	December 31	178,284	28.9
Polarium CO. LTD.[29]	225	Services	Korea	December 31	23,000	51.1
SQAURE LAB[29]	1,240	Travel	Korea	December 31	186,000	75.0
CC Partners[29]	885	Services	Korea	December 31	145,323	82.2
NEXT INTERNATIONAL CO., LTD.[29]	410	Services	Korea	December 31	72,800	88.8
Playwings[29]	600	General travel	Korea	December 31	1,140,000	95.0

[1] Newly established in 2018.

[2] As a subsidiary of PATH MOBILE INC. PTE. LTD., the number of shares and the percentage of ownership represent PATH MOBILE INC. PTE. LTD.'s ownership as at December 31, 2018.

[3] As a subsidiary of Daum Service CHINA Co., Ltd., the number of shares and the percentage of ownership represent Daum Service CHINA Co., Ltd.'s ownership as at December 31, 2018.

[4] As a subsidiary of KAKAO JAPAN Corp., the number of shares and the percentage of ownership represent KAKAO JAPAN Corp.'s ownership as at December 31, 2018.

[5] As a subsidiary of DK CORPORATION, the number of shares and the percentage of ownership represent DK CORPORATION's ownership as at December 31, 2018.

[6] As a subsidiary of Kakao Investment Co., Ltd., the number of shares and the percentage of ownership represent Kakao Investment Co., Ltd.'s ownership as at December 31, 2018.

[7] As a subsidiary of Kakao Ventures Corp., the number of shares and the percentage of ownership represent Kakao Ventures Corp.'s ownership as at December 31, 2018.

[8] As a subsidiary of KAKAO IX Corp., the number of shares and the percentage of ownership represent KAKAO IX Corp.'s ownership as at December 31, 2018.

[9] As a subsidiary of Kakao Page Corp., the number of shares and the percentage of ownership represent Kakao Page Corp.'s ownership as at December 31, 2018.

[10] As a subsidiary of NeoBazar, the number of shares and the percentage of ownership represent NeoBazar's ownership as at December 31, 2018.

[11] As a subsidiary of DA'ON CREATIVE, the number of shares and the percentage of ownership represent DA'ON CREATIVE's ownership as at December 31, 2018.

[12] As a subsidiary of Kakao Games Corp., the number of shares and the percentage of ownership represent Kakao Games Corp.'s ownership as at December 31, 2018.

[13] As a subsidiary of Friendsgames Co., Ltd., the number of shares and the percentage of ownership represent Friendsgames Co.,Ltd.'s ownership as at December 31, 2018.

[14] As a subsidiary of SONNORI CORP., the number of shares and the percentage of ownership represent SONNORI CORP.'s ownership as at December 31, 2018.

[15] As a subsidiary of Kakao Games Europe B.V., the number of shares and the percentage of ownership represent Kakao Games Europe B.V.'s ownership as at December 31, 2018.

[16] As a subsidiary of Kakao VX, the number of shares and the percentage of ownership represent Kakao VX's ownership as at December 31, 2018.

[17] The pre-existing Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) merged with the Parent Company and Kakao M Corp. (formerly, EN Company Co., Ltd) was newly established in 2018.

[18] As a subsidiary of Kakao M Corp. (formerly, EN Company Co., Ltd), the number of shares and the percentage of ownership represent Kakao M Corp. (formerly, EN Company Co., Ltd)'s ownership as at December 31, 2018.

[19] As a subsidiary of STARSHIP ENTERTAINMENT CORP., the number of shares and the percentage of ownership represent STARSHIP ENTERTAINMENT CORP.'s ownership as at December 31, 2018.

[20] As a subsidiary of PLAN A ENTERTAINMENT, the number of shares and the percentage of ownership represent PLAN A ENTERTAINMENT's ownership as at December 31, 2018.

[21] As a subsidiary of Krispy Studio Corporation, the number of shares and the percentage of ownership represent Krispy Studio Corporation's ownership as at December 31, 2018.

[22] As a subsidiary of J,WIDE-COMPANY, the number of shares and the percentage of ownership represent J,WIDE-COMPANY's ownership as at December 31, 2018.

[23] As a subsidiary of READY ENTERTAINMENT, the number of shares and the percentage of ownership represent READY ENTERTAINMENT's ownership as at December 31, 2018.

[24] As a subsidiary of Kakao Mobility Corp., the number of shares and the percentage of ownership represent Krispy Kakao Mobility Corp.'s ownership as at December 31, 2018.

[25] As a subsidiary of Kakaopay Corp., the number of shares and the percentage of ownership represent Kakaopay Corp.'s ownership as at December 31, 2018.

[26] As a subsidiary of Kakao G Corp., the number of shares and the percentage of ownership represent Kakao G Corp.'s ownership as at December 31, 2018.

[27] As a subsidiary of Ground X Corp., the number of shares and the percentage of ownership represent Ground X Corp.'s ownership as at December 31, 2018.

[28] As a subsidiary of PANZEA PTE. LTD., the number of shares and the percentage of ownership represent PANZEA PTE. LTD.'s ownership as at December 31, 2018.

[29] As a subsidiary of TIDESQUARE, the number of shares and the percentage of ownership represent TIDESQUARE's ownership as at December 31, 2018.

[30] Classified as a subsidiary although the ownership is less than 50% as the Company is considered to have a control over the investees.

[31] In accordance with the agreements with non-controlling interests of some of the above subsidiaries, the Company should obtain a pre-approval from investors, when the Company wants to dispose of the investments in subsidiaries within the period specified in the agreements through a transfer to the third party or others methods not determined in the agreements such as exercise of tag-along right.

The reason why the aforementioned subsidiaries are newly included in consolidation for the year ended December 31, 2018, is as follows:

Subsidiaries	Reason
E&T Story Entertainment	Newly acquired
Nylon korea media	Newly acquired
Acciio Inc.	Newly acquired
JOH&Company	Reclassified to a subsidiary from an associate through additional acquisition
Kakao G Corp.	Newly established
Ground A Corp.	Newly established
Ground X Corp.	Newly established
Ground1 Corp.	Newly established
SamyangCNC Co., Ltd.	Newly acquired
luxi co.,ltd.	Newly acquired
KIWI PLUS	Newly acquired
Kakao Games Japan Corp.	Newly established
KAKAO IX JAPAN Corp.	Newly established
DK CORPORATION	Newly acquired
ZUBON Inc.	Newly acquired
K-Style CORPORATION	Newly acquired
Web Assist CORPORATION	Newly acquired
Kakao M Corp. (formerly, EN Company Co., Ltd)	Newly established
Pinplay	Newly acquired
J,WIDE-COMPANY	Reclassified to a subsidiary from an associate through additional acquisition
WIDE-S COMPANY	Newly acquired
READY ENTERTAINMENT	Reclassified to a subsidiary from an associate through additional acquisition
CASTING BOM	Newly acquired
READY ENTERTAINMENT(Shanghai) CO., LTD.	Newly acquired
BH Entertainment	Reclassified to a subsidiary from an associate through additional acquisition
SOOP management	Newly acquired
SONNORI CORP.	Reclassified to a subsidiary from an associate through additional acquisition
Toonnori Corp.	Reclassified to a subsidiary from an associate through additional acquisition
KAKAO IX CHINA Co., Ltd.	Newly established
NeoBazar	Reclassified to a subsidiary from an associate through additional acquisition
PT Neo Bazar Indonesia	Newly acquired
DA'ON CREATIVE	Newly acquired
Beijing Da Yun Cultural Communication Co., LTD.	Newly acquired
J Comics	Newly acquired
MOVILL Co,Ltd	Newly acquired
PANZEA PTE. LTD.	Newly established
KLAYTN PTE. LTD.	Newly established
Kakao Commerce Corp.	Newly established
TIDESQUARE[1]	Newly acquired
Playwings	Newly acquired
NEXT INTERNATIONAL CO., LTD.	Newly acquired
CC Partners	Newly acquired
SQAURE LAB	Newly acquired
Polarium CO., LTD.	Newly acquired

[1] Classified as a subsidiary although the ownership is less than 50% as the Company is considered to have

a control over the investees.

Status of subsidiaries excluded from consolidation for the year ended December 31, 2018, is as follows:

Company	Reason
Valuepotion Pte.LTD	Merged with Kakao Page Corp. (formerly, Podotree Inc.), a subsidiary
CARDOC Inc.	Reclassified to an associate from a subsidiary due to loss of control
Kakao Kids (formerly, BLUEPIN Inc.)	Reclassified to an associate from a subsidiary due to loss of control
Fixel Hub Co., Ltd.	Reclassified to an associate from a subsidiary due to loss of control
Pinplay	Reclassified to an associate from a subsidiary due to loss of control
Peoplug Inc.	Disposal of investments
KAKAO SINGAPORE PTE. Ltd.	Liquidation
JOH&Company	Merged with KAKAO IX Corp. (formerly, Kakao Friends Corp.), a subsidiary
Numberworks Inc.	Liquidation
Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.)	Merged with the Parent Company
HASYS	Reclassified to an associate from a subsidiary due to loss of control
luxi co.,ltd.	Merged with Kakao Mobility Corp., a subsidiary
Ultra Interactive, Inc.	Liquidation
Tangram Design Lab Inc.	Liquidation
Ground A Corp.	Disposal of investments

The summarized financial information for consolidated subsidiaries as at and for the year ended December 31, 2018, is as follows:

(in millions of Korean won)

	2018					
	Assets	Liabilities	Equity	Revenue	Profit (loss) for the year	Comprehensive income (loss)
Daum Global Holdings	₩ 593	₩ 117	₩ 476	₩ -	₩ (209)	₩ (209)
PATH MOBILE INC. PTE. LTD.	3,976	184	3,791	356	(12,177)	(12,263)
PT. PATH MOBILE INDONESIA	3,420	456	2,963	2,083	(2,761)	(2,719)
DK Service	2,175	2,003	172	13,349	(187)	(483)
DK Techin	2,292	1,394	898	12,235	47	13
DK Business	4,468	2,401	2,067	19,040	357	158
Daum Service CHINA Co., Ltd.	354	70	284	490	(94)	(94)
Daum Service CHINA YanJiao Co., Ltd.	955	115	840	3,809	202	185
ImageOn Corp.	2,450	358	2,091	3,611	(150)	(166)
Buzzpia Company	7,801	240	7,561	5	6,907	6,907
Beijing KAKAO Co., Ltd.	5,441	565	4,877	-	(708)	(723)
Ultra Caption Corp.	244	-	244	-	(17)	(17)
KAKAO JAPAN Corp.	97,569	13,453	84,116	55,659	(38,109)	(34,666)
Kids Note Co., Ltd.	2,347	2,487	(140)	4,028	377	377
TNK Factory	22,627	2,328	20,298	16,470	1,777	1,825
Kakao Ventures Corp.	23,371	1,043	22,328	3,569	923	923
K Cube Venture Fund no.1	36,109	99	36,010	-	14,205	16,592
KAKAO Venture Fund	22,653	440	22,213	-	(888)	(1,827)
Locnall Inc.	3,416	9,569	(6,153)	-	(283)	(285)

(in millions of Korean won)

	2018					
	Assets	**Liabilities**	**Equity**	**Revenue**	**Profit (loss) for the year**	**Comprehensive income (loss)**
KAKAO IX Corp. (formerly, Kakao Friends Corp.)	101,165	18,257	82,908	105,184	7,156	7,199
KAKAO PAGE PTE. LTD.(formerly, Valuepotion PTE. LTD.)	85	1,032	(947)	427	(323)	(337)
Kakao Games Corp.	478,427	75,893	402,534	343,581	17,199	9,045
NGLE CORPORATION	2,220	474	1,747	6,050	941	941
Friendsgames Co., Ltd. (formerly, SuperNova11 Corp.)	33,139	15,361	17,779	915	(5,919)	(5,919)
Kakao Games Europe B.V.	55,154	16,334	38,820	84,548	9,774	9,626
Kakao Games USA.Inc.	3,009	77	2,932	4,070	(354)	(222)
About-time	81	-	81	-	(12)	(12)
Kakao Page Corp. (formerly, Podotree Inc.)	257,809	48,012	209,797	184,071	3,109	2,958
Kakao digital contents Fund	24,786	210	24,576	-	(8,782)	(8,909)
Kakao Game Growth Share Fund	26,750	117	26,633	-	(5,604)	(9,437)
Linkage Lab	947	388	559	2,685	(118)	(118)
STARSHIP ENTERTAINMENT CORP.	31,056	16,016	15,040	7,713	679	679
PLAN A ENTERTAINMENT	10,789	2,540	8,249	1,535	(118)	(118)
MTECHCREW, INC.	1,743	458	1,285	5,543	31	31
Fave Entertainment Co., Ltd.	3,729	2,365	1,363	86	(386)	(392)
Cre.ker Entertainment Co., Ltd.	5,430	7,277	(1,847)	1,502	(420)	(430)
Mun Hwa In Co., Ltd.	1,929	1,268	660	1,238	(95)	(95)
Krispy Studio Corporation	2,121	547	1,574	132	(1,457)	(1,457)
Parking Square Inc.	386	53	333	1,032	(126)	(102)
KVG SG PTE.LTD.	1,266	-	1,266	-	(5)	22
KAKAO_CCVC Jeju Creative Economy Innovative Fund	2,568	12	2,556	-	522	595
Kakao Makers Corp.	16,284	6,418	9,866	53,675	4,191	4,183
KAKAO Brain	30,011	708	29,303	24	(8,003)	(8,148)
Kakao Investment Co., Ltd.	199,555	2,988	196,567	28	6,825	10,180
K Venture Group	914	10	904	-	(73)	(73)
Kakaopay Corp.	387,446	276,529	110,917	69,526	(93,483)	(93,534)
Kakao Mobility Corp.	261,465	21,572	239,893	53,369	(18,403)	(18,696)
Mega monsters	23,187	13,414	9,774	5,557	(385)	(385)
HIGHLINE ENTERTAINMENT (formerly, House of Music)	355	139	216	174	23	23
Kakao VX	37,427	18,351	19,076	30,013	(4,886)	(5,494)
GSWING SPORTING GOODS CO., LTD.	384	914	(530)	117	(285)	(277)
TAESIK MAUMGOLF CO.,LTD.	2,632	2,666	(34)	2,584	(205)	(202)
E&T Story Entertainment[1]	1,205	678	527	198	-	-
Nylon korea media[1]	495	391	103	614	29	29
Acciio Inc.[1]	3,485	882	2,603	-	(665)	(665)
Kakao G Corp[1]	20,176	11	20,165	-	(97)	(100)
SamyangCNC Co.,Ltd.[1]	8,160	5,454	2,706	11,086	1,980	1,980
KIWI PLUS[1]	10,210	3,351	6,859	5,029	(3,825)	(3,825)
Kakao Games Japan Corp.[1]	1,891	28	1,862	19	(161)	(162)
KAKAO IX JAPAN Corp.[1]	6,421	2,398	4,023	182	(835)	(829)
DK CORPORATION[1]	3,485	2,779	706	2,435	(49)	(39)
ZUBON Inc.[1]	75	85	(11)	53	(55)	(55)
K-Style CORPORATION[1]	149	14	136	-	2	4
Web Assist CORPORATION[1]	111	11	100	-	2	4
Kakao M Corp. (formerly, EN Company Co., Ltd)[1]	590,964	160,997	429,967	39,131	1,219	1,794
Pinplay[1]	16,992	1,352	15,641	8,911	(907)	(907)
BH Entertainment[1]	11,789	8,456	3,333	-	-	-
J,WIDE-COMPANY[1]	6,758	4,700	2,058	-	-	-

(in millions of Korean won)

	2018					
	Assets	**Liabilities**	**Equity**	**Revenue**	**Profit (loss) for the year**	**Comprehensive income (loss)**
READY ENTERTAINMENT[1]	15,952	6,954	8,998	-	-	-
SOOP management[1]	9,464	11,468	(2,005)	-	-	-
TIDESQUARE[1]	79,042	19,963	59,079	-	-	-
Polarium CO., LTD.[1]	1,932	1,318	615	-	-	-
SQAURE LAB[1]	987	785	202	-	-	-
CC Partners[1]	126	81	45	-	-	-
NEXT INTERNATIONAL CO., LTD.[1]	185	1	184	-	-	-
Playwings[1]	507	438	69	-	-	-
KAKAO IX CHINA Co.,Ltd.[1]	2,935	229	2,705	-	(348)	(377)
SONNORI CORP.[1]	902	12,617	(11,716)	-	-	-
Toonnori Corp.[1]	57	30	26	-	-	-
Ground X Corp.[1]	11,969	10	11,959	-	(196)	(202)
Ground1 Corp.[1]	4,668	1,248	3,420	-	(6,496)	(6,496)
NeoBazar[1]	6,471	3,250	3,221	-	-	-
PT.Neo Bazar Indonesia[1]	257	36	221	-	-	-
MOVILL Co,, LTD[1]	101	269	(168)	-	-	-
PANZEA PTE. LTD.[1]	1,092	31	1,061	-	(86)	(89)
KLAYTN PTE. LTD.[1]	142	33	109	-	(3)	(3)
WIDE-S COMPANY[1]	285	227	57	-	-	-
READY ENTERTAINMENT(Shanghai) CO.,LTD.[1]	184	312	(128)	-	-	-
CASTING BOM[1]	346	77	269	-	-	-
Kakao Commerce Corp.[1]	752,986	471,963	281,023	22,672	4,020	4,020
DA'ON CREATIVE[1]	3,251	2,007	1,244	-	-	-
Beijing Da Yun Cultural Communication Co.,LTD.[1]	164	-	164	-	-	-
J Comics[1]	39	14	25	-	-	-
	₩ 3,822,917	₩ 1,312,670	₩ 2,510,246	₩ 1,190,414	₩ (136,248)	₩ (141,268)

[1] The above table represents financial information since the acquisition date.

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of Preparation

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with Korean IFRS. The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Company's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Company have been prepared in accordance with Korean IFRS. International Financial Reporting Standards ("IFRS") have been adopted by the Korean Accounting Standards Board as Korean IFRS based on standards and interpretations published by the International Accounting Standards Board.

The preparation of the consolidated financial statements requires the use of certain critical accounting estimates. It also requires management to exercise judgment in the process of applying the Company's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in Accounting Policy and Disclosures

(a) New and amended standards adopted by the Company

The Company has applied the following standards and amendments from its annual reporting period commencing January 1, 2018.

- Amendment to Korean IFRS 1028 *Investments in Associates and Joint Ventures*

When an investment in an associate or a joint venture is held by, or is held indirectly through, an entity that is a venture capital organization, or a mutual fund, unit trust and similar entities including investment-linked insurance funds, the entity may elect to measure each investment separately at fair value through profit or loss in accordance with Korean IFRS 1109. The amendment does not have a significant impact on the consolidated financial statements because the Company is not a venture capital organization.

- Amendment to Korean IFRS 1040 *Transfers of Investment Property*

The amendment to Korean IFRS 1040 clarifies that a transfer to, or from, investment property, including property under construction, can only be made if there has been a change in use that is supported by evidence, and the list of evidence for a change of use in the standard was re-characterized as a non-exclusive list of example. The amendment does not have a significant impact on the consolidated financial statements.

- Amendment to Korean IFRS 1102 *Share-based Payment*

Amendments to Korean IFRS 1102 clarify accounting for a modification to the terms and conditions of a share-based payment that changes the classification of the transaction from cash-settled to equity-settled. Amendments also clarify that the measurement approach should treat the terms and conditions of a cash-settled award in the same way as for an equity-settled award. The amendment does not have a significant impact on the consolidated financial statements.

- Enactment of Interpretation 2122 *Foreign Currency Transaction and Advance Consideration*

According to the enactment, the date of the transaction for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income (or part of it) is the date on which an entity initially recognizes the non-monetary asset or non-monetary liability arising from the payment or receipt of advance consideration. The enactment does not have a significant impact on the consolidated financial statements.

- Korean IFRS 1109 *Financial Instruments*

The Company has applied Korean IFRS 1109 *Financial Instruments* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures have not been restated, and the differences between previous book values and book values at the date of initial application are recognized to retained earnings. See Note 40 for further details on the impact of the application of the standard.

- Korean IFRS 1115 *Revenue from Contracts with Customers*

The Company has applied Korean IFRS 1115 *Revenue from Contracts with Customers*. In accordance with the transition provisions in Korean IFRS 1115, comparative figures have not been restated. The Company elected the modified retrospective approach, and recognized the cumulative impact of initially applying the revenue standard as an adjustment to retained earnings (or equity) as at January 1, 2018, the period of initial application. See Note 40 for further details on the impact of the application of the standard.

(b) New standards and interpretations not yet adopted by the Company

Certain new accounting standards and interpretations that have been published that are not mandatory for annual reporting period commencing January 1, 2018 and have not been early adopted by the Company are set out below.

- Korean IFRS 1116 *Leases*

Korean IFRS 1116 *Leases* issued on May 22, 2017 is effective for annual periods beginning on or after January 1, 2019, with early adoption permitted. This standard will replace Korean IFRS 1017 *Leases*. The Company will apply the standards for annual periods beginning on or after January 1, 2019.

Under the new standard, with implementation of a single lease model, lessee is required to recognize assets and liabilities for all lease which lease term is over 12 months and underlying assets are not low value assets. A lessee is required to recognize a right-of-use asset and a lease liability representing its obligation to make lease payments.

The Company performed an impact assessment to identify potential financial effects of applying Korean IFRS 1116. The Company is analyzing the effects on the financial statements based on available information as at December 31, 2018 to identify effects on 2018 financial statements; however, it is difficult to provide reasonable estimates of financial effects until the analysis is complete.

- Korean IFRS 1109 *Financial Instruments*

The narrow-scope amendments made to Korean IFRS 1109 *Financial Instruments* enable entities to measure certain prepayable financial assets with negative compensation at amortized cost. When a modification of a financial liability measured at amortized cost that does not result in the derecognition, a modification gain or loss shall be recognized in profit or loss. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted.

- Amendments to Korean IFRS 1019 *Employee Benefits*

The amendments require that an entity shall calculate current service cost and net interest for the remainder of the reporting period after a plan amendment, curtailment or settlement based on updated actuarial assumptions from the date of the change. The amendments also require that a reduction in a surplus must be recognized in profit or loss even if that surplus was not previously recognized because of the impact of the asset ceiling. The amendments are effective for plan amendments, curtailments and settlements occurring in reporting periods that begin on or after 1 January 2019.

- Amendments to Korean IFRS 1028 *Investments in Associates and Joint Ventures*

The amendments clarify that an entity shall apply Korean IFRS 1109 to financial instruments in an associate or joint venture to which the equity method is not applied. These include long-term interests that, in substance, form part of the entity's net investment in an associate or joint venture. These amendments will be applied for annual periods beginning on or after January 1, 2019, with early adoption permitted. In accordance with the transitional provisions in Korean IFRS 1109, the restatement of the comparative information is not required and the cumulative effects of initially applying the amendments retrospectively should be recognized in the beginning balance of retained earnings (or other components of equity, as appropriate) at the date of initial application.

- Enactment to Interpretation of Korean IFRS 2123 *Uncertainty over Income Tax Treatments*

The Interpretation explains how to recognize and measure deferred and current income tax assets and liabilities where there is uncertainty over a tax treatment, and includes guidance on how to determine whether each uncertain tax treatment is considered separately or together. It also presents examples of circumstances where a judgement or estimate is required to be reassessed. This Interpretation will be applied for annual periods beginning on or after January 1, 2019, and an entity can either restate the comparative financial statements retrospectively or recognize the cumulative effect of initially applying the Interpretation as an adjustment in the beginning balance at the date of initial application.

- Annual Improvements to Korean IFRS 2015 – 2017 Cycle:

· Korean IFRS 1103 *Business Combination*

The amendments clarify that when a party to a joint arrangement obtains control of a business that is a joint operation, and had rights to the assets and obligations for the liabilities relating to that joint operation immediately before the acquisition date, the transaction is a business combination achieved in stages. In such cases, the acquirer shall remeasure its entire previously held interest in the joint operation. These amendments will be applied to business combinations for which the acquisition date is on or after the beginning of the first annual reporting period beginning on or after 1 January 2019, with early adoption permitted.

· Korean IFRS 1111 *Joint Agreements*

The amendments clarify that when a party that participates in, but does not have joint control of, a joint operation might obtain joint control of the joint operation in which the activity of the joint operation constitutes a business. In such cases, previously held interests in the joint operation are not remeasured. These amendments will be applied to transactions in which an entity obtains joint control on or after the beginning of the first annual reporting period beginning on or after 1 January 2019, with early adoption permitted.

- Paragraph 57A of Korean IFRS 1012 *Income Tax*

The amendment is applied to all the income tax consequences of dividends and requires an entity to recognize the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where the entity originally recognized those past transactions or events. These amendments will be applied for annual reporting periods beginning on or after January 1, 2019, with early adoption permitted.

- Korean IFRS 1023 *Borrowing Costs*

The amendments clarify that if a specific borrowing remains outstanding after the related qualifying asset is ready for its intended use (or sale), it becomes part of general borrowings. These amendments will be applied to borrowing costs incurred on or after the beginning of the first annual reporting period beginning on or after January 1, 2019, with early adoption permitted.

2.3 Consolidation

The Company has prepared the consolidated financial statements in accordance with Korean IFRS 1110, *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Parent Company has control. The Company controls the corresponding investee when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Consolidation of a subsidiary begins from the date the Company obtains control of a subsidiary and ceases when the Company loses control of the subsidiary.
The Company applies the acquisition method to account for business combinations. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are initially measured at their fair values at the acquisition date. The Company recognizes any non-controlling interest in the acquiree on an acquisition-by-acquisition basis in the event of liquidation, either at fair value or at the non-controlling interest's proportionate share of the recognized amounts of acquiree's identifiable net assets. All other non-controlling interests are measured at their acquisition-date fair values, unless another measurement basis is required by standards. Acquisition-related costs are expensed as incurred.

Goodwill is recognized as the excess of the aggregate of the consideration transferred, the amount of any non-controlling interest in the acquiree, and the acquisition-date fair value of the acquirer's previously held equity interest in the acquiree over the identifiable net assets acquired. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Balances of receivables and payables, income and expenses and unrealized gains on

transactions between the Parent Company and its subsidiaries are eliminated during the consolidation. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Company.

In transactions with non-controlling interest, which do not result in loss of control, the Company recognizes directly in equity any difference between the amount of the non-controlling interests and the fair value of the consideration paid or received, and attributes it to the owners of the Parent Company.

When the Company ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value and the different between its fair value and carrying amount is recognized in profit or loss.

(b) Associates

Associates are all entities over which the Company has significant influence, and investments in associates are initially recognized at acquisition cost using the equity method. Unrealized gains on transactions between the Company and its associates are eliminated to the extent of the Company's interest in the associates. If there is any objective evidence that the investment in the associate is impaired, the Company recognizes the difference between the recoverable amount of the associate and its book value as impairment loss.

(c) Joint arrangements

A joint arrangement, wherein two or more parties have joint control, is classified as either a joint operation or a joint venture. A joint operator has rights to the assets, and obligations for the liabilities, relating to the joint operation and recognizes the assets, liabilities, revenues and expenses relating to its interest in a joint operation. A joint venturer has rights to the net assets relating to the joint venture and accounts for that investment using the equity method.

2.4 Segment Reporting

Information of each operating segment is reported in a manner consistent with the business segment reporting provided to the chief operating decision maker (Note 6). The chief operating decision maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the steering committee that makes strategic decisions.

2.5 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Company's entities are measured using the currency of the primary economic environment in which the each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which

is the Parent Company's functional and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss. They are deferred in other comprehensive income if they relate to qualifying cash flow hedges and qualifying effective portion of net investment hedges, or are attributable to monetary part of the net investment in a foreign operation.

Foreign exchange gains and losses that relate to borrowings are presented in the statement of profit or loss, within finance costs. All other foreign exchange gains and losses are presented in the statement of profit or loss within 'other income or other expenses'.

Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities held at fair value through other comprehensive income are recognized in other comprehensive income.

(c) Translation into the presentation currency

The results of operations and financial position of the Company's entities that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- Assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period.
- Income and expenses for each statement of comprehensive income are translated at average rates; and
- Equity is translated at the historical exchange rate; and
- All resulting exchange differences are recognized in other comprehensive income.

2.6 Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits in banks, and other short-term highly liquid investments with original maturities of three months or less.

2.7 Financial Assets

(a) Classification

From January 1, 2018, the Company classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss
- those to be measured at fair value through other comprehensive income, and
- those to be measured at amortized cost.

The classification depends on the Company's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. The Company reclassifies debt investments when, and only when its business model for managing those assets changes.

For investments in equity instruments that are not held for trading, this will depend on whether the Company has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income.

(b) Measurement

At initial recognition, the Company measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether their cash flows are solely payment of principal and interest.

A. Debt instruments

Subsequent measurement of debt instruments depends on the Company's business model for managing the asset and the cash flow characteristics of the asset. The Company classifies its debt instruments into one of the following three measurement categories:

- Amortized cost: Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in

'finance income' using the effective interest rate method.

- Fair value through other comprehensive income: Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'other non-operating income or expenses' and impairment losses are presented in 'other non-operating expenses'.

- Fair value through profit or loss: Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of profit or loss within 'finance income and costs in the year in which it arises.

B. Equity instruments

The Company subsequently measures all equity investments at fair value. Where the Company's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment. Dividend income from such investments continue to be recognized in profit or loss as 'finance income' when the right to receive payments is established.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income and costs' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

(c) Impairment

The Company assesses on a forward looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables and lease receivables, the Company applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables.

(d) Recognition and Derecognition

Regular way purchases and sales of financial assets are recognized or derecognized on trade-date, the date on which the Company commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Company has transferred substantially all the risks and rewards of ownership.

If a transfer does not result in derecognition because the Company has retained substantially all the risks and rewards of ownership of the transferred asset, the Company continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Company classified the financial liability as “borrowings” in the consolidated statement of financial position (Note 19).

(e) Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the statements of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Company or the counterparty.

2.8 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value. Changes in the fair value of the derivatives that are not qualified for hedge accounting are recognized in the consolidated statement of comprehensive income as 'finance income (costs)' according to the nature of transactions.

2.9 Trade Receivables

Trade receivables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method, less loss allowance. Trade receivables are amounts due from customers for services performed in the ordinary course of business. If collection is expected in one year or less, they are classified as current assets. If not, they are presented as non-current assets. Long-term trade receivables classified as non-current asset are measured at the present value using the effective interest method.

2.10 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the average method.

2.11 Property and Equipment

Property and equipment are stated at its historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation on property and equipment, except land, is calculated using the straight-line method to allocate the difference between their cost and their residual values over their estimated useful lives, as follows:

	Estimated useful lives
Buildings	20 – 40 years
Structures	20 years
Machinery and equipment	4 – 6 years
Vehicles	4 – 6 years
Furniture	2 – 5 years

The depreciation method, residual values and useful lives of property and equipment are reviewed and adjusted at each financial year-end, if appropriate, accounted for as changes in accounting estimates.

2.12 Government Grants

Government grants are recognized at their fair values when there is reasonable assurance that the grant will be received and the Company will comply with the conditions attached to it. Government grants related to assets are presented by deducting the grants in arriving at the carrying amount of the assets, and grants recognized as income are deferred and presented by deducting the expenses related to the purpose of the government grants.

2.13 Intangible Assets

(a) Goodwill

Goodwill arises on the acquisition of subsidiaries, associates and business combination are included in intangible assets. Goodwill represents the excess of the cost of an acquisition over the fair value of the Company's share of the net identifiable assets of the acquired subsidiary, associates, joint ventures and businesses at the date of acquisition. If this consideration is lower than the fair value of the net assets of the subsidiary acquired, the difference is recognized in profit or loss.

Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Any impairment is recognized immediately as an expense and is not subsequently reversed.

For the purpose of impairment testing, goodwill acquired in a business combination is allocated

to each of the CGUs, or group of CGUs, that is expected to benefit from the synergies of the combination. Goodwill is monitored at the operating segment level. Goodwill impairment reviews are undertaken annually or more frequently if events or changes in circumstances indicate a potential impairment. The carrying amount of goodwill is compared to the recoverable amount, which is the higher of value in use and the fair value less costs to sell.

(b) Membership and brand

Membership and brand are regarded as intangible assets with indefinite useful life and not amortized because there is no foreseeable limit to the period over which the asset is expected to be utilized.

(c) Other intangible assets

Other intangible assets such as development costs and industrial property rights are initially recognized at its historical costs and amortized using the straight-line method over their estimated useful lives. Other intangible assets have definite useful life and are carried at cost less accumulated amortization.

Their estimated useful lives of other Intangible assets are as follows:

	Estimated useful lives
Industrial property rights	5 – 10 years
Others	2 – 15 years
Development costs	5 years
Exclusive rights	Contractual period

The Company recognizes the cryptocurrency at fair value of the consideration at the acquisition date as it is satisfied in the definition and recognition criteria of the asset. If there is a market in which the asset is traded at a frequency and a size sufficient to provide pricing information continuously, the cryptocurrency is evaluated at prices available in such market at the end of each reporting period, and gain on valuation is presented within 'other comprehensive income' and loss on valuation is recognized within 'other non-operating expenses'. In addition, non-marketable cryptocurrency is recognized at its acquisition cost.

2.14 Impairment of Non-financial Assets

Goodwill or intangible assets with indefinite useful lives are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. Non-financial assets, other than goodwill, that suffered

impairment are reviewed for possible reversal of the impairment at each reporting date.

2.15 Financial Liabilities

(a) Classification and measurement

The Company's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Company classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables and other payables' and 'borrowings' in the statement of financial position.

Preferred shares that require mandatory redemption at a particular date are classified as liabilities. Interest expenses on these preferred shares using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized from other financial liabilities.

(b) Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified. The difference between the carrying amount of a financial liability extinguished or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

2.16 Provisions

Provisions for service warranties, make good obligation, and legal claims are recognized when the Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.17 Current and Deferred Income Tax

Income tax expense for the period consists of current and deferred tax. Income tax is recognized as income or expense for the period in the consolidated statement of comprehensive income,

except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, income tax is also recognized in other comprehensive income or directly in equity, respectively. Income tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting period.

Deferred tax is recognized for temporary differences arising between the tax bases of assets and liabilities and their carrying amounts as expected tax consequences at the recovery or settlement of the carrying amounts of the assets and liabilities. However, deferred tax assets and liabilities are not recognized if they arise from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit (loss).

Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences can be utilized.

Deferred tax liability is recognized for taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint ventures, except to the extent that the Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, deferred tax assets are recognized for deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2.18 Employee Benefits

(a) Post-employment benefits

The Company operates pension plans. The Company has both defined contribution plans and defined benefit plans.

A defined contribution plan is a pension plan under which the Company pays fixed contributions into a separate entity. The contributions are recognized as employee benefit expenses when an employee has rendered service.

A defined benefit plan is a pension plan that is not a defined contribution plan. Typically defined benefit plans define an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair

value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds and that have terms to maturity approximating to the terms of the related pension obligation. The remeasurement of the net defined benefit liability are recognized in other comprehensive income.

If any plan amendments, curtailments, or settlements occur, past service costs or any gains or losses on settlement are recognized as profit or loss for the year.

(b) Share-based payments

Equity-settled share-based payments granted to employees are estimated at fair value of equity instruments at the grant date and recognized as employee benefit expenses over the vesting period. The number of equity instruments expected to vest is remeasured with consideration to non-market vesting conditions at the end of the reporting period, with any changes from the original measurement recognized in profit or loss for the year and equity.

When the options are exercised, the Company issues new shares. The proceeds received, net of any directly attributable transaction costs, are recognized as capital stock (nominal value) and capital surplus.

(c) Other long-term employee benefits

The Parent Company and certain subsidiaries provide long-term employee benefits, which are entitled to employees with service period for at least three years. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Company recognizes service cost, net interest on other long-term employee benefits and remeasurement as profit or loss for the year. These liabilities are valued annually by independent and qualified actuaries.

2.19 Treasury shares

Where the Company purchases its own equity share capital (treasury shares), the consideration paid, including any directly attributable incremental costs is deducted from equity attributable to the Company's equity until the shares are cancelled or reissued. Where such treasury shares are subsequently reissued, any consideration received is recognized in equity attributable to the Company's shareholders.

2.20 Revenue Recognition

From January 1, 2018, the Company has applied Korean IFRS 1115 *Revenue from Contracts with Customers.*

(a) Advertising revenue

The Company generally provides advertising services to a customer during the period of a contract and recognizes the allocated transaction price for a performance obligation over the period of service as revenue. However, in the case of a contract in which advertising services are settled based on the sum of the total number of advertising services provided other than the contracted period, the Company recognizes revenue when it satisfies its performance obligation.

(b) Contents revenue and others

The Company provides a variety of contents to a customer. Transaction prices of contents and others are immediately paid when a customer purchases contents and other online. The Company recognizes revenue at the time when contents are used as considered that the right to use contents and others is transferred and the contents and others are provided to a customer and there are no unfulfilled obligations of a customer that may affect the use of contents. For contents that have significant impacts on contents over the life of contents provided to a customer, revenue is recognized over the period over which contents are provided.

2.21 Dividend

Dividend to the Company's shareholders is recognized as a liability in the consolidated financial statements in the year in which the dividends are approved by the Company's shareholders.

2.22 Lease

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Company are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

Leases where the Company, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables.

If the Company is a lessor, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership at the inception of the lease. A lease other than a

finance lease is classified as an operating lease. Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred by the lessor in negotiating and arranging an operating lease is added to the carrying amount of the leased asset and recognized as an expense over the lease term on the same basis as the lease income.

2.23 Earnings per share

Basic earnings per share is calculated by dividing net profit for the year available to ordinary shareholders by the weighted-average number of ordinary shares outstanding during the year. Diluted earnings per share are calculated using the weighted-average number of ordinary shares outstanding adjusted to include the potentially dilutive effect of ordinary equivalent shares outstanding.

2.24 Business Combinations between entities under a Common Control

Book value method applies to a business combination under a common control. Related assets and liabilities are measured at book value of the consolidated financial statements. In addition, the difference between the sum of book values of the assets and liabilities transferred and the consideration paid is recognized as share premium.

2.25 Compound Financial Instruments

Compound financial instruments are convertible bonds that can be converted into equity instruments of the Parent Company at the option of the holder and exchangeable bond that can be converted into equity instruments of the subsidiary at the option of the holder.

The liability component of a compound financial instrument is recognized initially at the fair value of a similar liability that does not have equity conversion rights and exchange rights. The equity component is recognized initially on the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Any directly attributable transaction costs are allocated to the liability and equity components in proportion to their initial carrying amounts.

In accordance with the Interpretation Statements No.00094 issued by the Financial Supervisory Service in Korea, the Company recognized conversion rights and exchange rights (pre-emptive rights) as equity. This accounting treatment is applicable within Korean IFRS as defined in item1 of paragraph1 of Article 13 of Acts on External Audit for Stock Companies.

During the year ended December 31, 2018, the above exchangeable bond is changed to convertible bonds which can be converted into equity instruments of the Parent Company (Note 19).

2.26 Approval of Issuance of the Financial Statements

The issuance of the December 31, 2018 financial statements of the Company was approved by the Board of Directors on February 28, 2019, which is subject to change with approval at the annual shareholders' meeting.

3. Critical Accounting Estimates and Assumptions

The Company makes estimates and assumptions concerning the future. The estimates and assumptions are continuously evaluated with consideration to factors such as events reasonably predictable in the foreseeable future within the present circumstance according to historical experience. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

(a) Estimated impairment of goodwill

The Company tests annually whether goodwill has suffered any impairment. The recoverable amounts of cash-generating units are determined based on value-in-use calculations (Note 18).

(b) Income taxes

The Company's taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain (Note 22).

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System For Recirculation of Corporate Income*, the Company is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Company's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

(c) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Company uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 5).

(d) Impairment of financial assets

The provision for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Company uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Company's past history, existing market conditions as well as forward looking estimates at the end of each reporting period (Note 39).

(e) Provisions

As at December 31, 2018, the Company recognizes provisions as explained in Notes 2.16. These provisions are estimated based on past experience.

(f) Net defined benefit liabilities

The present value of net defined benefit liabilities depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 20).

(g) Other long-term employee benefits liabilities

The present value of other long-term employee benefits liabilities depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 21).

4. Financial Risk Management

4.1 Financial Risk Factors

The Company's activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Company's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Company's financial performance.

4.1.1 Market risk

i) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty caused by fluctuations in interest rates.

As at December 31, 2018, if the market interest rate of floating rate deposits had increased/decreased by 100bp with other variables held constant, the effect on profit before income tax for the year ended December 31, 2018, would have been increased/decreased by ₩ 9,090 million (2017: ₩ 4,821 million) due to increased/decreased interest income of floating rate deposits.

ii) Price risk

The Company invests in debt and equity securities for managing liquidity, operational needs and others. The Company's investment portfolio consists of direct and indirect investments in listed and non-listed securities.

As at December 31, 2018, if all other variables were constant and the value of marketable equity indexes had increased or decreased by 5.0%, gain and loss on valuation of equity securities at fair value (before income tax) and other comprehensive income (before income tax) would have been increased or decreased by ₩ 4,201 million (2017: ₩ 1,557 million).

Impacts of investment financial instruments of the Company on profit or loss and other comprehensive income are described in Note 9.

iii) Foreign exchange risk

Foreign exchange risk is defined as the risk that the fair value of financial instruments or future cash flows fluctuate because of changes in foreign exchange rates. Foreign exchange risk arises from financial instruments presented in currencies other than functional currency. Therefore, foreign exchange risk does not arise from non-monetary financial instruments or financial instruments presented in functional currency.

The Company's exposure to foreign currency risk at the end of the reporting period, expressed in Korean won, was as follows:

(in millions of Korean won)	**2018**			
Financial assets				
Cash and cash equivalents	₩ 48,542	₩ 527	₩ 889	₩ 72
Short-term financial instruments	338,894	-	-	-
Long-term financial instruments	1,125	-	-	-
Trade receivables	13,277	1,095	1,984	6
	₩ 401,838	₩ 1,621	₩ 2,873	₩ 78
Financial liabilities				
Trade and other payables	₩ 7,551	₩ 190	₩ 435	₩ 74
	₩ 7,551	₩ 190	₩ 435	₩ 74

If the Korean won has weakened/strengthened by 5% with all other variables held constant, the effect on profit before income tax for the year ended December 31, 2018, would have been increased/decreased by ₩ 19,908 million.

4.1.2 Credit risk

Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks or financial institutions, as well as credit exposures to customers, including outstanding receivables (Note 39).

Details of the Company's level of maximum exposure to credit risk as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		2018		2017
Cash and cash equivalents	₩	1,247,013	₩	1,116,793
Short-term financial instruments		924,215		394,152
Trade receivables		193,669		179,238
Derivative financial assets		1,174		53,650
Financial assets at fair value through profit or loss		36,812		-
Other current financial assets		207,656		134,343
Long-term financial instruments		50,689		10,685
Other non-current financial assets		58,321		39,879
	₩	2,719,549	₩	1,928,740

4.1.3 Liquidity risk

Cash flow forecasting is performed by the Company finance department. The Company finance department monitors rolling forecasts of the Company's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Company does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. Such forecasting takes into consideration the Company's debt financing plans, covenant compliance, compliance with internal statement of financial position ratio targets and, if applicable external regulatory or legal requirements.

Details of the Company's liquidity risk analysis as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018			
	Less than 1 year	Between 1 and 2 years	Over 2 years	Total
Trade and other payables	₩ 460,813	₩ -	₩ -	₩ 460,813
Short-term and long-term borrowings[1]	611,849	3,900	43,661	659,410
Other current financial liabilities	174,313	-	-	174,313
Other non-current financial liabilities	-	-	45,461	45,461
Non-current trade and other payables	-	-	915	915
	₩ 1,246,975	₩ 3,900	₩ 90,038	₩ 1,340,913

[1] For convertible bonds and exchangeable bonds, total cash flow is disclosed with the contractual early repayment date as maturity.

(in millions of Korean won)	2017			
	Less than 1 year	Between 1 and 2 years	Over 2 years	Total
Trade and other payables	₩ 280,380	₩ -	₩ -	₩ 280,380
Short-term and long-term borrowings	181,488	585,479	41,175	808,142
Other current financial liabilities	42,247	-	-	42,247
Other non-current financial liabilities	-	-	45,537	45,537
Non-current trade and other payables	-	196	1,411	1,607
	₩ 504,115	₩ 585,675	₩ 88,122	₩ 1,177,913

The table above analyses the Company's non-derivative financial liabilities into relevant maturity. The amounts disclosed in the table are the contractual undiscounted cash flows.

The amount of total cash flow of convertible bonds and exchangeable bonds is disclosed with the date of early payment of contract as maturity.

4.2. Capital Risk Management

The Company's objectives when managing capital are to maintain an optimal capital structure. The Company monitors financial ratios such as debt-to-capital ratio, which is calculated by dividing total liabilities by total equity.

The debt-to-capital ratios as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
Total liabilities (A)	₩ 2,332,385	₩ 1,886,506
Total equity (B)	5,627,158	4,462,923
Debt-to-capital ratio (A/B)	41.45%	42.27%

4.3. Offsetting Financial Assets and Financial Liabilities

Details of the Company's recognized financial assets subject to offsetting, enforceable master netting arrangements or similar agreements as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018				
	Gross assets	Gross liabilities offset	Net amounts presented in the statement of financial position	Amounts not offset	Net amount
Trade receivables[1]	₩ 45,258	₩ 6,776	₩ 38,481	₩ -	₩ 38,481

[1] The amount presented includes the amount after offsetting trade receivables from media labs

and agency fee.

(in millions of Korean won)	2017				
	Gross assets	**Gross liabilities offset**	**Net amounts presented in the statement of financial position**	**Amounts not offset**	**Net amount**
Trade receivables[1]	₩ 50,409	₩ 5,689	₩ 44,720	₩ -	₩ 44,720

[1] The amount presented includes the amount after offsetting trade receivables from media labs and agency fee.

5. Fair Value

5.1 Fair Value of Financial Instruments

Carrying amount and fair value of financial instruments as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018		2017	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
Financial assets				
Cash and cash equivalents	₩ 1,247,013	₩ 1,247,013	₩ 1,116,793	₩ 1,116,793
Short-term financial instruments	924,215	924,215	394,152	394,152
Long-term financial instruments	50,689	50,689	10,685	10,685
Available-for-sale securities[1]	-	-	149,440	149,440
Financial assets at fair value through profit or loss	130,627	130,627	-	-
Financial assets at fair value through other comprehensive income	329,345	329,345	-	-
Trade receivables	193,669	193,669	179,238	179,238
Derivative financial assets	1,174	1,174	53,650	53,650
Other current financial assets	207,656	207,656	134,343	134,343
Other non-current financial assets	58,321	58,321	39,879	39,879
	3,142,709	3,142,709	2,078,180	2,078,180
Financial liabilities				
Trade and other payables	460,813	460,813	280,380	280,380
Non-current trade and other payables	915	915	1,607	1,607
Short-term borrowings	609,480	605,039	174,372	174,372
Long-term borrowings	44,995	44,995	620,808	628,944
Derivative financial liabilities	13,916	13,916	2,254	2,254
Other current financial liabilities	174,313	174,313	42,247	42,247
Other non-current financial liabilities	45,461	45,461	45,537	45,537
	₩ 1,349,894	₩ 1,345,453	₩ 1,167,205	₩ 1,175,341

[1] As at December 31, 2017, certain equity securities, which are measured at cost since their quoted market price does not exist in an active market and their fair values cannot be measured reliably, are excluded.

5.2 Financial Instruments Measured at Cost

Available-for-sale securities measured at cost as at December 31, 2017, are as follows:

(in millions of Korean won)	**2017**
Daum Soft	₩ 327
Lunosoft Inc.	1,250
NURIDA Corporation	200
SM Contents Investment, Inc.	1,000
GAIA BROADCASTING CONTENTS INVESTMENT FUND	500
ROOF FUNDING	1,400
BUNJANG Corp. (formerly, Quicket Co., Ltd.)	1,500
Zipdoc	833
B-bros Corp.	2,000
MERLOT Lab.	1,294
Others	397
	₩ 10,700

5.3 Fair Value Hierarchy

The Company classifies fair value measurements using a fair value hierarchy that reflects the significance of the inputs used in measurements.

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date (Level 1).
- All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability (Level 2).
- Unobservable inputs for the asset or liability (Level 3).

Fair value hierarchy classifications of the financial assets and liabilities that are measured at fair value as at December 31, 2018 and 2017:

(in millions of Korean won)	**2018**			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at fair value through profit or loss	₩ 32,069	₩ -	₩ 98,558	₩ 130,627
Financial assets at fair value through other comprehensive income	6,111	-	323,234	329,345
Derivative financial assets	-	-	1,174	1,174
	₩ 38,180	₩ -	₩ 422,966	₩ 461,146
Derivative financial liabilities	₩ -	₩ -	₩ 13,916	₩ 13,916

(in millions of Korean won)	2017			
	Level 1	**Level 2**	**Level 3**	**Total**
Available-for-sale securities	₩ 32,969	₩ -	₩ 116,471	₩ 149,440
Derivative financial assets	-	-	53,650	53,650
	₩ 32,969	₩ -	₩ 170,121	₩ 203,090
Derivative financial liabilities	₩ -	₩ -	₩ 2,254	₩ 2,254

5.4 Valuation Technique and Inputs

The fair value of financial instruments traded in active markets is based on quoted market prices at the statement of financial position date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, a company in the same industry, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by the Company is the current bid price. These instruments are included in Level 1. Instruments included in Level 1 consist primarily of KOSPI and KOSDAQ equity investments classified as trading securities or available-for-sale.

The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined by using valuation techniques. These valuation techniques maximize the use of observable market data where it is available and rely as little as possible on entity specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in Level 2.

If one or more of the significant inputs is not based on observable market data, the instrument is included in Level 3.

As at December 31, 2018, valuation technique and the inputs used for recurring and non-recurring fair value measurements and disclosed fair value that are categorized within Level 3 of the fair value hierarchy are as follows:

(in millions of Korean won)	**Fair value**	**Level**	**Valuation technique**	**Inputs**
Equity instruments at fair value through profit or loss				
NEPTUNE Corp. (convertible bond)	₩ 5,350	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
Lionheart Studio (redeemable convertible preferred shares)	5,134	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
Daeheung Co., Ltd. (convertible bond)	4,245	3	Binomial tree model	Discount rate, dividend rate, increase and decrease rate
KIF–Stonebridge IT Venture Fund	578	3	Net asset value method	Net asset value
TransLink Capital Partners II, L.P.	2,949	3	Net asset value method	Net asset value
TransLink Capital Partners III, L.P	5,660	3	Net asset value method	Net asset value
Collaborative Fund II, L.P.	3,534	3	Net asset value method	Net asset value
Altos Korea opportunity Fund	17,510	3	Net asset value method	Net asset value
Strong Seed Fund I	664	3	Net asset value method	Net asset value
SMCI Fund7	940	3	Net asset value method	Net asset value
KDBC FP Tech Next Fund	1,118	3	Net asset value method	Net asset value

Enlight 4 NJI fund		146	3	Net asset value method	Net asset value
Cooperative of Music Record Duplicators		8	3	Net asset value method	Net asset value
SMCI Fund6		702	3	Net asset value method	Net asset value
GAIA BROADCASTING CONTENTS INVESTMENT FUND		1,000	3	Net asset value method	Net asset value
LEO Fund 10		581	3	Net asset value method	Net asset value
Union Global Expedition Investment Fund		600	3	Net asset value method	Net asset value
Highup Entertainment		1,292	3	DCF	Estimated cash flow, discount rate
EnGIS Technologies, Inc.		1,500	3	DCF	Estimated cash flow, discount rate
Eqity-linked derivative financial assets		20,031	3	Market value method	Market value
Others		25,015	3	Binominal tree method and others	Discount rate, increase and decrease rate, estimated cash flow and others
Total	₩	98,558			
Debt instruments at fair value through other comprehensive income					
MEDIACRE8 (formerly, Mediacreate)	₩	4,000	3	DCF	Estimated cash flow, discount rate
Lunosoft Inc.		625	3	DCF	Estimated cash flow, discount rate
NURIDA Corporation		200	3	DCF	Estimated cash flow, discount rate
XLGAMES Inc.		7,317	3	DCF	Estimated cash flow, discount rate
Japan Taxi		15,083	3	DCF	Estimated cash flow, discount rate
KRAFTON, Inc.(formerly, Bluehole Inc.)[1]		55,153	3	DCF	Estimated cash flow, discount rate
Others		6,971	3	DCF	Estimated cash flow, discount rate
Daum Soft		327	3	Net asset value method	Net asset value
Quber Co., Ltd.		346	3	Net asset value method	Net asset value
SEOUL MEDIA.INC.		30	3	Net asset value method	Net asset value
FEENTERTAINMENT		104	3	Net asset value method	Net asset value
Others		27	3	Net asset value method	Net asset value
Others		644	3	Binominal tree method and others	Discount rate, increase and decrease rate, estimated cash flow and others
KakaoBank of Korea Corp.		232,409	3	FCFE	Estimated free cash flow, discount rate
Total	₩	323,234			
Derivative financial assets					
Option (KakaoBank of Korea Corp.)	₩	957	3	Binominal tree method	Probability of risk neutral, increase in risk neutral, decrease in risk neutral
Right for redemption (NBT Inc.)		217	3	Binominal tree method	Probability of risk neutral, increase in risk neutral, decrease in risk neutral
	₩	1,174			
Derivative financial liabilities					
Conversion right (Kakao VX)	₩	7,601	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
Right for convertible redemption (Friendsgames Co., Ltd.)		6,315	3	Binominal tree method, DCF	Discount rate, increase and decrease rate, estimated cash flow
	₩	13,916			

[1] Available-for-sale securities and derivative financial assets (conversion right and early redemption right) of ₩ 3,970 million and ₩ 53,432 million, recognized in relation to redeemable convertible preferred shares, issued by KRAFTON, Inc. (formerly, Bluehole Inc.) as at December 31, 2017, were classified as financial assets at fair value through profit or loss on January 1, 2018 and were reclassified as financial assets at fair value through other comprehensive income as shares owned were converted into ordinary shares through exercise of conversion right.

5.5 Valuation Processes for Fair Value Measurements Categorized Within Level 3

The financial division of the Company performs the fair value measurements required for financial reporting purposes, including level 3 fair values. This division reports to the Chief Financial Officer ("CFO") and the Audit Committee, and discusses valuation processes and results with CFO and Audit Committee at least once every quarter depending on the materiality.

The results of the sensitivity analysis for the effect on profit or loss (before income tax) or other comprehensive income (before income tax) from changes in fair value (1%) for each financial instrument for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	Favorable changes	Unfavorable changes
Financial assets at fair value through profit or loss	₩ 1,306	₩ (1,306)
Financial assets at fair value through other comprehensive income	3,293	(3,293)
Derivative financial assets	12	(12)
	₩ 5,070	₩ (5,070)
Derivative financial liabilities	₩ 139	₩ (139)
	₩ 139	₩ (139)

6. Segment Information

The Company is operated as a single operating segment.

Breakdown of the Company's revenue for the years ended December 31, 2018 and 2017, is as follows:

(in millions of Korean won)	2018			
	Advertising	**Contents**	**Others**	**Total**
Revenue	₩ 686,401	₩ 1,362,290	₩ 677,667	₩ 2,726,358
Inter-company revenue	(16,594)	(152,820)	(139,952)	(309,366)
Net revenue	₩ 669,807	₩ 1,209,470	₩ 537,715	₩ 2,416,992

(in millions of Korean won)	2017			
	Advertising	**Contents**	**Others**	**Total**
Revenue	₩ 605,177	₩ 1,081,580	₩ 470,758	₩ 2,157,515
Inter-company revenue	(9,447)	(96,106)	(79,635)	(185,188)
Net revenue	₩ 595,729	₩ 985,474	₩ 391,123	₩ 1,972,326

For the years ended December 31, 2018 and 2017, the Company's most of the revenue arise in Korea, and most of non-current assets held by the Company as December 31, 2018 and 2017 are located in Korea.

There was no external customer contributing more than 10% of the total revenue for the years ended December 31, 2018 and 2017.

7. Financial Instruments by Category

Carrying amounts of financial assets and liabilities by category as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Financial assets at fair value through profit or loss[1]	₩	130,627	₩	-
Financial assets at fair value through other comprehensive income[1]		329,345		-
Available-for-sale financial assets[1]		-		160,140
Financial assets at amortized costs				
Cash and cash equivalents		1,247,013		1,116,793
Trade receivables, net		193,669		179,238
Short-term financial instruments		924,215		394,152
Long-term financial instruments		50,689		10,685
Other current financial assets		207,656		134,343
Other non-current financial assets		58,321		39,879
		2,681,563		1,875,090
Derivative financial assets				
Current derivative financial assets[1]		1,174		53,650
	₩	3,142,709	₩	2,088,880

[1] Available-for-sale securities and derivative financial assets (conversion right and early redemption right) of ₩ 3,970 million and ₩ 53,432 million, recognized in relation to redeemable convertible preferred shares, issued by KRAFTON, Inc. (formerly, Bluehole Inc.) as at December 31, 2017, were classified as financial assets at fair value through profit or loss on January 1, 2018 and were reclassified as financial assets at fair value through other comprehensive income as shares owned were converted into ordinary shares through exercise of conversion right.

(in millions of Korean won)		**2018**		**2017**
Financial liabilities at amortized costs				
Trade and other payables	₩	460,813	₩	280,380
Short-term borrowings		609,480		174,372
Other current financial liabilities		174,313		42,247
Non-current trade and other payables		915		1,607
Long-term borrowings		44,995		620,808
Other non-current financial liabilities[1]		45,461		45,537
		1,335,978		1,164,951
Derivative financial assets				
Current derivative financial assets		13,916		2,254
		13,916		2,254
	₩	1,349,894	₩	1,167,205

[1] As at December 31, 2018, the Company recognized non-controlling interests in association with maturity as financial liabilities (₩ 43,046 million) and reclassified non-controlling interests of ₩ 44,897 million as financial liabilities on the comparative 2017 consolidated financial statements.

Gains or losses of financial instruments by category for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)

	2018				
	Gain (loss) on valuation (other comprehensive income (loss))	Gain (loss) on valuation/disposition (profit or loss)	Interest income (expenses)/ Dividend income	Impairment loss	Gain (loss) on foreign currency translation
Financial assets					
Financial assets at fair value through profit or loss	₩ -	₩ 7,401	₩ 381	₩ -	₩ -
Financial assets at fair value through other comprehensive income	9,251	(272)	-	-	1
Loans and receivables	-	-	41,783	(6,641)	22,628
Derivative assets	-	988	-	-	-
Financial liabilities					
Derivative liabilities	-	(732)	-	-	-
Financial liabilities at amortized costs	-	-	(9,202)	-	(205)

(in millions of Korean won)

	2017			
	Gain (loss) on valuation (other comprehensive income (loss))	Gain (loss) on valuation/disposition (profit or loss)	Interest income (expenses)/ Dividend income	Gain (loss) on foreign currency translation
Financial assets				
Available-for-sale financial assets	₩ (1)	₩ (1,256)	₩ 2,481	₩ -
Loans and receivables	-	(2,034)	14,589	(13,460)
Derivative assets	-	51,738	-	-
Financial liabilities				
Financial liabilities at fair value through profit or loss	-	(13,253)	-	-
Financial liabilities carried at amortized costs	-	-	(11,240)	10

8. Cash and Cash Equivalents, Short-term and Long-term Financial Instruments and Restricted Financial Instruments

Cash and cash equivalents comprise cash on hand, demand deposits and short-term, highly liquid investments that are readily convertible to known amounts of cash which are subject to an insignificant risk of changes in value, and are used by the Company in management of its short-term commitments.

Details of cash and cash equivalents and short-term and long-term financial instruments as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Bank deposits and cash on hand and others	₩	1,247,013	₩	1,116,793
Short-term financial instruments[1]		924,215		394,152
Long-term financial instruments – time deposits and others		50,689		10,685
	₩	2,221,917	₩	1,521,630

[1] See Note 36 for information about restricted deposits and payment guarantees.

The credit quality of financial assets that are neither past due nor impaired can be assessed by reference to external credit ratings (if available) or to historical information about counterparty default rates.

Cash and cash equivalents are all deposited in the financial institutions with high credit ratings.

9. Financial Assets at Fair Value

As explained in Note 2, the Company has applied Korean IFRS 1109 *Financial Instruments* from January 1, 2018. See Note 40 for the impact of the changes in accounting policies on the classification of financial assets and financial statements.

(a) Financial assets at fair value through profit or loss

Financial assets mandatorily measured at fair value through profit or loss include the following classes of financial assets:

(in millions of Korean won)		**2018**
Non-current		
Beneficiary securities	₩	36,925
Listed shares		31,637
NEPTUNE Corp.		31,552

(in millions of Korean won)		**2018**
Non-current		
Mr. Blue Corporation		52
SHOWBOX Corp.		33
Compound financial instruments		36,285
		104,846
Current		
Beneficiary securities		1,073
Listed shares		432
Compound financial instruments		24,276
		25,781
	₩	130,627

The amounts recognized in profit or loss are as follows:

(in millions of Korean won)		**2018**
Gain on disposal of financial assets at fair value through profit or loss	₩	7,174
Gain on valuation of financial assets at fair value through profit or loss		228

(b) Financial Assets at Fair Value through Other Comprehensive Income

As explained in Note 2, the Company has applied Korean IFRS 1109 *Financial Instruments* from January 1, 2018. See Note 40 for the impact of the changes in accounting policies on the classification of financial assets and financial statements.

Equity investments at fair value through other comprehensive income comprise the following individual investments:

(in millions of Korean won)		**2018**
Non-current		
Listed equity securities	₩	6,111
YD ONLINE CORP.		982
FNC ENTERTAINMENT		5,129
Unlisted equity securities[1]		323,234
	₩	329,345

[1] See Note 5 for details of unlisted equity securities.

Upon disposal of these equity investments, any balance within the accumulated other comprehensive income for these equity investments is reclassified to retained earnings and is not

reclassified to profit or loss.

Debt investments at fair value through other comprehensive income comprise the following investments in bonds having solely payments of principal and interest:

(in millions of Korean won)	**2018**	**2017**[1]
Non-current		
Government bonds	₩ -	₩ 1,813

[1] In the prior year, government bonds were classified as available-for-sale securities.

Upon disposal of these debt investments, any balance within the accumulated other comprehensive income for these debt investments is reclassified to profit or loss.

10. Available-for-sale Securities

Changes in available-for-sale securities for the year ended December 31, 2017 are as follows:

(in millions of Korean won)	**2017**
Beginning balance	₩ 93,182
Increase due to changes in scope of consolidation	749
Acquisition	85,030
Transfer	4,329
Disposal	(13,904)
Valuation	(1)
Impairment	(9,753)
Amortization	509
Ending balance	₩ 160,140

Details of available-for-sale securities as at December 31, 2017, are as follows:

(in millions of Korean won)	**2017**
	Book value
Equity securities	
Daum Soft[1]	₩ 327
2010 KIF–Stonebridge IT Venture Fund	859
Mediacreate	3,402
TransLink Capital Partners II, L.P.	4,440
TransLink Capital Partners III, L.P.	4,075
Collaborative Fund II, L.P.	2,972
Altos Korea opportunity Fund	5,487
Strong Seed Fund I	1,168

SMCI Fund 7		988
Quber Co., Ltd.		201
KakaoBank of Korea Corp.[3]		66,786
YD ONLINE CORP.[2]		6,086
Epipolar		-
Lunosoft Inc.[1]		1,250
NURIDA Corporation[1]		200
LONGTU KOREA Inc.		-
Momo Corp[1]		100
Eugene Jarang Private Equity Securities Investment Trust No. 2		22
FNC ENTERTAINMENT[2]		4,817
SEOUL MEDIA.INC.[1]		30
FEENTERTAINMENT [1]		104
Cooperative of Music Record Duplicators[1]		8
Stonebridge Drama Fund		-
SM Contents Investment, Inc.[1]		1,000
GAIA BROADCASTING CONTENTS INVESTMENT FUND[1]		500
EVERSPIN CORP.		-
ROOFFUNDING[1]		1,400
FUNDA[1]		2
Zipdoc[1]		833
B-bros Corp.[1]		2,000
MERLOT Lab.[1]		1,294
Supergene Global Services, Inc.[1]		3
Ubion CO.LTD[2]		22
LG Chem.[2]		18
SM ENTERTAINMENT Co., Ltd.[2]		62
NEPTUNE Corp.[2]		20,129
MARS AUTO INC.[1]		150
Others		22,124
		152,857
Debt securities		
Government bonds		1,813
KRAFTON, Inc. (formerly, Bluehole Inc.)[4]		3,970
Convertible bonds-Leferi Inc.[5]		-
Convertible bonds-ROOF FUNDING[6]		-
Convertible bonds-Wex 24 Korea[5]		-
Convertible bonds- You Are the Designer[5]		-
Convertible bonds-BUNJANG Corp. (formerly, Quicket Co., Ltd.)[1]		1,500
		7,283
	₩	160,140

[1] Securities are measured at cost as the fair value cannot be measured reliably. The Company does not have any plans to dispose of the equity securities in the near future. These instruments will be measured at fair value when the Company can develop a reliable estimate of the fair value.

[2] Listed equity securities
[3] As at December 31, 2017, the Company has a call option and put option agreement with other shareholders of KakaoBank of Korea Corp (Note 36).
[4] The Company has recognized convertible rights and early redeemable rights associated with redeemable convertible preferred shares as separate derivative assets from the host contract (Note 24).
[5] Converted and reclassified as investments in associates during 2017.
[6] Converted and reclassified as equity securities during 2017.

11. Trade Receivables, Other Financial Assets and Other Non-current Financial Assets

As explained in Note 2, the Company has applied Korean IFRS 1109 *Financial Instruments* from January 1, 2018. See Note 40 for the impact of the changes in accounting policies on the classification of financial assets and consolidated financial statements.

Trade receivables and allowance for doubtful accounts as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Trade receivables	₩	201,238	₩	187,000
Less: allowance for doubtful accounts (Note 39)		(7,568)		(7,762)
Trade receivables, net	₩	193,669	₩	179,238

Details of other financial assets and other non-current financial assets as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Non-trade receivables	₩	204,271	₩	130,287
Accrued revenues		9,132		3,247
Short-term loans receivable		3,142		2,921
Short-term loans to employees		134		754
Long-term loans receivable		2,521		1,389
Leasehold deposits		56,183		38,918
Long-term loans to employees		17		-
Others		-		-
		275,401		177,517
Less: allowance for doubtful accounts		(9,425)		(3,295)
Other financial assets and other non-current financial assets, net	₩	265,976	₩	174,222

See Note 39 for the impairment of trade receivables, other financial assets and other non-current financial assets at amortized cost and the Company's exposure to credit risk.

12. Contract Assets and Liabilities

As explained in Note 2, the Company has applied Korean IFRS 1115 *Revenue from Contracts with Customers* from January 1, 2018. See Note 40 for the impact of the changes in accounting policies on the classification of financial assets and consolidated financial statements.

Details of incremental costs (other current assets), contract assets (other current assets) and contract liabilities (other current liabilities), recognized in relation to contracts with customers, as at December 31, 2018 and January 1, 2018, are as follows:

(in millions of Korean won)	**December 31, 2018**	**January 1, 2018**
Contract assets		
Contract assets – advertising	₩ -	₩ -
Contract assets – contents	391	1,485
Contract assets – others	261	-
	653	1,485
Incremental costs		
Incremental costs – contents[1]	3,819	2,747
Contract liabilities		
Contract liabilities – advertising	33,721	30,562
Contract liabilities – contents	123,461	75,349
Contract liabilities - others	8,786	1,588
	₩ 165,968	₩ 107,499

[1] As at December 31, 2018, the Company recognized the amount of ₩ 3,819 million as an asset for incremental costs of game publishing contracts.

Significant changes in incremental costs and contract liabilities

Contract liabilities of the Company consist of deferred income from the settlement amount for paid game goods that were not used and permanent items as at the end of the reporting period and incremental costs are the capitalized fees paid to the open market (app market) in connection with the aforementioned settlement amount for paid game goods.

Compared to the beginning of the current period, incremental costs and contract liabilities as at December 31, 2018, have increased due to the increase in the amount of payments made for unused game goods and permanent items and it has not increase significantly.

Expenses recognized in relation to incremental costs and revenue recognized in relation to contract liabilities

The following table shows how much of the revenue and expenses recognized in the current reporting period relates to carried-forward incremental costs and contract liabilities and how much

relates to performance obligations that were satisfied in a prior year.

(in millions of Korean won)		**2018**
Expenses recognized that was included in the contract liability balance at the beginning of the year		
Incremental costs (Other current assets) - contents	₩	2,747
Revenue recognized that was included in the contract liability balance at the beginning of the year		
Contract liabilities - advertising		30,324
Contract liabilities – contents		69,768
Contract liabilities – others		1,588
	₩	101,679

Classification of revenue from contracts with customers

(in millions of Korean won)		**2018**
Timing of revenue recognition		
At a point in time	₩	1,731,483
Over a period		685,509
	₩	2,416,992

13. Trade and Other payables

Trade and other payables as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Trade and other payables				
Trade payables	₩	29,359	₩	108,265
Non-trade payables		431,454		172,115
		460,813		280,380
Non-current trade and other payables				
Long-term non-trade payables		389		1,513
Withhold deposits received		-		60
Leasehold deposits received		526		34
		915		1,607
	₩	461,728	₩	281,986

14. Other Financial Liabilities

Other financial liabilities as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		2018		2017
Other current financial liabilities				
Accrued expenses	₩	44,424	₩	42,247
Deposits received		129,889		-
		174,313		42,247
Other non-current financial liabilities				
Long-term accrued expenses and others[1]		45,461		45,537
	₩	219,774	₩	87,784

[1] As at December 31, 2018, the Company recognized non-controlling interests in association with maturity as financial liabilities (₩ 43,046 million) and reclassified non-controlling interests of ₩ 44,897 million as financial liabilities on the comparative consolidated financial statements in 2017.

15. Other Assets and Liabilities

Other assets as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		2018		2017
Other current assets				
Advance payments	₩	107,872	₩	70,936
Prepaid expenses[1]		37,119		20,703
Prepaid value added tax		75,901		1,143
Corporate tax refund receivable		1,883		476
Others		830		-
		223,605		93,258
Other non-current assets				
Long-term advance payments		8,499		270
Long-term prepaid expenses		7,813		8,419
Other investments		100		100
		16,412		8,789
	₩	240,017	₩	102,047

[1] Increment costs for contracts amounting to ₩ 3,819 million as at December 31, 2018, are included (Note 12).

Other liabilities as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Other current liabilities				
Advances from customers[1]	₩	505,403	₩	256,665
Deferred revenues[1]		68,437		65,448
Withholdings		32,793		59,723
Value added tax payable		98,801		42,717
Government grants		565		-
	₩	705,998	₩	424,553

[1] Contract liabilities of ₩ 165,968 million as at December 31, 2018, are included (Note 12).

16. Investments in Associates and Joint Venture

Investments in associates and joint venture as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**				**2017**
Name[1]	**Location**	**Percentage of ownership (%)**	**Acquisition cost**	**Net assets value**	**Book value**	**Book value**
Associates						
Adcredit[3]	Korea	17.7	₩ 300	₩ 112	₩ 112	₩ 92
DMS Network, Inc.[3]	USA	19.7	2,357	109	-	-
Tapas Media, Inc.	USA	27.2	2,101	177	177	2,999
NBT Inc.[3]	Korea	10.5	1,782	2,246	2,246	2,012
DAUM Venture Fund	Korea	39.5	8,024	7,925	7,925	8,656
Dunamu Inc.	Korea	22.4	5,019	57,402	61,717	33,376
Oscar Entertainment.	Korea	20.0	1,997	39	15	745
CNT TECH CO., LTD. [3]	Korea	18.0	5,001	4,471	6,457	5,994
Korea Credit Data	Korea	31.3	4,400	1,464	4,776	4,658
MannaCEA	Korea	23.8	10,000	5,319	5,319	3,835
NeoBazar [2]	Korea	-	-	-	-	738
Left Right Co., Ltd.	Korea	40.0	400	(3)	224	291
SCI VENTURE, INC.	Philippines	40.0	1,239	558	1,170	1,293
SONNORI CORP.[2]	Korea	-	-	-	-	3,767
JOH&Company [2]	Korea	-	-	-	-	8,673
You Are the Designer[3]	Korea	19.2	500	(690)	-	-
LUXROBO CO., LTD. [3]	Korea	14.7	5,287	1,441	5,298	5,222
Leferi Inc.[3]	Korea	11.0	1,500	260	260	171
Deleo Korea Co., Ltd.[3]	Korea	10.5	3,000	759	759	807
Tangram Factory	Korea	32.6	-	864	-	-
Skelter Labs, Inc.[3]	Korea	17.9	2,501	1,222	2,044	2,658
TOROOC Inc.	Korea	22.7	2,500	600	744	2,400
Dreamcide SPC LTD.	Korea	49.0	5	(4)	-	4
DIGISONIC CO., LTD.[3]	Korea	12.9	100	75	76	83
Silver Star Games Inc.[7]	Korea	20.0	100	4	-	-
D&C MEDIA CO.,LTD.[1,3]	Korea	18.5	12,614	6,843	14,475	16,291
K Cube NEO Fund[3]	Korea	15.5	2,250	1,972	1,974	711
BUNJANG Corp.[3]	Korea	14.7	203	49	247	958
Supergene Inc.[3]	Korea	10.0	997	1,229	1,229	994
InnoSignal CO., LTD.[3]	Korea	15.9	100	87	162	86
PoteNit Co., Ltd.[3]	Korea	12.1	2,096	(363)	-	2,000

(in millions of Korean won)

Name[1]	Location	2018 Percentage of ownership (%)	2018 Acquisition cost	2018 Net assets value	2018 Book value	2017 Book value
Associates						
Doctorbrain SPC Ltd.	Korea	49.0	5	(8)	-	2
CLAIR, Inc.[3]	Korea	3.4	500	681	681	500
KIF-Kakao Wooribank Technology Financing Fund[3]	Korea	19.7	7,800	7,554	7,554	3,000
13MILE.CO.LTD[5]	Korea	26.4	3,435	177	2,945	-
ADSOTA CORP.[5]	Vietnam	33.3	1,080	564	1,419	-
CARDOC Inc.[6]	Korea	30.0	5,481	4,100	4,100	-
Kakao Kids (formerly, BLUEPIN Inc.)[6]	Korea	44.3	2,794	8,215	8,215	-
Action Square Co., Ltd.[1,3,5]	Korea	10.4	20,000	1,425	3,807	-
NOWBUSKING COMPANY[3]	Korea	16.2	3,000	564	2,724	-
LINE WORK Corp.	Korea	35.5	3,000	735	3,002	-
CHEQUER Inc.	Korea	24.2	400	76	376	-
HASYS[6]	Korea	47.2	17,729	2,688	17,133	-
mycelebs[3,5]	Korea	17.7	5,000	(965)	5,000	-
DAIWAON. C. I. INC[3,5]	Korea	19.8	15,048	2,216	15,048	-
Haksan Publinshing Co., Ltd.[3,5]	Korea	19.8	14,653	3,582	14,653	-
peoplefund[3,5]	Korea	10.3	3,836	480	3,836	-
SEOUL MEDIA.INC.[5]	Korea	22.2	10,000	2,997	10,000	-
Allstay Co., Ltd.[5]	Korea	38.3	1,424	-	1,424	-
UBCARE CO., LTD.[3]	Korea	19.97	42,000	20,570	45,856	-
Others (63 companies)[4]	Korea	3.3~33.3	42,290	10,116	35,905	44,820
			275,848	159,932	301,085	157,834
Joint Venture						
DAUM KAKAO PHILIPPINES CORP.	Philippines	50.0	5,609	4,103	4,103	4,115
			₩ 281,458	₩ 164,035	₩ 305,188	₩ 161,950

[1] All investments in associates and joint venture are all unlisted securities excluding Action Square Co., Ltd., UBCARE CO., LTD. and D&C MEDIA CO., LTD.

[2] As the Company obtained control over the entities in 2018, the entities are reclassified as subsidiaries from investments in associates.

[3] Although the Company holds less than 20% of equity shares, the Company is considered to have a significant influences as the Company holds voting power to participate in the investee's board of directors.

[4] Small-sized entities invested into by K Cube Venture Fund no.1, KAKAO Venture Fund, Kakao Digital Contents Fund, Kakao Game Growth Share Fund and KAKAO_CCVC Jeju Creative Economy Innovative Fund with the ownership percentage of 3.3%~33.3% and classified as associates as the Company is considered to have a significant influence.

[5] Newly acquired during 2018.

[6] Reclassified to an associate from a subsidiary due to loss of control.

[7] Liquidated during 2018.

Changes in carrying amounts of investments in associates and joint venture for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)

	2018							
Name	**Beginning balance**	**Changes in scope of consolidation**	**Acquisition**	**Disposal and impairment**	**Gain (loss) on valuation of equity-method investments**	**Share in other comprehensive income (loss) of associates**	**Others**	**Ending balance**
Associates								
Adcredit	₩ 92	₩ -	₩ -	₩ -	₩ 20	₩ -	₩ -	₩ 112
Tapas Media, Inc.[2,3]	2,999	-	-	(2,344)	(738)	143	117	177
NBT Inc.	2,012	-	-	-	234	-	-	2,246
DAUM Venture Fund	8,656	-	-	(791)	3	57	-	7,925
Dunamu Inc.[2]	33,376	-	570	(2,195)	28,883	448	635	61,717
Oscar Entertainment	745	-	-	-	(706)	-	(23)	15
CNT TECH CO.,LTD.	5,994	-	-	-	472	(9)	-	6,457
Korea Credit Data[2]	4,658	-	-	-	(241)	-	359	4,776
MannaCEA[2]	3,835	-	-	-	(1,357)	(307)	3,148	5,319
NeoBazar[1,2]	738	(3,850)	-	-	(1,382)	-	4,495	-
Left Right CO., LTD..	291	-	-	-	(67)	-	-	224
SCI VENTURE INC.[2]	1,293	-	-	-	(11)	(98)	(14)	1,170
SONNORI CORP.[1,7]	3,767	(5,929)	-	-	(1,626)	-	3,788	-
JOH&Company[1]	8,673	(13,334)	-	-	(582)	-	5,243	-
LUXROBO CO., LTD..[2,3]	5,222	-	-	-	(1,193)	(2)	1,271	5,298
Leferi Inc.	171	-	-	-	88	-	-	260
Deleo Korea Co.,Ltd.[2]	807	-	-	-	(244)	-	196	759
Skelter Labs, Inc.[2]	2,658	-	-	-	(2,475)	-	1,862	2,044
TOROOC Inc.	2,400	-	-	-	(1,655)	-	-	744
Dreamcide SPC Ltd.	4	-	-	-	(4)	-	-	-
DIGISONIC Co., Ltd.	83	-	-	-	(8)	-	-	76
D&C MEDIA CO., LTD.[2]	16,291	-	-	-	785	(123)	(2,478)	14,475
K Cube NEO Fund[7]	711	-	1,500	-	(237)	-	-	1,974
BUNJANG Corp.	958	-	-	(571)	(123)	(17)	-	247
Supergene Inc.	994	-	-	-	235	-	-	1,229
InnoSignal Co., Ltd.[2]	86	-	-	-	3	-	72	162
PoteNit Co.,Ltd.[2,7]	2,000	-	96	-	(1,931)	(87)	(77)	-
Doctorbrain SPC Ltd.	2	-	-	-	(2)	-	-	-
CLAIR, Inc.[2]	500	-	-	-	75	-	106	681
KIF-Kakao Wooribank Technology Financing Fund[7]	3,000	-	4,800	-	(246)	-	-	7,554
13MILE.CO., LTD[4]	-	-	3,435	-	(490)	-	-	2,945
ADSOTA CORP.[4]	-	-	1,080	-	156	183	-	1,419
CARDOC Inc.[2,5]	-	5,481	-	-	(739)	-	(642)	4,100
Kakao Kids (formerly, BLUEPIN Inc.)[2,5]	-	2,794	-	-	(310)	296	5,436	8,215

(in millions of Korean won)

Name	Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
2018								
Associates								
Action Square Co., Ltd.[2,3,4]	-	-	20,000	(15,168)	(992)	57	(90)	3,807
WAY2BIT[4,8]	-	-	2,990	(2,990)	-	-	-	-
NOWBUSKING COMPANY[4]	-	-	3,000	-	(276)	-	-	2,724
LINE WORK Corp.[4]	-	-	3,000	-	2	-	-	3,002
CHEQUER Inc.[4]	-	-	400	-	(34)	10	-	376
READY ENTERTAINMENT[4]	-	(4,761)	4,761	-	467	-	(467)	-
BH Entertainment[4]	-	(8,100)	8,100	-	364	-	(364)	-
J,WIDE-COMPANY[4]	-	(2,550)	2,550	-	(174)	-	174	-
HASYS[5]	-	17,729	-	-	(598)	2	-	17,133
mycelebs[4]	-	-	5,000	-	-	-	-	5,000
DAIWAON. C. I. INC[4]	-	-	15,048	-	-	-	-	15,048
Haksan Publinshing Co.Ltd.[4]	-	-	14,653	-	-	-	-	14,653
easi6 Inc.[4]	-	-	700	(700)	-	-	-	-
peoplefund[4]	-	-	3,836	-	-	-	-	3,836
SEOUL MEDIA.INC.[4]	-	-	10,000	-	-	-	-	10,000
Allstay Co., LTD[4]	-	1,424	-	-	-	-	-	1,424
UBCARE CO., LTD.	-	-	42,000	-	-	-	3,856	45,856
Others[2,6] (63 companies)	44,820	1,977	8,098	(18,959)	(6,707)	(63)	6,739	35,905
Joint Venture								
DAUM KAKAO PHILIPPINES CORP.	4,115	-	-	-	12	(25)	-	4,103
	₩ 161,950	₩ (9,118)	₩ 155,618	₩ (43,718)	₩ 6,652	₩ 465	₩ 33,340	₩ 305,188

[1] As the Company obtained control over the entity in 2018, the entities are reclassified as subsidiaries from investments in associates.
[2] Others include gain or loss on disposal from changes in percentage of ownership with maintaining significant influence during 2018.
[3] During 2018, the Company recognized impairment loss for investments in Action Square Co., Ltd. and other nineteen associates amounting to ₩ 36,744 million as their recoverable amounts are considered less than their book values as at December 31, 2018.
[4] Newly acquired during 2018.
[5] Reclassified to an associate from a subsidiary due to loss of control.
[6] Newly acquired n42 corp. and other nine associates in 2018.
[7] Additionally acquired during 2018.
[8] Disposed during 2018.

(in millions of Korean won)

Name	2017 Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Reclassification	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
Associates									
Adcredit	₩ 83	₩ -	₩ -	₩ -	₩ -	₩ 8	₩ -	₩ -	₩ 92
DMS Network, Inc.	-	-	-	-	-	-	-	-	-
Tapas Media, Inc.[2]	2,656	-	-	-	-	(678)	(337)	1,358	2,999
NBT Inc.	1,719	-	-	-	-	292	-	-	2,012
DAUM Venture Fund	9,764	-	-	(1,581)	-	540	(68)	-	8,656
Dunamu Inc.[2]	4,439	-	-	-	-	24,683	-	4,255	33,376
Oscar Entertainment	1,997	-	-	-	-	(1,253)	-	-	745
CNT TECH CO.,LTD.	5,894	-	-	-	-	108	(8)	-	5,994
Korea Credit Data[5]	400	-	4,000	-	-	(72)	-	330	4,658
MannaCEA[2, 3]	8,591	-	-	(5,390)	-	(1,527)	-	2,160	3,835
NeoBazar[2]	478	-	-	-	-	(108)	-	368	738
Silver Star Games Inc.[3]	104	-	-	(104)	-	-	-	-	-
Left Right Co., Ltd.	373	-	-	-	-	(81)	-	-	291
SCI VENTURE INC.	655	-	578	-	-	(62)	122	-	1,293
SONNORI CORP.	5,635	-	-	-	-	(1,869)	-	-	3,767
JOH&Company	9,793	-	-	-	-	(1,121)	-	-	8,673
You Are the Designer[7]	75	-	-	-	389	(462)	(1)	-	-
LUXROBO Co., Ltd.[7]	-	-	2,287	-	3,000	(179)	-	114	5,222
Leferi Inc.[3, 7]	638	-	-	(1,220)	862	(108)	-	-	171
Deleo Korea Co.,Ltd.[2, 3, 7]	1,158	-	-	(2,090)	1,842	(97)	-	(6)	807
HASYS[1]	3,438	(3,438)	-	-	-	-	-	-	-
Tangram Design Lab Inc.[1, 3, 4]	-	(135)	2,337	(1,676)	-	(526)	-	-	-
Tangram Factory[2, 3, 4]	-	-	3,168	(864)	-	(291)	-	(2,012)	-
Skelter Labs, Inc.[2, 5]	-	-	2,501	-	-	(453)	-	610	2,658
TOROOC Inc.[5]	-	-	2,500	-	-	(68)	-	(32)	2,400
Nexzen I&C Co., Ltd.	200	-	-	(200)	-	-	-	-	-
Dreamcide SPC Ltd.[5]	-	-	5	-	-	(1)	-	-	4
DIGISONIC Co., Ltd.[2, 5]	-	-	100	-	-	(22)	-	5	83
D&C MEDIA CO.,LTD.[5]	-	-	12,614	-	-	692	-	2,985	16,291
K Cube NEO Fund[5]	-	-	750	-	-	(39)	-	-	711
BUNJANG Corp. (formerly, Quicket Co., Ltd.)	-	-	3,678	(797)	-	38	-	(1,962)	958
Supergene Inc.[5]	-	-	997	-	-	(2)	-	-	994
InnoSignal Co.,Ltd.[5]	-	-	100	-	-	(14)	-	-	86
PoteNit Co.,Ltd.[5]	-	-	2,000	-	-	-	-	-	2,000
Doctorbrain SPC Ltd.[5]	-	-	5	-	-	(3)	-	-	2

(in millions of Korean won)

Name	2017								
	Beginning balance	Changes in scope of consolidation	Acquisition	Disposal and impairment	Reclassification	Gain (loss) on valuation of equity-method investments	Share in other comprehensive income (loss) of associates	Others	Ending balance
Associates									
CLAIR, Inc.[5]	-	-	500	-	-	-	-	-	500
KIF-Kakao Wooribank Technology Financing Fund[5]	-	-	3,000	-	-	-	-	-	3,000
Others[6] (60 companies)	54,288	-	9,533	(13,902)	-	(8,287)	(314)	3,502	44,820
Joint Venture									
DAUM KAKAO PHILIPPINES CORP.	4,698	-	-	-	-	(1)	(582)	-	4,115
	₩ 117,076	₩ (3,572)	₩ 50,652	₩ (27,825)	₩ 6,093	₩ 9,036	₩ (1,188)	₩ 11,677	₩ 161,950

[1] As the Company obtained control over the entity in 2017, the entities are reclassified as subsidiaries from investments in associates.
[2] Others include gain or loss on disposal from changes in percentage of ownership with maintaining significant influence during 2017.
[3] During 2017, the Company recognized impairment loss for investments in MannaCEA and other five associates amounting to ₩ 13,858 million as their recoverable amounts are considered less than their book values as at December 31, 2017.
[4] During 2017, the Company acquired 10,809 ordinary shares of Tangram Design Lab Inc. and 130,179 ordinary shares of Tangram Factory through investment in kind with loans receivable.
[5] Newly acquired during 2017.
[6] Newly acquired Perseus and other 29 associates in 2017.
[7] Reclassified from long-term available-for-sale securities to investment in associates as a result of conversion of convertible bonds during 2017.

Fair value of investments in associates that has a quoted market price as at December 31, 2018 and 2017, is as follows:

(in millions of Korean won)	Company	2018		2017	
		Fair value	Book value	Fair value	Book value
	D&C MEDIA CO.,LTD.	₩ 31,498	₩ 14,475	₩ 15,693	₩ 16,291
	UBCARE CO., LTD.	45,856	45,856	-	-
Associates	Action Square Co., Ltd.	4,832	3,807	-	-

The tables below provide a reconciliation of the summarized financial information presented to the carrying amount of its interest in material associates and joint venture.

(in millions of Korean won)	2018				
	Net assets at the end of the year (a)	The Company's share in % (b)	The Company's share in KRW (a*b)	Goodwill and etc.	Book value
Dunamu Inc.	₩ 255,862	22.7%	₩ 58,082	₩ 3,635	₩ 61,717
D&C MEDIA CO.,LTD.	36,904	18.5%	6,843	7,632	14,475

(in millions of Korean won)	2017				
	Net assets at the end of the year (a)	The Company's share in % (b)	The Company's share in KRW (a*b)	Goodwill and etc.	Book value
Dunamu Inc.	₩ 132,667	22.3%	₩ 29,631	₩ 3,745	₩ 33,376
SONNORI CORP.. (formerly, ROI GAMES CORP.)	(814)	40.1%	(407)	4,174	3,767
JOH&Company	10,343	45.5%	4,702	3,971	8,673
LUXROBO Co., Ltd.	3,188	15.9%	508	4,714	5,222
D&C MEDIA CO.,LTD.	31,958	18.5%	5,908	10,383	16,291

A summary of financial information on the associates and joint venture for the years ended December 31, 2018 and 2017, is as follows:

(in millions of Korean won)

	2018							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
Adcredit	₩ 1,014	₩ 49	₩ 400	₩ 30	₩ 1,456	₩ 117	₩ -	₩ 117
DMS Network, Inc.	272	543	1	280	200	39	-	39
Tapas Media, Inc.	593	70	12	-	1,409	(2,691)	-	(2,691)
NBT Inc.	10,479	14,723	4,952	-	31,681	2,466	-	2,466
DAUM Venture Fund	685	19,903	537	-	405	(1,535)	-	(1,535)
Dunamu Inc.	560,455	68,158	362,683	9,056	479,587	137,541	-	137,541
Oscar Entertainment	222	265	415	34	931	(787)	-	(787)
CNT TECH CO.,LTD.	11,881	19,800	4,014	2,828	22,553	2,506	-	2,506
Korea Credit Data	3,651	385	109	108	246	(1,631)	-	(1,631)
MannaCEA	21,125	5,154	2,809	1,146	8,543	(5,746)	(150)	(5,895)
Left Right Co., Ltd.	50	1	12	47	157	(114)	-	(114)
SCI VENTURE INC.	2,425	147	1,120	-	10,562	13	-	13
You Are the Designer	239	73	803	-	825	(583)	-	(583)
LUXROBO Co., Ltd.	4,582	330	1,227	-	1,082	(1,521)	-	(1,521)
Leferi Inc.	6,248	405	3,385	905	11,720	762	-	762
Deleo Korea Co.,Ltd.	6,073	1,659	524	-	1,458	(2,058)	-	(2,058)
Tangram Factory	2,062	129	434	4	854	(229)	-	(229)
Skelter Labs, Inc.	2,765	1,055	643	617	2,162	(3,950)	-	(3,950)
TOROOC Inc.	526	158	84	-	1	(1,275)	-	(1,275)
Dreamcide SPC Ltd.	795	-	803	-	-	(16)	-	(16)
DIGISONIC Co., Ltd.	114	929	461	-	280	(86)	-	(86)
D&C MEDIA CO.,LTD.	39,228	4,545	6,181	573	32,082	5,414	-	5,414
K Cube NEO Fund	2,199	10,756	125	-	-	(1,379)	-	(1,379)
BUNJANG Corp.	2,126	120	374	1,541	7,477	1,855	-	1,855
Supergene Inc.	3,739	13	432	-	3,215	1,451	-	1,451
InnoSignal Co.,Ltd.	262	543	159	100	-	75	-	75
PoteNit Co.,Ltd.	3,167	5,311	4,339	6,857	970	(5,091)	-	(5,091)

(in millions of Korean won)

	2018							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
Doctorbrain SPC Ltd.	888	-	904	-	-	(20)	-	(20)
CLAIR, Inc.	7,350	4,734	1,538	1,891	9,124	137	-	137
KIF-Kakao Wooribank Technology Financing Fund	11,431	27,089	248	-	229	(1,179)	-	(1,179)
13MILE.CO.LTD[1]	1,502	201	629	404	487	(1,853)	-	(1,853)
ADSOTA CORP.[1]	1,978	77	512	-	1,252	510	-	510
CARDOC Inc.[1]	4,799	1,462	3,703	4	6,536	(2,462)	-	(2,462)
Kakao Kids (formerly, BLUEPIN Inc.)[1]	29,701	3,209	1,189	46	4,470	13,196	-	13,196
Action Square Co., Ltd.[1]	15,481	7,854	5,090	4,497	7,471	(9,556)	-	(9,556)
NOWBUSKING COMPANY[1]	3,529	171	116	103	502	(1,700)	-	(1,700)
LINE WORK Corp.[1]	2,174	26	17	114	425	85	-	85
CHEQUER Inc.[1]	145	220	51	-	111	(201)	-	(201)
HASYS[1]	7,615	2,210	1,229	2,899	9,720	(399)	21	(378)
mycelebs[1]	4,566	122	9,795	344	692	(4,786)	-	(4,786)
DAIWAON. C. I. INC[1]	16,919	391	6,054	63	34,956	3,259	(25)	3,234
Haksan Publinshing Co.Ltd.[1]	24,534	3,977	7,037	3,385	28,377	2,425	-	2,425
peoplefund[1]	816	6,847	904	2,253	5,351	(5,735)	-	(5,735)
SEOUL MEDIA.INC.[1]	16,183	201	2,113	785	9,925	136	-	136
Allstay Co.,LTD[1]	270	92	380	-	-	-	-	-
UBCARE CO., LTD.[1]	75,808	39,444	9,783	2,445	63,758	4,682	-	4,682
Others (63 companies)	90,813	50,746	37,000	10,469	50,756	(68,020)	(451)	(68,471)
	1,003,477	304,297	485,330	53,825	853,995	52,070	(606)	51,464
Joint venture								
DAUM KAKAO PHILIPPINES CORP.	8,213	-	7	-	-	(24)	-	(24)
	₩ 1,011,690	₩ 304,297	₩ 485,337	₩ 53,825	₩ 853,995	₩ 52,046	₩ (606)	₩ 51,440

[1] The above table represents financial information since the acquisition date, respectively.

(in millions of Korean won)

	2017							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
Adcredit	₩ 698	₩ 81	₩ 261	₩ -	₩ 1,473	₩ 129	₩ -	₩ 129
DMS Network, Inc.	272	543	1	280	200	39	-	39
Tapas Media, Inc.	2,662	83	37	-	738	(2,339)	-	(2,339)
NBT Inc.	14,631	10,449	6,938	-	35,576	2,476	-	2,476
DAUM Venture Fund	2,081	21,797	293	-	2,578	1,662	-	1,662
Dunamu Inc.	1,239,019	18,946	1,123,404	1,894	211,426	109,327	-	109,327
Oscar Entertainment	166	1,273	561	133	1,949	(211)	-	(211)
CNT TECH CO.,LTD.	10,184	20,334	3,455	4,797	18,423	140	-	140
Korea Credit Data	3,856	373	27	-	12	(295)	-	(295)
MannaCEA	13,441	5,089	4,225	390	6,042	(3,545)	(10)	(3,555)
NeoBazar	1,076	1,272	69	75	154	(352)	-	(352)
Left Right Co., Ltd.	165	2	8	-	12	(202)	-	(202)
SCI VENTURE INC.	5,062	1,213	4,789	-	28,480	554	-	554
SONNORI CORP.	411	790	1,788	228	899	(3,094)	-	(3,094)
JOH&Company	4,229	12,657	328	7,233	6,771	(2,872)	-	(2,872)
You Are the Designer	239	73	803	-	825	(583)	-	(583)
LUXROBO Co., Ltd. [1]	5,360	202	2,329	45	174	(107)	-	(107)
Leferi Inc. [1]	1,919	385	596	148	4,567	(946)	-	(946)
Deleo Korea Co.,Ltd.	7,795	679	1,201	-	2,474	(1,063)	-	(1,063)
Tangram Factory	1,917	131	109	-	374	(431)	-	(431)
Skelter Labs, Inc. [1]	2,569	804	488	244	394	(2,040)	-	(2,040)
TOROOC Inc. [1]	1,830	241	16	-	-	(300)	-	(300)
Dreamcide SPC Ltd. [1]	810	-	802	-	-	(3)	-	(3)
DIGISONIC Co., Ltd. [1]	94	833	286	-	57	(280)	-	(280)
D&C MEDIA CO.,LTD. [1]	33,020	2,713	3,309	466	13,675	2,314	-	2,314
K Cube NEO Fund [1]	320	4,516	127	127	13	(241)	-	(241)
BUNJANG Corp.[1]	1,739	4,024	757	2,771	1,370	142	-	142
Supergene Inc.[1]	1,957	18	104	-	473	(22)	-	(22)
InnoSignal Co.,Ltd.[1]	37	249	142	100	-	(56)	-	(56)
PoteNit Co.,Ltd.[1]	3,269	3,661	2,924	128	-	-	-	-

(in millions of Korean won)

	2017							
	Current asset	Non-current asset	Current liability	Non-current liability	Revenue	Profit (loss)	Other comprehensive income (loss)	Comprehensive income (loss)
Doctorbrain SPC Ltd.[1]	410	-	406	-	-	(6)	-	(6)
CLAIR, Inc.[1]	2,584	2,227	1,123	140	-	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	13,207	2,000	75	-	-	-	-	-
Others (60 companies)	61,002	30,483	29,451	8,937	32,514	(48,669)	-	(48,669)
Joint venture								
DAUM KAKAO PHILIPPINES CORP.	8,232	-	1	-	-	(9)	-	(9)
	₩ 1,446,264	₩ 148,141	₩ 1,191,234	₩ 28,136	₩ 371,640	₩ 49,117	₩ (10)	₩ 49,107

[1] The above table represents financial information since the acquisition date, respectively.

17. Property and Equipment

Changes in property and equipment for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	2018							
	Land	Buildings[1]	Structures	Machinery and equipment	Vehicles	Furniture	Construction in progress	Total
Beginning balance	₩ 57,220	₩ 53,771	₩ 215	₩ 119,162	₩ 520	₩ 38,423	₩ 1,733	₩ 271,044
Acquisition	8	1,040	567	59,707	825	35,155	3,891	101,193
Changes in scope of consolidation	(28)	10,029	18	1,285	878	3,506	3,890	19,578
Disposals[1]	-	(9,501)	(6)	(509)	(95)	(1,224)	-	(11,335)
Depreciation	-	(1,619)	(39)	(47,279)	(52)	(18,661)	-	(67,650)
Transfer	33	1,559	-	6	(150)	3,819	(3,191)	2,077
Currency translation effects	-	(11)	(3)	-	(80)	-	-	(95)
Ending balance	₩ 57,233	₩ 55,268	₩ 752	₩ 132,372	₩ 1,845	₩ 61,019	₩ 6,324	₩ 314,812
December 31, 2018								
Acquisition cost	₩ 57,233	₩ 61,740	₩ 847	₩ 300,936	₩ 3,166	₩ 119,165	₩ 6,324	₩ 549,411
Government grants	-	-	-	(28)	-	(286)	-	(314)
Accumulated depreciation	-	(6,473)	(95)	(168,536)	(1,321)	(57,860)	-	(234,285)
Net book value	₩ 57,233	₩ 55,268	₩ 752	₩ 132,372	₩ 1,845	₩ 61,019	₩ 6,324	₩ 314,812

[1] As at December 31, 2018 and 2017, the Company does not own an investment property, and acquisition and disposal transactions in relation to an investment property occurred in 2018 are included in changes in buildings.

(in millions of Korean won)

	2017							
	Land	Buildings	Structures	Machinery and equipment	Vehicles	Furniture	Construction in progress	Total
Beginning balance	₩ 56,589	₩ 53,157	₩ 225	₩ 109,916	₩ 452	₩ 33,515	₩ -	₩ 253,854
Acquisition	100	1,740	-	53,712	118	14,560	6,383	76,613
Changes in scope of consolidation	1,786	1,131	49	47	176	1,137	-	4,327
Disposals	(1,255)	(635)	(28)	(329)	(31)	(734)	-	(3,011)
Depreciation	-	(1,622)	(31)	(44,156)	(195)	(14,728)	-	(60,733)
Transfer	-	-	-	(58)	-	4,707	(4,649)	-
Currency translation effects	-	-	-	30	(1)	(34)	-	(5)
Ending balance	₩ 57,220	₩ 53,771	₩ 215	₩ 119,162	₩ 520	₩ 38,423	₩ 1,733	₩ 271,044
December 31, 2017								
Acquisition cost	₩ 57,220	₩ 58,830	₩ 280	₩ 251,337	₩ 1,389	₩ 83,525	₩ 1,733	₩ 454,315
Government grants	-	-	-	(42)	-	(279)	-	(321)
Accumulated depreciation	-	(5,060)	(65)	(132,133)	(869)	(44,823)	-	(182,950)
Net book value	₩ 57,220	₩ 53,771	₩ 215	₩ 119,162	₩ 520	₩ 38,423	₩ 1,733	₩ 271,044

The Company leases some buildings under non-cancellable operating lease agreements. The lease payments recognized as expenses for the year ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	**2018**	**2017**
Minimum lease payments	₩ 25,613	₩ 19,074

Total minimum lease payments in relation to non-cancellable operating leases that are payable after December 31, 2018 are as follows:

(in millions of Korean won)	**2018**
Within one year	₩ 22,658
Later than one year but not later than five years	87,682
Over 5 years	29,668
	₩ 140,007

18. Intangible Assets

Changes in intangible assets for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	2018						
	Goodwill[1]	Development costs[2]	Industrial property rights[2]	Exclusive rights[2]	Membership / Brand[2]	Other intangible assets[2,3]	Total
Beginning balance	₩ 3,020,579	₩ 16,231	₩ 37,187	₩ 6,500	₩ 350,404	₩ 258,681	₩ 3,689,582
Acquisition	-	519	442	4,328	7,493	45,400	58,183
Transfer	-	-	-	-	-	214	214
Changes in scope of consolidation	162,782	2,338	8,936	300	-	29,759	204,115
Disposal	(7,102)	(2,579)	-	(413)	(1,022)	(1,734)	(12,850)
Amortization	-	(5,769)	(5,261)	(3,194)	-	(53,154)	(67,379)
Impairment	(898)	(1,872)	(1,901)	(133)	(1)	(3,514)	(8,320)
Other	251	(7)	64	-	-	1,411	1,719
Ending balance	₩ 3,175,610	₩ 8,861	₩ 39,467	₩ 7,388	₩ 356,875	₩ 277,064	₩ 3,865,265
December 31, 2018							
Acquisition cost	₩ 3,194,834	₩ 23,991	₩ 44,071	₩ 8,752	₩ 356,875	₩ 358,336	₩ 3,986,859
Accumulated amortization	-	(13,247)	(3,094)	(1,364)	-	(79,120)	(96,826)
Government grants	-	(5)	(1)	-	-	(2)	(8)
Accumulated impairment	(19,223)	(1,878)	(1,509)	-	-	(2,151)	(24,761)
Net book value	₩ 3,175,610	₩ 8,861	₩ 39,467	₩ 7,388	₩ 356,875	₩ 277,064	₩ 3,865,265

[1] The impairment loss on goodwill is recognized for Nylon Korea Media and certain other subsidiaries, as the recoverable amount decreased and became less than the carrying amount due to slump in sales and etc.

[2] The impairment loss on intangible assets is recognized from PATH MOBILE INC. PTE. LTD. and certain other subsidiaries. The Company estimated the recoverable amount as at December 31, 2018, and recognized the difference between the recoverable amount and its book value as impairment loss considering limited future economic benefit from the projects being developed.

[3] As at December 31, 2018, the Company owns marketable cryptocurrency of ₩ 2,053 million and non-marketable cryptocurrency of ₩ 4,721 million.

(in millions of Korean won)

	2017						
	Goodwill[1]	Development costs[2]	Industrial property rights[2]	Exclusive rights	Membership / Brand[2]	Other intangible assets[2]	Total
Beginning balance	₩ 3,033,058	₩ 23,498	₩ 29,617	₩ 8,404	₩ 349,595	₩ 288,992	₩ 3,733,166
Acquisition	-	108	439	754	1,809	27,062	30,171
Transfer	-	-	-	1,200	-	(150)	1,050
Changes in scope of consolidation	28,042	578	12,629	-	-	7,326	48,575
Disposal	-	(313)	(131)	-	(451)	(148)	(1,043)
Amortization	-	(7,173)	(4,357)	(3,858)	-	(53,697)	(69,085)
Impairment	(39,589)	(374)	(940)	-	(549)	(10,785)	(52,238)
Other	(932)	(92)	(71)	-	-	81	(1,015)
Ending balance	₩ 3,020,579	₩ 16,231	₩ 37,187	₩ 6,500	₩ 350,404	₩ 258,681	₩ 3,689,582
December 31, 2017							
Acquisition cost	₩ 3,071,612	₩ 42,031	₩ 51,562	₩ 13,320	₩ 350,954	₩ 393,861	₩ 3,923,340
Accumulated amortization	-	(19,369)	(13,206)	(6,690)	-	(119,589)	(158,854)
Government grants	-	-	(1)	-	-	(4)	(6)
Accumulated impairment	(51,033)	(6,431)	(1,168)	-	(549)	(15,586)	(74,767)
Other	-	-	-	(131)	-	-	(131)
Net book value	₩ 3,020,579	₩ 16,231	₩ 37,187	₩ 6,500	₩ 350,404	₩ 258,681	₩ 3,689,582

[1] The impairment loss on goodwill is recognized for PATH MOBILE INC.PTE.LTD. and certain other subsidiaries, as the recoverable amount decreased and became less than the carrying amount due to slump in sales and etc..

[2] The impairment loss on other intangible assets is recognized from BLUEPIN INC. and certain other subsidiaries. The Company estimated the recoverable amount as at December 31, 2017, and recognized the difference between the recoverable amount and its book value as impairment loss considering limited future economic benefit from the projects being developed.

The following is a summary of goodwill allocation for cash generating units ("CGU"s) operated by management as at December 31, 2018:

(in millions of Korean won)		**Amount**
Internet portal service and other service	₩	1,080,385
Music service		1,221,284
Other mobile service		261,858
Game business		41,461
Commerce service		277,901
Entertainment service		292,722
	₩	3,175,610

The Company annually tests impairment of its goodwill. The recoverable amounts of CGU or CGUs have been determined based on value-in-use calculations. The Company has estimated that the book values of CGU or CGUs other than CGU or CGUs related to game business and others will be less than their recoverable amounts. These calculations use pre-tax cash flow projections based on financial budgets approved by management. Cash flows are estimated using the estimated growth rates stated below. The growth rate during this period and the permanent growth rate surpassing the period does not exceed long-term average growth rate of the business. The key assumptions used for value-in-use calculations are as follows:

	Internet portal and other services[1]	**Music Services[2]**	**Other mobile service, game business, commerce service, other contents service, entertainment service and others**
Operating profit rate	8.8% ~ 19.8%	18.7% ~ 20.3%	1.5% ~22.54%
Revenue growth rate	6.5% ~ 20.3%	11.0% ~ 39.3%	3.9% ~ 44.0%
Perpetual growth rate	2.0%	2.0%	1.0%
After-tax discount rate	10.6%	9.1%	9.1% ~ 17.2%

As a result of the impairment test of CGUs of other mobile service, game business and others, the Company recognized ₩ 898 million of impairment loss in relation to some subsidiaries for the year ended December 31, 2018.

[1] When estimating the recoverable amount, if a perpetual growth rate applied to CGU is lower than the management's estimate by 0.5%, the recoverable amount will be reduced by 4.5%.

If after-tax discount rate applied to the estimation is higher than the management's estimate by 1%, the recoverable amount will decrease by 11.4%.

[2] When estimating the recoverable amount, if a perpetual growth rate applied to CGU is lower than the management's estimate by 0.5%, the recoverable amount will be reduced by 5.2%.

If after-tax discount rate applied to the estimation is higher than the management's estimate by 1%, the recoverable amount will decrease by 12.5%.

19. Borrowings

Short-term borrowings as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

Classification	Lender	Interest rate as at December 31, 2018	2018	2017
Current portion of long-term borrowings[1]	7th non-guarantee public bonds	-	₩ -	₩ 170,000
	8th non-guarantee public bonds	2.08%	50,000	-
	9-1st non-guarantee public bonds	1.97%	60,000	-
	Discount on issuance of bonds		(28)	(170)
	Net		109,972	169,830
Convertible bonds[2]	10th non-guarantee private convertible bonds	-	241,000	-
	Discount on issuance of bonds		(552)	-
	Net		240,448	-
Exchangeable bonds[2,3]	11th guaranteed private convertible bonds	-	230,000	-
	Discount on issuance of bonds		(1,524)	-
	Net		228,476	-
Loans for operation capital	KB Kookmin Bank	2.30%	20,000	-
Facility loan	Woori Bank	2.94%	1,000	-
Facility loan	Woori Bank	3.06%	4,000	-
Loans for operation capital	Employees of subsidiaries	4.60%	190	45
Loans for operation capital	Woori Bank and others	2.31~6.50%	3,937	-
Bank loans for small and medium enterprises	Small & medium Business Cooperation	-	-	13
Bank loans for technology creation enterprises	Shinhan Bank	-	-	100
Bank loans for technology creation enterprises	Shinhan Bank	-	-	100
General loans for enterprises	Shinhan Bank	-	-	50
Redeemable convertible preferred shares	Preferred shareholders		1,457	4,236
			₩ 609,480	₩ 174,372

[1] Reclassified to short-term borrowings as the maturity as at the year end has reached within a year.

[2] Reclassified as short-term borrowings as the period of early redemption right is within a year as at the year ended December 31, 2018.

[3] As a subsidiary (Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) merged with the Company during 2018, shares are subject to exchange from ordinary shares of Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.), to ordinary shares of the Parent Company, and exchangeable bonds became convertible bonds.

Long-term borrowings and corporate bonds as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

Classification	Lender	Interest rate as at December 31, 2018	2018	2017
Bonds	Private offering (8th non-guaranteed private bonds)[1]	-	₩ -	₩ 50,000
	Public offering (9-1th non-guaranteed public bonds)[1]	-	-	60,000
	Public offering (9-2th non-guaranteed public bonds)	2.30%	40,000	40,000
	Less: Discount on issuance of bonds		(61)	(223)
			39,939	149,777
Convertible bonds[2]	Private offering (10th non-guaranteed private convertible bonds)	-	-	244,000
	Less: Discount on issuance of bonds		-	(803)
			-	243,197
Exchangeable bonds[2]	Private offering (11th US dollar-settled zero coupon guaranteed exchangeable bonds denominated in Korean won)	-	-	230,000
	Less: Discount on issuance of bonds		-	(2,166)
	Net		-	227,834
Long-term borrowings	THE KUMAMOTO DAI-ICHI SHINKIN BANK	2.00~4.30%	1,574	-
	Shinhan Bank	3.69%	500	-
	Industrial Bank of Korea	1.60%	500	-
	Shinhan Bank and others	0.50~5.00%	99	-
Redeemable convertible preferred shares	Preferred shareholders		2,384	-
			₩ 44,995	₩ 620,808

[1] Reclassified to short-term borrowings as the maturity as at the year end has reached within a year.
[2] Reclassified as short-term borrowings as the period of early redemption right is within a year as at the year ended December 31, 2018.

Movements in the borrowings for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
Beginning balance	₩ 795,180	₩ 999,868
Changes in scope of consolidation	13,147	6,483
Additions	41,040	452,163
Repayments	(177,161)	(654,188)
Conversion and others	(19,831)	(11,006)
Amortization of present value discounts	2,100	1,860
Beginning balance	₩ 654,475	₩ 795,180

Details of redeemable convertible preferred shares[1] issued by two subsidiaries as at December 31, 2018, are as follows:

	Issuer	
	Friendsgames Co.,Ltd.	Kakao VX
Date of issue	April 24, 2018	October 4, 2018/ December 3, 2018
Value at issue *(in millions of Korean won)*	₩ 7,000	₩ 7,996
Dividend rate for preferred shares	1% of issue value	1% of issue value
Guaranteed yield upon redemption	8%	0%
Conversion period	From the day after issuance date to the day before 10 years from issuance date	From the issuance date to the day of 10 years from issuance date
Conversion rate	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price	1 preferred share for 1 ordinary share : adjustable if (based on) a) IPO price
Redemption period	Redeemable from one year after issuance date	Redeemable from the next day of issuance date

[1] As at December 31, 2018, conversion rights and early redemption rights in relation to the above redeemable convertible preferred shares meet the terms of separation of embedded derivatives and are considered as the one compound embedded derivatives, separate from the main contract, and derivative liabilities of ₩ 13,916 million are separately recognized.

Other than the above redeemable convertible preferred shares, KIWI PLUS, a subsidiary, has issued three redeemable convertible preferred shares as at December 31, 2018 and they are recognized as ₩ 1,457 million of short-term borrowings and ₩ 429 million of long-term borrowings, separately.

Details of convertible bonds issued by the Parent Company are as follows:

		Detail
Type		10th non-guaranteed private convertible bonds
Principal amount		₩ 241,000 million
Interest rate	Coupon rate	0%
	Yield rate	0%
Date of maturity		April 14, 2021
Redemption at maturity		The bonds to be redeemed at their principal amount with 0% of yield to maturity on the maturity date
Conversion details	Conversion ratio	100%
	Conversion price	₩ 118,786 (per share)
	Conversion to	Ordinary shares of Kakao Corp.
	Conversion period	From and including April 14, 2017 up to and including March 14, 2021
	Conversion price adjustments	Adjusted in accordance with the agreement in the event of any occasions prescribed in the agreement such as capital increase with/without consideration and others

Investor's redemption right (Put Option)	Bondholders may claim early redemption before the maturity date for either entire or partial amount of principal on every April 14th starting from 2019, three years after the issuance date.

The entire amount of financial instruments was accounted for liability as the event of default of the convertible bonds is considered contingent settlement provisions. During 2018, convertible bond of ₩ 2,990 million (principal amount of ₩ 3,000 million) has been converted into ordinary shares (Note 25).

Details of exchangeable bonds issued by the Parent Company are as follows:

		Details
Type		11th US dollar-settled zero coupon guaranteed exchangeable bonds denominated in Korean won
Principal amount		₩ 230,000 million
Interest rate	Coupon rate	0%
	Yield rate	0%
Date of maturity		May 11, 2021
Redemption		1) Redemption at maturity: Unless previously redeemed, repurchased and cancelled or exchanged, 100% of principal amount will be redeemed
		2) Early redemption : put or call option is exercised
Exchange detail	Exchange ratio	100%
	Exchange price	₩ 128,386 (per share)
	Exchange into	Shares of ordinary share, par value ₩ 500 per share, of LOEN ENTERTAINMENT, INC., which are listed on the KRX KOSDAQ Market
	Exchange period	From and including June 21, 2016 up to and including April 30, 2021
	Exchange price adjustments	Subject to adjustment in certain circumstances as described in the agreement such as capital increase with/without consideration, cash dividends on the share of LOEN ENTERTAINMENT, INC. and others
Redemption at the option of the bondholders (Put Option)		Until and unless previously redeemed, repurchased and cancelled, or exchanged, on May 11, 2019, each of the bondholders has the right, at the option of such holder, to require the Company to redeem all or a portion of principal amount. And the bondholders may claim early redemption if: - a change of control occurs with respect to LOEN ENTERTAINMENT, INC., or - the shares officially cease to be listed or admitted for trading or are suspended for a period of at least 30 consecutive trading days on the KRX KOSDAQ Market
Redemption at the option of the issuer (Call Option)		The Company may, at its option at any time on or after May 11, 2019, until the 30th six business day prior to the maturity date, redeem the bonds if the closing price of a share for each of 20 trading days in

	the period of 30 consecutive trading days ending on the trading day immediately prior to the date of our redemption notice, is at least 130% of the prevailing exchange price. And the Company may claim early redemption if: - at least 90% of the initial principal amount of the bonds have been redeemed, repurchased and cancelled, or exchanged, or - certain changes relating to taxation in Korea that the Company becomes obliged to gross up for any payments on the bonds

The entire amount of financial instruments was accounted for liability as the event of default of the exchangeable bonds is considered contingent settlement provisions. As a subsidiary (Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) merged with the Company during 2018, shares are subject to exchange from ordinary shares of Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.), to ordinary shares of the Parent Company.

As at December 31, 2018, the Company received payment guarantees from KB Kookmin Bank for the exchangeable bonds. In connection with the said payment guarantees, ordinary shares of Kakao M Corp. (formerly, LOEN ENTERTAINMENT INC.) held by the Parent Company and the stock return rights for the remaining shares subject to exchange were provided as collateral. However, assets provided as collateral have been changed to time deposits of the Company amounting to ₩ 239,600 million due to merger with Kakao M Corp. (formerly, LOEN ENTERTAINMENT INC) in 2018. In addition, 1,791,466 treasury shares required for the exchange are deposited at Korea Securities Depository.

The Company has been provided the guarantee by two financial institutions including Korea Technology Finance Corporation in relation to the borrowings above (Notes 36).

20. Net Defined Benefit Liabilities

Net defined benefit liabilities recognized in the consolidated statements of financial position as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Present value of funded defined benefit obligation	₩	102,630	₩	85,720
Fair value of plan assets		(99,808)		(83,757)
Liability in the consolidated statements of financial position	₩	2,822	₩	1,963

Changes in the defined benefit obligations for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)		**2018**		**2017**
Beginning balance	₩	85,720	₩	65,125
Increase due to change in scope of consolidation		4,836		2,029
Current service cost		28,363		23,305
Interest cost		2,484		1,722

Remeasurement	2,767	2,776
Benefits paid	(21,542)	(9,236)
Others	4	-
Ending balance	₩ 102,630	₩ 85,720

Changes in the fair value of plan assets for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	**2018**	**2017**
Beginning balance	₩ 83,757	₩ 63,685
Increase due to change in scope of consolidation	2,793	495
Interest income	2,237	1,673
Contribution	29,542	26,558
Payments from plans	(17,755)	(8,050)
Remeasurement:		
Actuarial loss	(769)	(603)
Others	3	-
Ending balance	₩ 99,808	₩ 83,757

The amounts recognized in the consolidated statements of comprehensive income for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	**2018**	**2017**
Current service cost	₩ 28,363	₩ 23,305
Net interest cost	246	49
	₩ 28,609	₩ 23,354

Total service cost from defined benefit plan amounting to ₩ 28,609 million and ₩ 23,354 million is included in operating expenses for the years ended December 31, 2018 and 2017, respectively. In addition, total service cost from defined contribution plan was ₩ 1,787 million and ₩ 2,669 million for the years ended December 31, 2018 and 2017, respectively.

Principal assumptions on actuarial valuation as at December 31, 2018 and 2017 are as follows:

	2018	**2017**
Discount rate	2.3% ~ 3.9%	2.3% ~ 4.2%
Salary growth rate	4.5% ~ 7.5%	5.0% ~ 7.5%

The sensitivity analysis of the defined benefit obligations as at December 31, 2018 to changes in the weighted principal assumptions is:

		Effect on defined benefit obligations	
	Changes in principal assumption	**Increase in principal assumption**	**Decrease in principal assumption**
Discount rate	1%	5.55% decrease	6.43% increase
Salary growth rate	1%	6.30% increase	5.37% decrease

The Company is exposed to the most significant risk through changes in bond yields, which was used as a discount rate. A decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plans' bond holdings.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized on the consolidated statement of financial position.

Plan assets as at December 31, 2018 and 2017 consist of the following:

(in millions of Korean won)	**2018**	**2017**
Equity linked bond	₩ 17,967	₩ 16,585
Time deposits	20,381	9,846
Debt instruments	372	8,494
Financial instruments with fixed rate	46,472	40,595
Interest guarantee insurance	11,068	2,921
Others	3,548	5,314
	₩ 99,808	₩ 83,757

21. Other Long-term Employee Benefits Liabilities

Changes in other long-term employee benefits liabilities for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	**2018**	**2017**
Beginning balance	₩ 32,015	₩ 28,220
Increase due to change in scope of consolidation	150	-
Current service cost	10,354	9,951
Interest cost	837	637
Remeasurement of the benefit liabilities	(163)	(3,218)
Benefits paid	(2,026)	(3,535)
Others	(1,011)	(41)
Ending balance	₩ 40,156	₩ 32,015

The amounts recognized on the consolidated statements of comprehensive income for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	2018	2017
Current service cost	₩ 10,354	₩ 9,951
Interest cost	837	637
Remeasurement of the benefit liabilities	(163)	(3,218)
	₩ 11,028	₩ 7,370

Principal assumptions on actuarial valuation in relation to other long-term employee benefits liabilities for the years ended December 31, 2018 and 2017 are as follows:

	2018	2017
Discount rate	2.2% ~ 3.2%	2.3% ~ 3.4%
Salary growth rate	4.0% ~ 7.5%	4.5% ~ 7.5%

22. Income Tax Expense and Deferred Tax

Income tax expense for the years ended December 31, 2018 and 2017 consists of:

(in millions of Korean won)	2018	2017
Current tax:		
Current tax on profit for the year	₩ 106,077	₩ 78,863
Adjustments due to changes in estimates related to prior years	(3,692)	(51,203)
	102,385	27,660
Deferred tax:		
Changes in temporary differences	(29,624)	(659)
Changes in accounting policies	(665)	-
Increase (decrease) in temporary differences due to change in scope of consolidation	(4,402)	-
Deferred tax charged or credited directly to equity	47,087	1,203
	12,396	544
Income tax expense	₩ 114,781	₩ 28,204

Reconciliation between actual income tax expense and amount computed by applying the statutory tax rate to profit before income tax for the years ended December 31, 2018 and 2017 follows:

(in millions of Korean won)	2018	2017
Profit before income tax	₩ 130,670	₩ 153,298
Income tax expense computed at statutory tax rate	31,622	36,636
Adjustments:		
Non-taxable income	(1,874)	(14,116)
Non-deductible expenses	28,880	4,867
Changes in valuation allowance of deferred income tax asset	51,467	47,625
Adjustments due to changes in estimates related to prior years	(3,692)	(51,203)
Non-refundable tax	11,478	7,551
Tax credits	(3,099)	(3,156)
Income tax expense	₩ 114,781	₩ 28,204

Income tax effects related to components of other comprehensive income (expenses) for the years ended December 31, 2018 and 2017 are as follows:

	2018		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other comprehensive income (expense):			
Gain on valuation of available-for-sale securities	₩ -	₩ -	₩ -
Gain on valuation of equity instruments at fair value through other comprehensive income	9,064	(2,193)	6,870
Gain on valuation of debt instruments at fair value through other comprehensive income	187	(45)	142
Remeasurement of the net defined benefit liabilities	(3,535)	856	(2,680)
Share of other comprehensive income of associates	(48)	12	(36)
	₩ 5,668	₩ (1,372)	₩ 4,296

	2017		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other comprehensive income (expense):			
Gain on valuation of available-for-sale securities	₩ (1)	₩ -	₩ (1)
Gain on valuation of equity instruments at fair value through other comprehensive income	-	-	-
Gain on valuation of debt instruments at fair value through other comprehensive income	-	-	-
Remeasurement of the net defined benefit liabilities	(3,378)	817	(2,561)
Share of other comprehensive income of associates	(1,188)	385	(803)
	₩ (4,567)	₩ 1,203	₩ (3,364)

The aggregate current and deferred tax relating to items that are reflected directly to equity for the years ended December 31, 2018 and 2017, is as follows:

	2018		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other reserves:			
Goodwill (investment in kind)	₩ 220,270	₩ (48,459)	₩ 171,811

	2017		
(in millions of Korean won)	**Before tax**	**Tax effect**	**After tax**
Other reserves:			
Goodwill (investment in kind)	₩ -	₩ -	₩ -

Deferred tax assets (liabilities) recognized in the consolidated statements of financial position as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	**2018**	**2017**
Deferred tax assets		
Deferred tax assets to be recovered after more than 12 months	₩ 119,614	₩ 58,900
Deferred tax assets to be recovered within 12 months	30,490	21,937
	150,104	80,836

(in millions of Korean won)	2018	2017
Deferred tax liabilities		
Deferred tax liabilities to be settled after more than 12 months	(235,077)	(193,308)
Deferred tax liabilities to be settled within 12 months	(10,540)	(12,665)
	(245,617)	(205,973)
Deferred tax liabilities, net	₩ (95,513)	₩ (125,136)

The gross movement in the deferred tax assets (liabilities) for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	2018	2017
Beginning balance	₩ (125,136)	₩ (124,891)
Changes in accounting policies	(665)	-
Changes in scope of consolidation	(4,402)	(904)
Deferred income tax charged to profit or loss	(12,396)	(544)
Deferred income tax charged to other comprehensive income	(1,372)	1,203
Deferred income tax charged to other equity	48,459	-
Ending balance	₩ (95,513)	₩ (125,136)

Changes in deferred income tax assets and liabilities for the years ended December 31, 2018 and 2017 without taking into consideration the offsetting of balances within the same tax jurisdiction are as follows:

(in millions of Korean won)	2018						
	Beginning balance	**Changes in accounting policies**	**Changes in scope of consolidation**	**Profit or loss**	**Other comprehensive income**	**Other equity**	**Ending balance**
Deferred tax liabilities							
Accrued revenue	₩ (614)	₩ -	₩ -	₩ (1,461)	₩ -	₩ -	₩ (2,074)
Property and equipment	(5,824)	-	-	(678)	-	-	(6,502)
Intangible assets	(154,345)	-	(3,370)	(11,045)	-	-	(168,760)
Non-trade receivables	(4,408)	-	-	-	-	-	(4,408)
Available-for-sale securities	(2,107)	2,107	-	-	-	-	-
Financial assets at fair value through profit or loss	-	(1,088)	-	(5,445)	-	-	(6,533)
Financial assets at fair value through other comprehensive income	-	(1,019)	(1,032)	-	(1,206)	-	(3,258)
Plan assets	(18,527)	-	-	(5,907)	-	-	(24,434)
Treasury shares	(85)	-	-	85	-	-	-
Non-refundable tax	(7,644)	-	-	(822)	-	-	(8,466)
Others	(12,421)	(665)	-	(8,098)	-	-	(21,184)
	(205,973)	(665)	(4,402)	(33,371)	(1,206)	-	(245,617)
Deferred tax assets							
Property and equipment	3,103	-	-	(48)	-	-	3,055
Advances from customers	1,794	-	-	4,558	-	-	6,352
Intangible assets	1,910	-	-	1,541	-	-	3,451
Allowance for doubtful accounts	3,164	-	-	3,772	-	-	6,936
Investments in associates	10,850	-	-	(674)	12	-	10,188

(in millions of Korean won)

	2018						
	Beginning balance	**Changes in accounting policies**	**Changes in scope of consolidation**	**Profit or loss**	**Other comprehensive income**	**Other equity**	**Ending balance**
Other payables	11,072	-	-	3,872	-	-	14,945
Provisions	1,043	-	-	559	-	-	1,602
Government grants	52	-	-	119	-	-	171
Defined benefit liabilities	17,863	-	-	4,469	856	-	23,188
Other long-term employee benefits liabilities	6,988	-	-	8,460	-	-	15,447
Available-for-sale securities	4,575	(4,575)	-	-	-	-	-
Financial assets at fair value through profit or loss	-	2,363	-	(1,175)	-	-	1,188
Financial assets at fair value through other comprehensive income	-	2,212	-	-	(1,032)	-	1,180
Derivative instruments	5,854	-	-	(3,597)	-	-	2,257
Goodwill (investment in kind)	-	-	-	-	-	48,459	48,459
Others	12,567	-	-	(882)	-	-	11,686
	80,836	-	-	20,974	(165)	48,459	150,104
Deferred tax assets (liabilities), net	₩ (125,136)	₩ (665)	₩ (4,402)	₩ (12,396)	₩ (1,372)	₩ 48,459	₩ (95,513)

(in millions of Korean won)

	2017				
	Beginning balance	Changes in scope of consolidation	Profit or loss	Other comprehensive income	Ending balance
Deferred tax liabilities					
Accrued revenue	₩ (493)	₩ -	₩ (121)	₩ -	₩ (614)
Property and equipment	(5,824)	-	-	-	(5,824)
Intangible assets	(152,280)	(904)	(1,161)	-	(154,345)
Non-trade receivables	(4,408)	-	-	-	(4,408)
Available-for-sale securities	(1,492)	-	(615)	-	(2,107)
Plan assets	(14,257)	-	(4,269)	-	(18,527)
Treasury shares	(85)	-	-	-	(85)
Non-refundable tax	(1,169)	-	(6,475)	-	(7,644)
Others	(5,703)	-	(6,718)	-	(12,421)
	(185,709)	(904)	(19,359)	-	(205,973)
Deferred tax assets					
Property and equipment	11	-	3,092	-	3,103
Advances from customers	2,326	-	(532)	-	1,794
Intangible assets	1,908	-	2	-	1,910
Allowance for doubtful accounts	11,156	-	(7,992)	-	3,164
Investments in associates	4,627	-	6,223	-	10,850
Other payables	6,599	-	4,474	-	11,072
Provisions	1,177	-	(134)	-	1,043
Government grants	103	-	(51)	-	52
Defined benefit liabilities	14,371	-	2,674	817	17,863
Other long-term employee benefits liabilities	6,848	-	139	-	6,988
Available-for-sale securities	2,091	-	2,484	-	4,575
Derivative instruments	-	-	5,854	-	5,854
Others	9,600	-	2,582	385	12,567
	60,818	-	18,815	1,203	80,836
Deferred tax assets (liabilities), net	₩ (124,891)	₩ (904)	₩ (544)	₩ 1,203	₩ (125,136)

The Company did not recognize deferred income tax asset of ₩ 87,963 million and ₩ 39,986 million as at December 31, 2018 and 2017, respectively, and deferred tax liabilities of ₩ 99,466 7million and ₩ 102,811 million as at December 31, 2018 and 2017 related to the investments in subsidiaries and associates considering the possibility of realization. As at December 31, 2018 and 2017, the deferred tax assets that have not been recognized for deductible temporary differences arising from subsidiaries' net loss carryforwards amount to ₩ 16,904 million and ₩ 32,929 million.

23. Provisions

Changes in provisions for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	2018		
	Current	Non-current	
	Provision for mileage	Provision for restoration	Total
Beginning balance	₩ 1,934	₩ 4,211	₩ 6,145
Changes in scope of consolidation	274	138	412
Increase	5,078	3,261	8,339
Decrease	(3,650)	-	(3,650)
Ending balance	₩ 3,636	₩ 7,611	₩ 11,246

(in millions of Korean won)	2017			
	Current	Non-current		
	Provision for mileage	Provision for business losses[1]	Provision for restoration	Total
Beginning balance	₩ 1,350	₩ 336	₩ 3,762	₩ 5,448
Changes in scope of consolidation	1,618	-	-	1,618
Increase	1,380	-	642	2,023
Decrease	(2,414)	(336)	(193)	(2,944)
Ending balance	₩ 1,934	₩ -	₩ 4,211	₩ 6,145

[1] With regard to the stock disposal agreement with Ergo Daum Direct General Insurance Co., Ltd. as at December 31, 2017, the Company has paid ₩ 336 million during 2017 which had been recognized as provision of business losses.

24. Derivative Financial Instruments

The carrying amounts of derivative financial assets, liabilities and commitments as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
Redemption right (NBT Inc.)[1]	₩ 217	₩ 217
Option (KakaoBank of Korea Corp.)[2]	957	-
Redemption right and conversion right (KRAFTON, Inc. (formerly, Bluehole Inc.)[3]	-	53,432
Total	₩ 1,174	₩ 53,650

[1] Redemption right granted to preferred shares of NBT Inc. owned by the Company with redemption exercise period from June 28, 2015 to June 28, 2023. The guaranteed yield on the redemption premium is 8% per annum.
[2] In relation to investments in KakaoBank of Korea Corp., agreements that hold a call option and grant a put option have been made among shareholders. (Note 36).
[3] Redemption right and conversion right granted to redeemable convertible preferred shares of KRAFTON, INC. (formerly, Bluehole Inc.) owned by the Company. All redeemable convertible preferred shares were converted into ordinary shares during 2018.

(in millions of Korean won)	2018	2017
Redemption right and conversion right (BLUEPIN INC.)[1]	₩ -	₩ 2,254
Conversion right (Kakao VX)[2]	7,601	-
Redemption right and conversion right (Friendsgames Co., Ltd.)[3]	6,315	-
Total	₩ 13,916	₩ 2,254

[1] Reclassified to an associate from a subsidiary.
[2] Conversion right granted to Kakao VX (Note 19).
[3] Redemption right and conversion right granted to Friendsgames Co.,Ltd. (Note 19).

As at December 31, 2018 and 2017, the Company recognized derivative liabilities of ₩ 13,916 million (2017: ₩ 2,254 million) for options embedded in the redeemable convertible preferred shares issued by subsidiaries.

25. Share Capital and Share Premium

As at December 31, 2018, the Parent Company's total number of authorized shares is 150 million and the total number of issued and outstanding ordinary shares are 83,487,773 and 83,387,773, respectively.

The Parent Company may grant stock options to its employees and directors of the Parent Company and its affiliates who contribute or have capabilities to contribute to the establishment, management, overseas business and technical innovation of the Company, with the resolution of special shareholders meeting up to 15% of total number of issued stocks. As at December 31, 2018, the number of outstanding stock options is 1,936,428 shares (Note 26).

The Parent Company is authorized to issue convertible bonds and bonds with warrants into registered ordinary shares for up to the total par value of ₩ 500 billion to investors other than current shareholders, with the resolution of the board of directors. As at December 31, 2018, the Parent Company has issued convertible bonds amounting to ₩ 241,000 million (Note 19).

The Parent Company may issue various classes of shares which are different in respect of their particulars as to the dividend, voting rights, conversion and redemption rights up to 50% of the total number of shares issued. The Parent Company has only issued ordinary shares and no other classes having the above conditions as at December 31, 2018.

Changes in share capital and additional paid-in capital during the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won, except number of shares)	Description	Number of ordinary shares	Share capital	Additional paid-in capital	Total
At January 1, 2017	Beginning balance	67,715,715	₩ 33,858	₩ 3,038,607	₩ 3,072,465
At January 2, 2017	Exercise of stock options	48,443	24	177	202
At February 6, 2017	Exercise of stock options	10,716	5	27	32
At March 15, 2017	Exercise of stock options	41,298	21	133	153
At April 6, 2017	Exercise of stock options	64,963	32	359	391
At August 10, 2017	Exercise of stock options	11,600	6	248	254
At September 4, 2017	Exercise of stock options	29,700	15	526	540
At September 26, 2017	Exercise of conversion right	16,664	8	1,984	1,993
At October 16, 2017	Exercise of conversion right	8,332	4	992	996
At October 23, 2017	Exercise of stock options	18,776	9	252	262
At November 10, 2017	Exercise of conversion right	16,664	8	1,985	1,993
At November 17, 2017	Exercise of stock options	6,000	3	39	42
At November 17, 2017	Exercise of conversion right	8,332	4	992	997
At December 12, 2017	Exercise of stock options	11,324	6	195	200
At December 31, 2017	Ending balance	68,008,527	34,004	3,046,516	3,080,520
At January 1, 2018	Beginning balance	68,008,527	34,004	3,046,516	3,080,520
At January 11, 2018	Exercise of stock options	52,832	26	445	472
At January 24, 2018	Issuance of global depository receipt (GDR)	8,261,731	4,131	1,046,772	1,050,902
At January 31, 2018	Exercise of conversion right	25,255	13	2,976	2,989
At February 12, 2018	Exercise of stock options	21,677	11	189	200
At March 5, 2018	Exercise of stock options	3,500	2	5	7

(in millions of Korean won, except number of shares)	Description	Number of ordinary shares	Share capital	Additional paid-in capital	Total
At April 12, 2018	Exercise of stock options	6,600	3	140	143
At May 8, 2018	Exercise of stock options	5,500	3	155	158
At July 6, 2018	Exercise of stock options	500	-	6	6
At August 13, 2018	Exercise of stock options	5,667	3	77	80
At September 3, 2018	Issuance of new shares[1]	7,092,884	3,546	883,064	886,611
At September 11, 2018	Exercise of stock options	1,000	1	8	8
At October 11, 2018	Exercise of stock options	600	-	4	4
At November 9, 2018	Exercise of stock options	1,500	1	24	25
At December 31, 2018	Ending balance	83,487,773	₩ 41,744	₩ 4,980,381	₩ 5,022,125

[1] In connection with the merge with Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.), a part of the acquisition consideration was paid by issuing the Parent Company's own equity instruments.

Prior to 2014, the Parent Company retired its treasury shares of 100,000 shares by appropriating retained earnings. Therefore, the total par value of capital stocks issued differs from the total par value of capital stocks outstanding.

(In millions of Korean won, except for number of shares and par value)

Capital stocks outstanding				
Stocks issued	Par value (in Korean won)	Total par value	Share capital	Difference
83,387,773	₩ 500	₩ 41,694	₩ 41,744	₩ 50

The Parent Company merged with Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) and issued new 4,228,304 shares (treasury shares increased by 4,228,304 shares) for some shares owned by the Parent Company and treasury shares held by Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) and, as a result, treasury shares of the Company increased from 5,188 shares to 4,233,492 shares.

26. Share-based compensation

Details of the Parent Company's stock options as at December 31, 2018, are as follows:

(a) Equity-settled stock option

- Type of shares issued through exercise of stock option: registered ordinary shares
- Grant method: Issuance of new ordinary shares
- Vesting period:
  4th - 6th tranches: The requisite service period is two years, exercisable from two to seven years after grant date.
  10th, 12th, 14th, 16th tranches : The requisite service period is two years, exercisable from two to seven years after grant date.
  9th, 11th, 13th tranches: The requisite service period is two or three years, exercisable from two or three years to seven or eight years after grant date.

(b) Cash-settled stock option

- Vesting period:
  3nd – 5th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date.
  6th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to seven years from grant date exceeds 150% of exercise price.

(c) Share-based payment transactions with cash alternatives

- Grant method: Issuance of new ordinary shares, treasury shares or payment of cash.
  The Company will determine in its discretion grant method at the time of exercise and accounted as equity-settled stock option based on the assumption that it will be granted based on the issuance of new stock or grant of treasury shares in the future.
- Vesting period:
  18th, 21th-22th, 24th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable from three years to seven years after grant date.
  19th-20th, 23th, 25th-26th tranches: The requisite service period is two years, exercisable from two years to seven years after grant date limited to 50% of granted quantity. The requisite service period of remaining 50% of granted quantity is three years, exercisable

from three years to seven years after grant date. It is exercisable only when it happens the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 150% of exercise price. If the average price of the shares calculated at the end of each month within two years to four years from grant date exceeds 200% of exercise price, all of granted quantity could be exercisable.

Details of the Parent Company's equity-settled stock options outstanding as at December 31, 2018, are as follows:

			Number of shares					
Tranche	Grant date	Exercise price (in Korean won)	Outstanding as at January 1, 2018	Granted	Forfeited	Exercised	Outstanding as at December 31, 2018	Exercisable as at December 31, 2018
4th	March 25, 2011	₩ 1,607	18,277	-	-	18,277	-	-
5th	June 10, 2011	1,607	15,900	-	-	15,900	-	-
6th	November 11, 2011	6,428	29,244	-	-	29,244	-	-
9th	January 20, 2012	7,714	10,000	-	-	-	10,000	10,000
10th	March 30, 2012	10,285	2,000	-	-	-	2,000	2,000
11th	March 30, 2012	10,285	1,000	-	-	500	500	500
12th	August 31, 2012	12,857	24,609	-	-	18,555	6,054	6,054
13th	August 31, 2012	12,857	9,500	-	-	7,500	2,000	2,000
14th	December 14, 2012	12,857	11,432	-	-	-	11,432	11,432
16th	March 28, 2013	32,143	29,342	-	-	9,400	19,942	19,942
18th	March 2, 2017	85,350	337,500	-	35,000	-	302,500	-
19th	March 2, 2017	85,350	526,000	-	20,000	-	506,000	-
20th	March 17, 2017	84,650	100,000	-	-	-	100,000	-
21st	May 2, 2017	88,600	333,500	-	36,500	-	297,000	-
22nd	September 28, 2017	131,500	50,500	-	7,500	-	43,000	-
23rd	September 28, 2017	131,500	15,000	-	-	-	15,000	-
24th	August 31, 2018	123,380	-	312,000	1,000	-	311,000	-
25th	August 31, 2018	123,380	-	190,000	-	-	190,000	-
26th	October 31, 2018	100,580	-	120,000	-	-	120,000	-
			1,513,804	622,000	100,000	99,376	1,936,428	51,928

In addition to the aforementioned stock options, the Company granted equity-settled stock options in relation to the shares of its subsidiaries such as Kakao Page Corp. (formerly, Podotree Inc.), Kakao Games Corp., TNK Factory, Kakao Investment Co., Ltd., Kakao Makers Corp. and Kakao Mobility Corp.

Compensation costs of the Parent Company's equity-settled stock options are calculated by applying a fair value approach using Black-Scholes model, Binomial model and LSMC (Least Square Monte-Carlo) model. The related assumptions are as follows:

Tranche	Fair value of option at grant date (in Korean won)	Stock price at grant date (in Korean won)	Expected volatility[1]	Expected dividends	Expected maturity	Risk free Interest rate
4th	₩ 625	₩ 2,500	40%	0%	2 years	3.61%
5th	602	2,500	38%	0%	2 years	3.61%
6th	2,527	10,000	41%	0%	2 years	3.39%
9th	3,981	12,000	44%	0%	3 years	3.40%
10th	3,984	16,000	40%	0%	2 years	3.52%
11th	5,055	16,000	41%	0%	3 years	3.55%
12th	4,991	20,000	41%	0%	2 years	2.77%
13th	6,090	20,000	40%	0%	3 years	2.76%
14th	5,188	20,000	43%	0%	2 years	2.86%
16th	12,719	50,000	42%	0%	2 years	2.46%
18th	15,086	85,300	11%	0%	2-3 years	2.14%
19th	8,696	85,300	11%	0.17%	2-3 years	2.14%
20th	7,931	84,000	11%	0.17%	2-3 years	2.09%
21st	19,153	92,600	11%	0.16%	2-3 years	2.13%
22nd	30,997	139,500	11%	0.11%	2-3 years	2.30%
23rd	4,631	139,500	11%	0.11%	2-3 years	2.30%
24th	27,259	125,000	14%	0.12%	2-3 years	2.25%
25th	5,289	125,000	14%	0.12%	2-3 years	2.25%
26th	14,052	91,600	13%	0%	2-3 years	2.18%

[1] The volatility measured at the standard deviation of continuously compounded share returns for 1st - 17th tranches granted prior to the Parent Company's listing in Korean stock market is based on statistical analysis of weekly share prices of listed corporations in the similar line of industry over expected maturity period.

Details of the Parent Company's cash-settled stock options outstanding as at December 31, 2018, are as follows:

(In Korean won, except number of shares)

			Number of shares				
Tranche	Grant date	Exercise price	Outstanding as at January 1, 2018	Granted	Exercised	Outstanding as at December 31, 2018	Exercisable as at December 31, 2018
3rd	May 2, 2017	₩ 88,600	7,000	-	-	7,000	-
4th	September 28, 2017	131,500	500	-	-	500	-
5th	August 31, 2018	123,380	-	5,000	-	5,000	-
6th	August 31, 2018	123,380	-	14,500	-	14,500	-
			7,500	19,500	-	27,000	-

In addition to the aforementioned stock options, the Company granted cash-settled stock options on shares of Kakaopay Corp., one of its subsidiaries.

The fair value of the Parent Company's cash-settled stock options was determined using LSMC (Least Square Monte-Carlo) option pricing model. As at December 31, 2018, no the cash-settled stock options are exercisable.

Share-based compensation recognized as expenses for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)		**2018**		**2017**
Equity-settled stock option[1]	₩	12,172	₩	8,900
Cash-settled stock option[2]		1,970		933
	₩	14,142	₩	9,834

[1] Amounts for 2018 include ₩ 4,189 million (2017: ₩ 3,267 million) of share-based compensation recognized as expenses for the shares of subsidiaries.
[2] Amounts for 2018 include ₩ 1,962 million (2017: ₩ 313 million) of share-based compensation recognized as expenses for the shares of subsidiaries.

27. Other Components of Equity

Other components of equity as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)		**2018**		**2017**
Other capital adjustments	₩	(5,430)	₩	(5,430)
Treasury shares		(1,034)		(798)
Losses on disposal of treasury shares		(5,941)		(5,941)
Stock options		13,897		6,142
	₩	1,492	₩	(6,026)

As at December 31, 2018, the Parent Company holds 4,233,492 shares of treasury shares in the amount of ₩ 1,034 million recognized as other components of equity.

28. Accumulated Other Comprehensive Income

Accumulated other comprehensive income as at December 31, 2018 and 2017, consists of:

(in millions of Korean won)		**2018**		**2017**
Equity instruments at fair value through accumulated other comprehensive income, net of tax[1]	₩	(3,690)	₩	591
Translation adjustments, net of tax		1,228		(2,585)
Shares of other comprehensive income (loss) of associates, net of tax		(210)		(174)
Remeasurement of defined benefit obligation, net of tax		(4,961)		(2,800)
Revaluation surplus		304		-
	₩	(7,329)	₩	(4,968)

[1] Presented as gain on valuation of available-for-sale securities as at December 31, 2017.

Changes in accumulated other comprehensive income for the year ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	January 1, 2018	Changes in accounting policies	Increase (Decrease)	December 31, 2018
Gain on valuation of available-for-sale securities, net of tax	₩ 591	₩ (591)	₩ -	₩ -
Translation adjustments, net of tax	(2,585)	-	3,813	1,228
Shares of other comprehensive income of associates, net of tax	(174)	-	(36)	(210)
Equity instruments at fair value through accumulated other comprehensive income	-	(8,551)	4,861	(3,690)
Debt instruments at fair value through accumulated other comprehensive income	-	(142)	142	-
Equity instruments at fair value through Profit or loss	-	-	-	-
Remeasurement of defined benefit obligation, net of tax	(2,800)	-	(2,161)	(4,961)
Revaluation surplus	-	-	304	304
	₩ (4,968)	₩ (9,283)	₩ 6,922	₩ (7,329)

Other comprehensive income in the table above represent amount net of tax.

(in millions of Korean won)	January 1, 2017	Increase (Decrease)	Reclassified to profit and loss	December 31, 2017
Gain on valuation of available-for-sale securities, net of tax	₩ 721	₩ (4,274)	₩ 4,144	₩ 591
Translation adjustments, net of tax	377	(2,962)	-	(2,585)
Shares of other comprehensive income of associates, net of tax	895	(1,068)	-	(174)
Remeasurement of defined benefit obligation, net of tax	(1,073)	(1,728)	-	(2,800)
	₩ 920	₩ (10,032)	₩ 4,144	₩ (4,968)

Other comprehensive income in the table above represent amount net of tax.

29. Retained Earnings

Retained earnings as at December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
Legal reserve[1]	₩ 11,561	₩ 10,462
Retained earnings before appropriation	441,839	392,081
	₩ 453,400	₩ 402,542

[1] The Commercial Code of the Republic of Korea requires the Parent Company to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to reduce accumulated deficit.

30. Operating Expenses

Operating expenses for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
Salaries	₩ 420,326	₩ 324,285
Retirement benefit expense	30,396	26,023
Compensation cost of share-based payments	14,142	9,834
Welfare	66,997	52,695
Travel and transportation expense	8,522	6,184
Taxes and dues	4,786	3,610
Rental expense	37,390	27,897
Commission	908,988	728,091
Advertising expense	183,827	116,453
Depreciation	67,650	60,733
Amortization	67,379	69,085
Advertising agency fee	89,954	88,577
Cost of goods	205,734	133,247
Contents fee	189,190	121,350
Expenses for events	3,487	1,787
Others	42,189	35,943
	₩ 2,340,959	₩ 1,805,793

31. Other Non-Operating Income and Expenses

Details of other non-operating income and expenses for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)		**2018**		**2017**
Other non-operating income				
Gain on disposal of property and equipment	₩	584	₩	588
Gain on disposal of intangible assets		1,904		968
Gain on disposal of investment property		178		-
Gain on disposal of equity method investments		38,650		22,216
Gain on disposal of investments in subsidiaries		14,746		-
Gain on foreign currency transactions		2,398		1,880
Gain on foreign currency translation		123		725
Miscellaneous income		15,436		9,841
Rent income		10		27
Gain on disposal of other assets		295		-
Reversal of allowance for doubtful accounts (non-operating income)		204		-
Others		3		3
	₩	74,531	₩	36,247
Other non-operating expenses				
Loss on disposal of property and equipment	₩	355	₩	377
Loss on disposal of intangible assets		324		165
Loss on abandonment of property and equipment		623		459
Impairment losses on intangible assets		8,320		52,238
Impairment losses on other assets		2,871		312
Impairment losses on equity method investments		36,747		13,858
Donations		6,493		4,679
Service fees		5,978		4,557
Loss on foreign currency transactions		1,607		3,463
Loss on foreign currency translation		81		2,737
Loss on disposal of equity method investments		2,165		4,031
Loss on disposal of investments in subsidiaries		565		-
Miscellaneous losses		15,831		2,685
Other Impairment loss on trade receivables		3,761		881
Loss on disposal of other assets		-		128
Others		50		-
	₩	85,772	₩	90,568

32. Finance Income and Costs

Finance income and costs for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)		**2018**		**2017**
Finance income				
Interest income	₩	41,783	₩	14,589
Dividend income		381		2,481
Gain on valuation of derivatives		988		51,708
Gain on transactions of derivatives		-		30
Gain on disposal of available-for-sale securities		-		8,855
Gain on valuation of financial assets at fair value through profit or loss		23,830		-
Gain on disposal of financial assets at fair value through profit or loss		7,443		-
Gain on foreign currency transactions		15,138		809
Gain on foreign currency translation		16,645		474
Other finance income		6,245		-
	₩	112,453	₩	78,947
Finance costs				
Interest expense	₩	9,356	₩	11,240
Loss on disposal of available-for-sale securities		-		358
Loss on valuation of derivative financial instruments		732		13,253
Loss on foreign currency transactions		2,502		951
Loss on foreign currency translation		7,690		10,188
Impairment losses on available-for-sale securities		-		9,753
Loss on valuation of financial assets at fair value through profit or loss		23,602		-
Loss on disposal of financial assets at fair value through profit or loss		269		-
Loss on disposal of financial assets at fair value through other comprehensive income		272		-
Other finance costs		5,720		-
	₩	50,143	₩	45,744

33. Earnings per Share

Basic earnings per share is calculated by dividing the profit attributable to equity holders of the Parent Company by the weighted average number of ordinary shares outstanding, excluding the treasury shares during the year.

Basic earnings per share for the years ended December 31, 2018 and 2017 is calculated as follows:

(in millions of Korean won, except per share data)	2018	2017
Profit attributable to equity holders of the Parent Company	₩ 47,886	₩ 108,597
Weighted average number of ordinary shares outstanding	76,863,184	67,769,979
Basic earnings per share	₩ 623	₩ 1,602

Diluted earnings per share is calculated by adjusting the weighted average number of ordinary shares outstanding to assume conversion of all dilutive potential ordinary shares. The Company has stock options and convertible bonds as dilutive potential ordinary shares. For the share options, a calculation is done to determine the number of shares that could have been acquired at fair value (determined as the average annual market share price of the Company's shares) based on the monetary value of the subscription rights attached to outstanding share options. The number of shares calculated as above is compared with the number of shares that would have been issued assuming the share options are exercised. The convertible bond is assumed to have been converted into ordinary shares, and the net profit is adjusted to eliminate the interest expense less the tax effect.

Diluted earnings per share for the years ended December 31, 2018 and 2017, is calculated as follows:

(in millions of Korean won, except per share data)	2018	2017
Profit attributable to equity holders of the Parent Company	₩ 47,886	₩ 108,597
Interest cost for convertible bonds	1,788	188
	49,673	108,785
Weighted average number of ordinary shares outstanding	76,863,184	67,769,979
Adjustment for:		
Stock options	193,396	288,051
Convertible bonds	3,820,325	2,033,096
Weighted average number of diluted potential ordinary shares	4,013,721	2,321,147
Weighted average number of ordinary shares for diluted earnings per share	80,876,905	70,091,126
Diluted earnings per share	₩ 614	₩ 1,552

34. Dividends

Dividends paid by the Parent Company for the years ended December 31, 2018 and 2017, are ₩ 10,050 million (₩ 148 per share) and ₩ 10,006 million (₩ 148 per share), respectively.

The dividend to the shareholders of the Parent Company in respect of the year ended December 31, 2018, of ₩ 127 per share, amounting to total dividends of ₩ 10,053 million, is to be proposed at the annual general shareholders' meeting on March 26, 2019. The Company's consolidated financial statements as at December 31, 2018, do not reflect this dividend payable.

35. Cash Generated from Operations

Details of cash generated from operations for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	**2018**	**2017**
Profit before income tax	₩ 130,670	₩ 153,298
Adjustments :		
Impairment loss on trade receivables	3,084	1,154
Depreciation	67,650	60,733
Amortization	67,379	69,085
Impairment losses on intangible assets	8,320	52,238
Gain on disposal of property and equipment	(229)	(211)
Loss on abandonment of property and equipment	623	459
Gain (loss) on disposal of intangible assets	(1,580)	(803)
Retirement benefit expense	28,609	23,354
Compensation cost of share-based payments	14,142	9,834
Interest income	(41,783)	(14,589)
Interest expense	9,356	11,240
Dividend income	(381)	(2,481)
Share of net profit (loss) of associates	(6,652)	(9,036)
Loss on disposal of equity method investments	2,165	4,031
Gain on disposal of equity method investments	(38,650)	(22,216)
Impairment losses on equity method investments	36,747	13,858
Gain on disposal of available-for-sale securities	-	(8,855)
Loss on disposal of available-for-sale securities	-	358
Impairment losses on available-for-sale securities	-	9,753
Gain on disposal of financial assets at fair value through profit or loss	(7,443)	-
Loss on disposal of financial assets at fair value through profit or loss	269	-
Gain on valuation of financial assets at fair value through profit or loss	(23,830)	-
Loss on valuation of financial assets at fair value through profit or loss	23,602	-
Loss on disposal of financial assets at fair value through other comprehensive income	272	-
Impairment losses on other assets	2,871	312
Gain on valuation of derivative financial instruments	(988)	(51,708)
Loss on valuation of derivative financial instruments	732	13,253
Gain on transaction of derivative financial instruments	-	(30)
Other Impairment loss on trade receivables	3,761	881
Changes in operating assets and liabilities	-	-
Trade receivables	(1,482)	(1,951)
Inventories	(8,951)	538
Other current financial assets	(63,994)	(45,778)
Other current assets	(91,627)	(27,737)
Other non-current assets	(6,758)	(2,925)
Trade payables and other payables	154,417	3,352
Other current liabilities	393,992	122,147
Other current financial liabilities	(782)	17,036
Other non-current financial liabilities	882	-
Other non-current liabilities	(2,441)	(3,077)
Net defined benefit liabilities	(33,329)	(28,180)
Other long-term employee benefit liabilities	(2,887)	(3,576)
Other provisions	882	(1,869)

Others	(8,605)	20,406
Cash generated from operations	₩ 608,033	₩ 362,297

Significant transactions not affecting cash flows for the years ended December 31, 2018 and 2017 are as follows:

(in millions of Korean won)	**2018**	**2017**
Write-offs of trade receivables	₩ 336	₩ 2,846
Provision for restoration to specific property and equipment account	2,258	72
Change of other payables related to acquisition of property and equipment	5,628	5,576
Change of other payables related to acquisition of intangible assets	540	951
Change of advanced payments related to acquisition of property and equipment	-	1,840
Change of advanced payments related to acquisition of intangible assets	8,636	150
Change of advances from customers and deferred revenues related to disposal of intangible assets	10,325	-
Payment of the transfer consideration by issuing own equity instruments	-	42,620
Acquisition of investments in associates by investment in kind with loans receivable	-	4,140
Transfer from long-term available-for-sale securities to investments in associates	1,977	6,093
Conversion of convertible bonds	2,990	5,979
Conversion of redeemable convertible preferred shares	4,456	22,667
Transfer to current portion of long-term borrowings	575,931	170,300

Changes in net liabilities arising from financial activities for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	**Other assets**		**Liabilities from financing activities**		**Total**
	Cash and cash equivalents	**Short-term financial assets**	**Short-term borrowings**	**Long-term borrowings**	
At January 1, 2018	₩ 1,116,793	₩ 394,152	₩ (174,372)	₩ (620,808)	₩ 715,765
Cash flows	9,747	514,098	139,350	(3,229)	659,966
Exchange differences	30,483	8,305	(2)	-	38,786
Changes in consolidation scope	89,990	7,661	(5,309)	(7,838)	84,503
Transfer from/to current portion	-	-	(575,931)	575,931	-
Unwind of discount	-	-	(1,788)	(312)	(2,100)
Others (conversion of convertible bond, etc.)	-	-	8,572	11,261	19,833
At December 31, 2018	₩ 1,247,013	₩ 924,215	₩ (609,480)	₩ (44,995)	₩ 1,516,753

(in millions of Korean won)

	Other assets		Liabilities from financing activities		Total
	Cash and cash equivalents	Short-term financial assets	Short-term borrowings	Long-term borrowings	
At January 1, 2017	₩ 641,644	₩ 236,748	₩ (203,942)	₩ (795,927)	₩ (121,477)
Cash flows	484,863	156,920	201,607	250	843,640
Exchange differences	(9,714)	483	-	-	(9,231)
Changes in consolidation scope	-	-	(6,483)	-	(6,483)
Transfer from/to current portion	-	-	(170,300)	170,300	-
Unwind of discount	-	-	(450)	(1,410)	(1,860)
Others (conversion of convertible bond, etc.)	-	-	5,195	5,979	11,174
At December 31, 2017	₩ 1,116,793	₩ 394,152	₩ (174,372)	₩ (620,808)	₩ 715,765

36. Commitments and Contingencies

The Company provided the following guarantees as at December 31, 2018 and 2017:

(*in millions of Korean won)*

Beneficiary	Guarantor	Amount 2018	Amount 2017	Guaranteed item
Employees[1]	Woori Bank	₩ 292	₩ 175	Employee loans
Customers[2]	Daehan Savings Bank, etc.	4,923	13,334	Guarantee instalment for sales
Credit guarantee	Intercontinental Hongkong, etc.	1,144	-	Credit guarantee for LC

[1] The Company provided its employees payment guarantee with banks for the employees' bank loans related to their welfare and the Company's deposits of ₩ 9,786 million are pledged as collateral.

[2] Debt guarantee provided for the customer's installment amount for financial institutions among the purchase amount. In relation to such debt guarantee, one promissory note (₩ 300 million) and financial instruments of ₩ 250 million of the Company are provided as collateral.

The Company was provided the following guarantees by others as at December 31, 2018 and 2017:

(in millions of Korean won)

Guarantor	Details	Amount 2018	Amount 2017	Beneficiary
Seoul Guarantee Insurance and others	Performance guarantee and others	₩ 7,928	₩ 6,459	Korea Workers' Compensation & Welfare Service, etc.
Korea Technology Finance Corporation	General Guarantee for borrowings	-	250	KEB Hana Bank, etc.
Korea Credit Guarantee Fund	Guarantee for borrowings	1,523	-	Woori Bank, etc.
TRAVIX TRAVEL USA INC	Performance guarantee	112	-	Customers
		₩ 9,563	₩ 6,709	

In addition to the above, the Company has been received a payment guarantee from KB Kookmin Bank regarding the issuance of exchangeable bonds (Note 19).

As at December 31, 2018, the Company is involved in 16 lawsuits amounting to ₩ 12,818 million as a defendant or co-defendant. The Company does not expect that these cases would have a material impact on its consolidated financial statements.

The Company's agreements with financial institutions as at December 31, 2018, are as follows:

(in millions of Korean won)

Financial Institution	Agreements	Maximum limit	Amount executed
Industrial Bank of Korea	Loans for operation capital	₩ 2,000	₩ -
Industrial Bank of Korea	Loans for operation capital	200	-
Woori Bank	Credit limit of borrowings	958	958
Shinhan Bank	Credit limit of borrowings	500	500
Woori Bank	General borrowings	5,000	5,000
KB CAPITAL	General borrowings	22	22
Shinhan Bank	General loans (limit)	2,500	-
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for operation capital	172	172
THE KUMAMOTO DAI-ICHI SHINKIN BANK	Loans for investments	1,401	1,401
Japan Finance Corporation.	Loans for investments	26	26
Orix	Loans for operation capital	157	157
Woori Bank	General borrowings	916	916
KB Kookmin Bank	General borrowings	20,000	20,000
Shinhan Bank	General borrowings	770	770
Shinhan Bank	Loans for operation capital	50	50
Industrial Bank of Korea	Loans for operation capital	600	600
		₩ 35,273	₩ 30,573

In 2016, the Parent Company entered into a securities lending agreement with each of two underwriters of the exchangeable bonds, Citigroup Global Markets Limited and Morgan Stanley & Co. International plc for up to an aggregate 2,191,885 shares of LOEN ENTERTAINMENT, INC., equivalent to 100% of the total exchangeable shares, 8.67% of the ownership. According to the agreement, the shares will be lend up to the date specified such as the date of the fifth anniversary of the issuance of the bonds, the date on which all of the bonds are redeemed, or exchanged through the underwriters' agent, NH Investment & Securities Co., Ltd. However, shares subject to the agreement became treasury shares of the Parent Company due to the merge with Kakao M Corp. (formerly, LOEN ENTERTAINMENT, INC.) in 2018. As a result, the number of treasury shares subject to the agreement became 1,791,466 shares after the merger.

The Company granted a right to a customer for reselling equipment for screen golf to the Company at 50% of a price at which it sold to a customer after a certain period of time, and the Company recognized the expected amount of a repurchase as a provision.

(in millions of Korean won)

Sales subject to repurchase	Repurchase agreement	Provision	Contingent liabilities
₩ 4,218	₩ 2,109	₩ 844	₩ 1,265

In accordance with the shareholder agreements in relation to Kakaopay Corp. the right to request a subsidiary to issue new shares for an additional 9.9% to the extent that it does not affect the Company's control is provided to non-controlling interest investors within three years after the initial investment. If a subsidiary issues new shares with the approval of the Board of Directors non-controlling interest investors may take over those shares at $150,000,000. In addition, in accordance with the shareholder agreements, If it is determined that reduced cooperation and collaboration in the case of changes in governance structure may cause difficulties in management and operation under the above agreements, the non-controlling interest investors of the subsidiary may request the Parent Company to purchase those shares for a period of time in the agreements at fair value, and the management of the Company believes that the Company can control prerequisites for investors to claim the purchase and therefore, as at December 31, 2018, the Company determines that there is no possibility for investors to claim the purchase.

In accordance with the agreements with non-controlling interests of certain subsidiaries including Kakao Page Corp., the Company is required to obtain a consent from investors, when the Company intends to dispose of the investments in subsidiaries within the period specified in the agreements through a transfer or other methods to third party other than stipulated manners in the agreements such as exercise of tag-along right. (Note 1).

Financial instruments restricted as at December 31, 2018 and 2017:

(in millions of Korean won)

	2018	2017	Purpose of restriction
Short-term financial instruments	₩ 20,000	₩ 10,000	Withdrawal restriction in relation to firm banking[1]
	559	536	Related to legal procedure
	1,350	1,350	Pledged as collateral for Shinhan Card and etc.[2]
	9,286	8,086	Payment guarantee for employees' loan
	250	-	Guarantee for the third party
	4,935	4,607	Payment guarantee for lease
	1,150	-	Pledged as collateral for a franchise contract
	250	400	Guarantee for instalment sales of a customer
	239,600	-	Pledged as collateral for overseas exchangeable bonds[3]
	1,800	-	Performance guarantee
	1,000	-	Pledged as collateral for Shinhan Card
Long-term financial instruments	500	-	Payment guarantee for employee's loan
Investments in associates	45,856	-	Lock-up[4]
	₩ 326,537	₩ 24,979	

[1] The withdrawal is restricted in relation to the firm banking contract with DGB Daegu Bank.
[2] Pledged as collateral in relation to covering expected loss incurred to credit card companies about business cooperation agreements with Shinhan Card and other credit card companies for 'Automated Payment via Kakao Pay'.
[3] Payment guarantee is provided by KB Kookmin Bank in relation to exchangeable bonds and time deposits of ₩ 239,600 million are provided as collateral for the payment guarantee (Note 19).
[4] 10,421,421 ordinary shares are locked up from May 10, 2018 to May 19, 2019 for additional listing of UBCARE CO., LTD.

The following assets are pledged as collateral in relation to guarantees for contract fulfilment as at December 31, 2018:

(in millions of Korean won)

Asset	Beneficiary	Book value	Collateralized amount	Type of Guarantee
Financial instruments	Seoul Guarantee Insurance Company	₩ 1,800	₩ 10,100	Payment performance for ticket sales
	Shinhan Card	1,000	1,300	Pledged as collateral for Shinhan Card

In addition to the above, treasury shares and short-term financial instruments of the Parent Company regarding the payment guarantee received from KB Kookmin Bank for the exchangeable bonds are provided as collateral (Notes 19 and 36).

As at December 31, 2018, the Company has signed agreements with shareholders of KakaoBank of Korea Corp. to hold call options and grant put options in relation to investment to KakaoBank of Korea Corp. as follows:

		Details
Call option	Requisites	In case the Bank Act has been amended so that KakaoBank of Korea Corp.'s maximum limit of stake with voting rights raised to 15% or more with an approval from the financial authorities in accordance with related laws.
	Rights	Korea Investment Holdings Co., Ltd. should sell its shares to the company at face value up to the company's maximum holding limit and should sell remaining shares to the third party to make Korea Investment Holdings Co.,Ltd's share the company's maximum holding limit (-) 1 share.
Put option	Requisites	In case the Bank Act has been amended so that KakaoBank of Korea Corp.'s maximum limit of stake with voting rights raised to 15% or more.
	Obligations	All or part of the shares held by Korea Investment Holdings Co.,Ltd. should be purchased up to the Company's equity limit by Kakao Corp.

In addition, the Company's rights relating to convertible preferred shares of KakaoBank of Korea Corp., held by the Company are as follows:

	Details
Voting right	No voting right
Preferred dividends right	Preferred dividend at a rate of 1% (participating/Non-cumulative)
Convertible ratio	One share of ordinary share per one preferred share
Conversion conditions	Convertible into ordinary share within 2 years from the effective date of the Bank Act, if the Bank Act is amended by September 22, 2025 or within 2 years from September 23, 2025, if it is not amended (If conversion right is not exercised within conversion period, the conversion right is expired and able to be converted into ordinary share at the same time)

The Company cannot exercise the option indicated above and the conversion right as at December 31, 2018. However, when the Company qualifies the condition as the excess shareholder in accordance to the law and regulation of the Special Act on the Establishment and Operation of Internet-specialized Banking amended in October 16, 2018 and enforced in January 17, 2019 and the financial authorities approve the company as the excess shareholders, the Company is able to the right to hold maximum 34% of the shares with voting right of KakaoBank of Korea Corp. In this case, the shares of KakaoBank of Korea Corp. can be classified as the investment in associate and others in accordance to the percentage of investment, ownership of

shares with voting right and etc.

37. Business Combinations

In 2018, the Company acquired the shares of nineteen companies including JOH&Company, which became its subsidiaries. Details of thze percentage of ownership acquired, the consideration paid and goodwill recognized thereto are as follow:

(in millions of Korean won) Company	Percentage of ownership acquired (%)	Consideration	Goodwill
E&T Story Entertainment	60.0	₩ 700	₩ 114
Nylon Korea Media	65.7	1,296	898
Acciio Inc.	50.5	4,700	2,180
JOH&Company	100.0	29,334	18,044
SamyangCNC Co.,Ltd.[2]	50.0	5,872	5,275
luxi Co., Ltd.	100.0	24,765	20,868
KIWI PLUS	55.8	14,000	7,937
DK CORPORATION	100.0	3,734	2,851
ZUBON Inc.	100.0	108	68
Pinplay	64.5	26,900	14,346
J,WIDE-COMPANY[1]	100.0	8,500	6,437
READY ENTERTAINMENT[1]	100.0	15,872	8,379
BH Entertainment[1]	100.0	27,000	23,667
SOOP management[1]	99.4	14,000	15,992
SONNORI CORP.	58.3	9,929	4,830
NeoBazar	68.4	17,760	13,555
DA'ON CREATIVE	66.2	9,924	8,985
MOVILL Co., Ltd	70.0	1,400	1,517
TIDESQAURE[1,2]	28.9	34,666	15,509
		₩ 250,461	₩ 171,453

[1] Presented at a provisional amount as purchase price allocation amount related to the business combination is not determined.

[2] Classified as a subsidiary although the ownership is less than 50% as the Company is considered to have a control over the entity. As at December 31, 2018, the Company holds 51% of the ownership due to additional acquisition of shares during 2018.

Details of the consideration transferred, fair value of the acquired identifiable assets and liabilities at the acquisition date, and non-controlling interests in relation to business combinations in 2018, are as follows:

(in millions of Korean won)

Company	Consideration transferred	Assets acquired and liabilities assumed			Goodwill	Total
		Fair value of net asset	Non-controlling interest	Subtotal		
E&T Story Entertainment	₩ 700	₩ 977	₩ (391)	₩ 586	₩ 114	₩ 700
Nylon Korea Media	1,296	605	(208)	398	898	1,296
Acciio Inc.	4,700	4,986	(2,466)	2,520	2,180	4,700
JOH&Company	29,334	11,290	-	11,290	18,044	29,334
SamyangCNC Co.,Ltd.	5,872	853	(256)	597	5,275	5,872
luxi co., ltd.	24,765	3,896	-	3,896	20,868	24,765
KIWI PLUS	14,000	10,871	(4,807)	6,063	7,937	14,000
DK CORPORATION	3,734	883	-	883	2,851	3,734
ZUBON Inc.	108	40	-	40	68	108
Pinplay	26,900	19,452	(6,898)	12,554	14,346	26,900
J,WIDE-COMPANY	8,500	2,063	-	2,063	6,437	8,500
READY ENTERTAINMENT	15,872	7,493	-	7,493	8,379	15,872
BH Entertainment	27,000	3,333	-	3,333	23,667	27,000
SOOP management	14,000	(2,005)	13	(1,992)	15,992	14,000
SONNORI CORP.	9,929	(1,539)	6,638	5,098	4,830	9,929
NeoBazar	17,760	4,783	(577)	4,206	13,555	17,760
DA'ON CREATIVE	9,924	1,419	(480)	939	8,985	9,924
MOVILL Co,Ltd	1,400	(167)	50	(117)	1,517	1,400
TIDESQAURE	34,666	66,696	(47,539)	19,157	15,509	34,666
	₩ 250,461	₩ 135,929	₩ (56,921)	₩ 79,008	₩ 171,453	₩ 250,461

38. Related Parties Transactions

The list of related parties as at December 31, 2018 and 2017, is as follows:

	2018
Relationship	**Related parties**
Associates	Adcredit, DMS Network, Inc., NBT Inc., Dunamu Inc., Futurewiz, IGIS Networks, Dunamu Investment Management Co., Ltd., Dunamu&Partners, ROOTONESOFT, Tapas Media, Inc., DAUM Venture Fund, NBT AMERICA INC., NBT CHINA INC, MannaCEA , Manna Town, , Farmit, Farmit2, Oscar Entertainment., Left Right Co., Ltd. , SCI VENTURE, INC., Tangram Factory, TANGRAMFACTORY AMERICA, INC., CNT TECH CO.,LTD., You Are the Designer, LUXROBO Co., Ltd., Leferi Inc., Deleo Korea Co.,Ltd., D&C MEDIA CO.,LTD., D&C OF STORM CO.,LTD., K Cube NEO Fund, Skelter Labs, Inc., TOROOC Inc., DIGISONIC Co., Ltd., Supergene Inc., BUNJANG Corp., (Dreamcide SPC Ltd., InnoSignal Co.,Ltd., PoteNit Co.,Ltd., Korea Credit Data, Doctorbrain SPC Ltd., CLAIR, Inc., KIF-Kakao Wooribank Technology Financing Fund, 13MILE.CO.LTD, ADSOTA CORP., CARDOC Inc., Kakao Kids (formerly, BLUEPIN Inc.), Fixel Hub Co.,Ltd., HASYS, FOR YOUR KIDS CO.,LTD., Action Square Co., Ltd., NOWBUSKING COMPANY, LINE WORK Corp., CHEQUER Inc., LUFTT KOREA Inc., Rebittance Inc., mycelebs, DAIWAON. C. I. INC, Haksan Publinshing Co.Ltd., peoplefund, Seoul Media Comics, Allstay Co.,LTD, UBCARE CO., LTD. and other 63 companies
Joint venture	DAUM KAKAO PHILIPPINES CORP.
Other related parties	K Cube Holdings Co., Ltd., T for Invest, New learn English Inc., Onyx K., MODUDA, PLUS 2 PERCENT, NPLUTO, Daeheung Co., Ltd., kakao Impact Foundation

	2017
Relationship	**Related parties**
Associates	Adcredit, DMS Network, Inc., NBT Inc., Dunamu Inc., Tapas Media, Inc., DAUM Venture Fund, DAUM KAKAO PHILIPPINES CORP., NBT AMERICA INC., Manna CEA, Manna Town, Farmit, Farmit2, Neobazar, PT.Neo Bazar Indonesia, Silver Star Games Inc., Oscar Entertainment, Left Right Co., Ltd., SCI VENTURE, INC. (formerly, Bitmarket.ph, Inc.), Tangram Factory, TANGRAMFACTORY AMERICA, INC., SONNORI CORP. (formerly, ROI GAMES CORP.), Toonnori Corp.(formerly, Roicomi co.,ltd), CNT TECH CO.,LTD., JOH&Company, You are the designer, LUXROBO Co., Ltd., Leferi Inc., Deleo Korea Co.,Ltd. (formerly, Wex 24 Korea), D&C MEDIA CO.,LTD., K Cube NEO Fund, Skelter Labs, Inc., TOROOC Inc., DIGISONIC Co., Ltd., Supergene Inc., BUNJANG Corp. (formerly, Quicket Co., Ltd.), Dreamcide SPC Ltd., InnoSignal Co.,Ltd., PoteNit Co.,Ltd., Korea Credit Data, Doctorbrain SPC

	Ltd., CLAIR, Inc., KIF-Kakao Wooribank Technology Financing Fund, others (60 companies)
Other related parties	K Cube Holdings Co., Ltd., T for Invest (formerly, Climix edu), New learn English Inc., Onyx K., Smart and Growth, MODUDA, PLUS 2 PERCENT, Sounds Good Co.,Ltd., NPLUTO CORPORATION, BeCONN Games, Kyros

Transactions with the related parties for the years ended December 31, 2018 and 2017 and the receivables from and payables to the related parties as at December 31, 2018 and 2017, are as follows:

Transactions

(in millions of Korean won)	2018					
	Revenues			Purchases		
	Sales	Interest income	Other income	Service fee	Advertising expense	Others
Associates						
MannaCEA	₩ 54	₩ -	₩ -	₩ 21	₩ -	₩ -
Dunamu Inc. [2]	1,454	-	-	134	-	-
You Are the Designer	1	-	-	-	-	-
CNT TECH CO.,LTD.	1,049	-	-	570	146	1
Leferi Inc.	57	-	-	-	-	-
CARDOC Inc.	39	-	-	-	-	-
BUNJANG Corp.	-	330	-	-	-	40
CLAIR, Inc.	-	-	-	-	-	507
Korea Credit Data	42	-	-	150	-	-
NOWBUSKING COMPANY	3	-	-	1	-	1
Kakao Kids (formerly, BLUEPIN Inc.)[1]	499	-	-	63	-	17,666
futurewiz	45	-	-	-	-	-
NBT Inc.	305	-	-	220	-	-
Fixel Hub Co.,Ltd.	3	-	-	100	-	-
Left Right Co., Ltd.	-	-	-	-	-	-
D&C MEDIA CO.,LTD.	57	-	-	12,004	-	37
Doctorbrain SPC Ltd.	4	-	-	-	-	-
K Cube NEO Fund	-	-	385	-	-	-
KIF-Kakao Wooribank Technology Financing Fund	-	-	1,368	-	-	-
DAIWAON. C. I. INC	4	-	-	4	-	1
Haksan Publinshing Co.Ltd.	-	-	-	9	-	-
FOR YOUR KIDS CO.,LTD.	479	-	-	-	-	-
LUFTT KOREA Inc.	-	-	-	-	-	-
13MILE.CO.LTD	-	4	-	2	-	-
peoplefund	130	-	-	-	-	-
Tapas Media, Inc.	144	-	-	-	-	-
HASYS	2,054	-	-	-	-	-
Pinplay	5	-	-	-	-	-
WishLink	16	-	-	-	-	-
	₩ 6,442	₩ 334	₩ 1,753	₩ 13,279	₩ 146	₩ 18,252
Other related parties						
kakao Impact Foundation	₩ 63	₩ -	₩ -	₩ -	₩ -	₩ 4,000
NPLUTO	-	-	-	-	-	197
Daeheung Co., Ltd.	-	42	-	-	-	-

₩ 63	₩ 42	₩ -	₩ -	₩ -	₩	4,197
₩ 6,505	₩ 376	₩ 1,753	₩ 13,279	₩ 146	₩	22,449

[1] Includes purchases of investments in Pinplay from Kakao Kids (formerly, BLUEPIN Inc.) in 2018.

[2] Received dividends of ₩ 800 million from Dunamu Inc. in 2018.

Transactions

(in millions of Korean won)	2017					
	Revenues			Purchases		
	Sales	Interest income	Other income	Service fee	Advertising expense	Others
Associates						
NBT Inc.	₩ 800	₩ -	₩ 45	₩ 1,454	₩ 366	₩ -
WishLink	-	-	-	655	-	-
Dunamu Inc.	838	-	-	89	-	-
Tangram Factory	4	79	-	-	-	-
Leferi Inc.	1	-	-	-	-	-
MannaCEA	17	-	-	-	-	21
Left Right Co., Ltd.	-	-	-	11	-	-
Oscar Entertainment	-	-	-	-	-	34
You are the designer	5	-	-	-	-	12
CNT TECH CO.,LTD.	462	-	-	277	814	1
Tapas Media, Inc.	155	-	-	-	-	-
CLAIR, Inc.	-	-	-	-	-	-
BUNJANG Corp. (formerly, Quicket Co., Ltd.)	-	-	-	1	-	-
LUXROBO Co., Ltd.	-	-	-	-	-	3
D&C MEDIA CO.,LTD	16	-	-	6,431	-	-
UserStory Lab	-	-	-	-	-	200
Korea Credit Data	2	-	-	-	-	-
Doctorbrain SPC Ltd.	1	-	-	-	-	-
	₩ 2,302	₩ 79	₩ 45	₩ 8,917	₩ 1,179	₩ 272
Other related parties						
Moduda	₩ -	₩ -	₩ -	₩ -	₩ -	₩ -
	₩ 2,302	₩ 79	₩ 45	₩ 8,917	₩ 1,179	₩ 272

Receivables and Payables

(in millions of Korean won)

	2018				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates					
MannaCEA	₩ -	₩ -	₩ -	₩ 124	₩ -
CNT TECH CO.,LTD.	65	-	-	97	-
NOWBUSKING COMPANY	3	-	-	-	-
Dunamu Inc.	113	-	-	12	-
Kakao Kids (formerly, BLUEPIN Inc.)	16	-	-	-	-
Fixel Hub Co.,Ltd.	1	-	2	7	-
Left Right Co., Ltd.	-	-	-	-	-
D&C MEDIA CO.,LTD.	11	-	2,316	634	-
Dreamcide SPC Ltd.	-	-	400	-	-
Doctorbrain SPC Ltd.	1	-	400	-	-
Haksan Publinshing Co.Ltd.	-	-	1,394	787	-
DAIWAON. C. I. INC	-	-	-	254	-
Seoul Media Comics	-	-	785	143	-
CLAIR, Inc.	-	-	-	33	-
NBT Inc.	9	-	-	5	-
FOR YOUR KIDS CO.,LTD.	113	-	-	-	-
You Are the Designer	-	-	-	-	-
CARDOC Inc.	-	-	-	-	-
LUFTT KOREA Inc.	-	-	-	-	-
BUNJANG Corp.	-	-	-	11	-
13MILE.CO.LTD	-	450	4	2	-
peoplefund	82	-	-	-	-
HASYS	221	-	530	520	-
Allstay Co.,LTD	-	100	-	1	-
	₩ 635	₩ 550	₩ 5,832	₩ 2,631	₩ -
Other related parties					
kakao Impact Foundation	₩ 28	₩ -	₩ -	₩ -	₩ -
	₩ 663	₩ 550	₩ 5,832	₩ 2,631	₩ -

Receivables and Payables

(in millions of Korean won)

	2017				
	Receivables			Payables	
	Trade receivables	Loans	Other receivables	Non-trade payables	Other payables
Associates					
NBT Inc.	₩ 130	₩ -	₩ -	₩ 119	₩ 37
Dunamu Inc.	60	-	-	34	-
3 Point Inc.[1]	3	50	-	-	-
WishLink	-	-	-	10	-
SONNORI CORP.. (formerly, ROI GAMES CORP.)	-	-	500	-	-
Tangram Factory	26	-	-	-	-
MannaCEA	-	-	-	1	-
Left Right Co., Ltd.	-	-	-	-	-
CNT TECH CO.,LTD.	98	-	-	210	-
D&C MEDIA CO.,LTD.	17	-	1,725	789	-
Tapas Media, Inc.	5	-	-	-	-
BUNJANG Corp. (formerly, Quicket Co., Ltd.)	-	-	-	-	-
Dreamcide SPC Ltd.	-	-	400	-	-
Doctorbrain SPC Ltd.	-	-	401	-	-

	₩ 339	₩ 50	₩ 3,026	₩ 1,164	₩ 37
Other related parties					
Onyx K.	₩ -	₩ -	₩ -	₩ -	₩ -
	₩ -	₩ -	₩ -	₩ -	₩ -
	₩ 339	₩ 50	₩ 3,026	₩ 1,164	₩ 37

[1] As at December 31, 2017, allowance for doubtful accounts has been set for the total amount of loans to 3 Point Inc..

Loans arising from related parties for the periods ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)

	2018				
	Beginning balance	**Loans**	**Repayments**	**Changes in scope of consolidation**	**Ending balance**
Associates					
3Points Inc.[1]	₩ 50	₩ -	₩ -	₩ (50)	₩ -
SONNORI CORP.	-	1,500	-	(1,500)	-
BUNJANG Corp.	-	150	(150)	-	-
Allstay Co.,LTD	-	300	(500)	300	100
	₩ 50	₩ 1,950	₩ (650)	₩ (1,250)	₩ 100
Other related parties					
Daeheung Co., Ltd.	₩ -	₩ 2,000	₩ (2,000)	₩ -	₩ -
	₩ 50	₩ 3,950	₩ (2,650)	₩ (1,250)	₩ 100

[1] 3Points Inc. was excluded from the details of loans arising from the related parties due to being excluded from the scope of related parties.

(in millions of Korean won)

	2017			
	Beginning balance	**Loans**	**Contribution in kind[1]**	**Ending balance**
Associates				
3Points Inc.	₩ 50	₩ -	₩ -	₩ 50
Tangram Design Lab Inc.	2,100	-	(2,100)	-
Tangram Factory	1,540	500	(2,040)	-
	₩ 3,690	₩ 500	₩ (4,140)	₩ 50

During 2018, the Company made contribution sin kind and in cash to certain related parties (Note 16).

Key management compensation

The compensation paid or payable to key management for the years ended December 31, 2018 and 2017 consists of:

(in millions of Korean won)	2018	2017
Salaries	₩ 2,159	₩ 957
Retirement benefit expense	48	44
Other long-term employee benefits	28	23
Share-based payments	473	275
	₩ 2,708	₩ 1,300

39. Credit Risk

Credit risk arises from cash and cash equivalents, contractual cash flows of debt investments, favorable derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to corporate and individual customers, including outstanding receivables.

(a) Risk management

Credit risk is managed on a group basis. For banks and financial institutions, only independently rated parties with a minimum rating of 'A' are accepted.

If corporate customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors.

There are no significant concentrations of credit risk, whether through exposure to individual customers, specific industry sectors and/or regions.

The Company's investments in debt instruments are considered to be low risk investments.

(b) Security

For some trade receivables, the Company may obtain security in the form of guarantees or letters of credit, etc. which can be called upon if the counterparty is in default under the terms of the agreement.

(c) Impairment of financial assets

The Company has four types of financial assets that are subject to the expected credit loss model:

- trade receivables for sales of goods and provision of services,

· other financial assets carried at amortized cost.

While cash equivalents are also subject to the impairment requirement, the identified impairment loss was immaterial.

A. *Trade receivables*

The Company applies the simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables and contract assets.

To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. Aging analysis of trade receivables as at December 31, 2018, is as follows:

(in millions of Korean won)	2018					
	Current	**Less than 3 months past due**	**Less than 6 months past due**	**Less than 9 months past due**	**Over 9 months**	**Total**
Trade receivables						
Gross carrying amount	₩ 179,015	₩ 13,235	₩ 1,726	₩ 520	₩ 6,742	₩ 201,238

Movements in the loss allowance provision for trade receivables and contract assets for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017
	Trade receivables	**Trade receivables**
Beginning balance – Korean IFRS 1039	₩ 7,762	₩ 8,396
Amounts restated through beginning balance of retained earnings	567	-
Loss allowance as at January 1, 2018 - calculated under Korean IFRS 1109	8,329	8,396
Changes in scope of consolidation	887	34
Increase in loss allowance recognized in profit or loss during the year	2,793	110
Unused amounts reversed	-	(3)
Receivables written off during the year as uncollectible	(4,441)	(776)
Ending balance (2017: amount under Korean IFRS 1039)	₩ 7,568	₩ 7,762

The maximum exposure to credit risk at the reporting date is the carrying amount of trade receivables.

Amounts recognized as 'Impairment loss on trade receivables' in profit or loss in relation to impairment for the years ended December 31, 2018 and 2017, are as follows:

(in millions of Korean won)	2018	2017[1]
	Trade receivables	**Trade receivables**
Changes in loss allowance provision for trade receivables	₩ 2,793	₩ 108
Other financial assets	292	1,046
Impairment loss on trade receivables	3,084	1,154

[1] In the prior year, the impairment of trade receivables was assessed based on the incurred loss model. Individual receivables which were known to be uncollectible were written off by reducing the carrying amount directly. The other receivables were assessed collectively, to determine whether there was an objective evidence that an impairment had been incurred but not yet been identified. For these receivables, the estimated impairment losses were recognized in a separate provision for impairment. The Company considered that there was evidence of impairment if any of the following indicators were present:

- significant financial difficulties for of the debtor
- probability of the debtor's bankruptcy and financial restructuring, and
- default or delinquency in payments

B. Other financial assets amortized cost

Other financial assets at amortized cost include non-trade receivables, loans and other receivables.

Movements in loss allowance provision for other financial assets at amortized cost for the year ended December 31, 2018, are as follows:

(in millions of Korean won)	2018
	Loss allowance provision
Beginning balance - Korean IFRS 1039	₩ 35,674
Amounts restated through beginning balance of retained earnings	1,046
Loss allowance as at initial application date - calculated under Korean IFRS 1109	36,720
Change in scope of consolidation	516
Increase in loss allowance recognized in profit or loss during the year	3,557
Write-offs	965
Ending balance	₩ 41,757

40. Changes in Accounting Policies

40.1 Adoption of Korean IFRS 1109 *Financial Instruments*

As explained in Note 2, the Company has applied Korean IFRS 1109 *Financial Instruments* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures for prior reporting period have not been restated The impact of adoption of Korean IFRS 1109 on the financial statements is as follows:

(a) Classification and measurement of financial instruments

The total impact on the Company's retained earnings due to classification and measurement of financial instruments as at January 1, 2018, is as follows:

(in millions of Korean won)	**Notes**	**Amount**
Beginning balance - Korean IFRS 1039		₩ 402,542
Reclassification of available-for-sale financial assets to financial assets at fair value through profit or loss	1)	9,283
Increase in provision for impairment of trade receivables	39	(475)
Increase in provision for impairment of other financial assets at amortized cost		(881)
Transfer of accumulated impairment losses of financial instruments reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income		4,348
Adjustments to retained earnings from adoption of Korean IFRS 1109		12,276
Beginning balance of retained earnings - Korean IFRS 1109		₩ 414,818

On the date of initial application of Korean IFRS 1109, January 1, 2018, the Company's management has assessed which business models apply to the financial assets held by the Company and has classified its financial instruments into the appropriate Korean IFRS 1109 categories. The main effects resulting from this reclassification are as follows:

(in millions of Korean won)	**Notes**	**Fair value through profit or loss**	**Fair value through other comprehensive income (Available-for-sale financial assets in 2017)**	**Amortized cost (Loans and receivables in 2017)[2]**	**Total**
Financial assets – January 1, 2018[1]					
Beginning balance – Korean IFRS 1039		₩ 53,650	₩ 160,140	₩ 1,875,090	₩ 2,088,880

Reclassification from available-for-sale financial assets to financial assets at fair value through profit or loss	1)	67,185	(67,185)	-	-
Reclassification from other assets to financial assets at amortized cost		-	-	5,769	5,769
Beginning balance - Korean IFRS 1109[1]		₩ 120,835	₩ 92,955	₩ 1,880,859	₩ 2,094,649

[1] The beginning balance as at January 1, 2018, presented available-for-sale financial assets at fair value through other comprehensive income, and loans and receivables at amortized cost, respectively, see the table below for details. These reclassifications have no impact on the measurement categories.

[2] Includes cash and cash equivalents and impairment of financial assets are not included.

The impact on these changes on the Company's equity is as follows:

(in millions of Korean won)	**Notes**	**Effect on accumulated other comprehensive income**	**Effects on fair value through other comprehensive income reserve**	**Effect on retained earnings[1]**
Beginning balance – Korean IFRS 1039		₩ 591	₩ -	₩ 402,542
Reclassification from available-for-sale financial assets to financial assets at fair value through profit or loss	1)	(9,283)	-	9,283
Reclassification of equity investments that are not held for trading from available-for-sale financial assets to financial assets at fair value through other comprehensive income	2)	8,551	(8,551)	-
Reclassification of listed and unlisted debt securities from available-for-sale financial assets to financial assets at fair value through other comprehensive income	3)	142	(142)	-
Transfer of accumulated impairment losses of financial instruments reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income		-	(4,348)	4,348
		(591)	(13,040)	13,631
Beginning balance - Korean IFRS 1109		₩ -	₩ (13,040)	₩ 416,173

[1] Impairment of financial assets are not included. See Note 39.

(i) Reclassification from available-for-sale to fair value through profit or loss

As at January 1, 2018, beneficiary certificates of ₩ 21,488 million, compound financial instruments of ₩ 25,668 million and equity securities of ₩ 20,129 million were reclassified from available-for-sale to financial assets at fair value through profit or loss. They do not meet the criteria to be classified as at amortized cost in accordance with Korean IFRS 1109, because their cash flows do not represent solely payments of principal and interest. Related accumulated other comprehensive income of ₩ 9,283 million were transferred from the available-for-sale financial assets to retained earnings on January 1, 2018. During 2018, the changes in fair value of ₩ 228 million were recognized in profit or loss and deferred income tax of ₩ 55 million were incurred in relation to it.

(ii) Reclassification of equity investments from available-for-sale to fair value through other comprehensive income

The Company elected to present changes in the fair value of its equity investments not for trading previously classified as available-for-sale in other comprehensive income. As a result, assets with a fair value of ₩ 91,142 million were reclassified from available-for-sale financial assets to financial assets at fair value through other comprehensive income. As at January 1, 2018, related accumulated other comprehensive income of ₩ (-)8,551 million were not reclassified to profit or loss even though these assets are disposed of.

(iii) Reclassification of debt instruments from available-for-sale to fair value through other comprehensive income

Listed and unlisted bonds were reclassified from available for sale to fair value through other comprehensive income, as the Company's business model is achieved both by collecting contractual cash flows and selling of these assets. The contractual cash flows of these investments are solely principal and interest. As a result, listed and unlisted bonds with a fair value of ₩ 1,813 million were reclassified from available-for-sale financial assets to debt instruments at fair value through other comprehensive income on January 1, 2018.

(iv) Other financial assets

Equity securities held for trading are all required to be held as fair value through profit or loss under Korean IFRS 1109. There was no impact on the amounts recognized in relation to these assets from the adoption of Korean IFRS 1109.

(v) Reclassifications of financial instruments on adoption of Korean IFRS 1109

On the date of initial application, January 1, 2018, the financial instruments of the Company with any reclassifications noted, were as follows:

(in millions of Korean won)	Measurement category		Carrying amount		
	Korean IFRS 1039	Korean IFRS 1109	Korean IFRS 1039	Korean IFRS 1109[1]	Difference
Current financial assets					
Cash and cash equivalents	Amortized costs	Amortized costs	₩ 1,116,793	₩ 1,116,793	₩ -
Short-term financial instruments	Amortized costs	Amortized costs	394,152	394,152	-
Trade receivables	Amortized costs	Amortized costs	179,238	178,671	(567)
Other financial assets[4]	Amortized costs	Amortized costs	134,343	139,066	4,723
Non-current financial assets					
Beneficiary certificates	Available-for-sale financial assets	Fair value through profit or loss[3]	₩ 21,488	₩ 21,488	₩ -
Equity instruments	Available-for-sale financial assets	Fair value through profit or loss[3]	20,129	20,129	-
Compound financial instruments	Available-for-sale financial assets	Fair value through profit or loss[3]	32,855	32,855	-
Derivative financial assets	Financial assets at fair value through profit or loss	Fair value through profit or loss[3]	53,650	53,650	-
Equity instruments	Available-for-sale financial assets	Fair value through other comprehensive income[2]	83,855	83,855	-
Government bonds	Available-for-sale financial assets	Fair value through other comprehensive income[2]	1,813	1,813	-
Long-term financial instruments	Amortized costs	Amortized costs	10,685	10,685	-
Other non-current financial assets	Amortized costs	Amortized costs	39,879	39,879	-

[1] Impairment of financial assets is included.

[2] Financial assets at fair value through other comprehensive income: Investments in equity instruments and debt instruments.

[3] Financial assets at fair value through profit or loss.

[4] As at January 1, 2018, investments in performance planning amounting to ₩ 5,769,054 thousand were included in amounts reclassified from other assets to financial assets at amortized cost.

(b) Impairment of Financial Assets

The Company has three types of financial assets subject to Korean IFRS 1109's new expected

credit loss model:

• Trade receivables depending on recognition of operating income

• Debt instruments at fair value through other comprehensive income

• Debt instruments at amortized cost

Upon adoption of Korean IFRS 1109, accounting policies for recognition of impairment have changed. The impact of the change in impairment methodology on the Company's beginning balance of retained earnings is disclosed in the table on *(a)* above.

The Company applies the simplified approach to measure the loss allowance at an amount equal to lifetime expected credit losses for trade receivables and other receivables at amortized cost.

40.2 Adoption of Korean IFRS 1115 *Revenue from Contracts with Customers*

As explained in Note 2, the Company has applied Korean IFRS 1115 *Revenue from Contracts with Customers* on January 1, 2018, the date of initial application. In accordance with the transitional provisions in Korean IFRS 1109, comparative figures for prior reporting period have not been restated The impact of adoption of Korean IFRS 1109 on the financial statements is as follows:

The impact on the financial statements due to the application of Korean IFRS 1115 at the date of initial application (January 1, 2018) is as follows:

(in millions of Korean won)	**December 31, 2017 (before adjustment)**	**Adjustment**	**January 1, 2018 (after adjustment)**
Other current assets[1,2]	₩ 93,258	₩ 2,828	₩ 96,086
Total assets	6,349,428	2,828	6,352,256
Other current liabilities[2,3]	424,553	1,292	425,845
Total liabilities	1,886,506	1,292	1,887,797
Retained earnings	402,542	747	403,289
Non-controlling interests	433,783	789	434,573
Total equity	₩ 4,462,923	₩ 1,536	₩ 4,464,459

(i) Accounting for incremental costs of obtaining a contract

Under the previous standard, incremental costs of obtaining a contract such as a market fee for game publishing contract were expensed as they do not meet the requirement to recognize as assets.

Korean IFRS 1115 expects that such costs would be directly incurred from a contract and be recovered after generating resources used in performance of a contract.

To reflect this revised standards, incremental costs for obtaining a contract amounting to ₩ 2,747,400 thousand were recognized as assets.

(ii) Accounting for sales with a right of return

When the customer has a right to return the product within a given period, the Company is obliged to refund the purchase price. The Company previously recognized a provision for returns which was measured on a net basis at the margin on the sale.

Under Korean IFRS 1115, a contract liability (a refund liability) for the expected refunds to customers is recognized. At the same time, a right to recover the product from the customer where the customer exercises the right of return is recognized as a contract asset.

To reflect this revised standards, provisions for sales returns amounting to ₩ 130,391 thousand were reclassified on January 1, 2018 as a refund liability of ₩ 640,889 thousand and a refund asset of ₩ 510,498, respectively, and the reclassified amounts are included in other current assets and other current liabilities, respectively.

(iii) Identifying a performance obligation and allocation of transaction price

Under the previous standard, one contract was considered as one performance obligation and revenue was recognized accordingly. Under Korean IFRS 1115, revenue is recognized for each performance obligation based on the relative individual selling price for various performance obligations identified from a contract.

To reflect this revised standards, other current assets and other current liabilities, recognized in accordance with the previous accounting policy, were decreased by ₩ 429,992 thousand and increased by ₩ 650,898 thousand respectively.

Financial statement line items affected by the adoption of the new rules in the current period are as follows:

Statement of financial position

(in millions of Korean won)	**Reported amount (December 31, 2018)**	**Adjustment**	**Amount before application of Korean IFRS 1115[1]**
Other current assets	₩ 223,605	₩ (4,042)	₩ 219,564
Total assets	7,959,542	(4,042)	7,955,501
Other current liabilities	705,998	(1,997)	704,001

Total liabilities	2,332,385	(1,997)	2,330,388
Retained earnings	453,400	(959)	452,442
Non-controlling interests	490,307	(1,086)	489,221
Total equity	₩ 5,627,158	₩ (2,045)	₩ 5,625,113

[1] Amounts include adjustments arising from adoption of Korean IFRS 1109.

Statement of profit or loss

(in millions of Korean won)	**Reported amount (2018)**	**Adjustment**	**Amount before application of Korean IFRS 1115**
Operating income	₩ 2,416,992	₩ -	₩ 2,416,992
Operating expenses[1]	2,344,044	508	2,344,552
Other non-operating income (expenses)	(11,241)	-	(11,241)
Finance income (costs)	62,310	-	62,310
Share of net profit (loss) of associates and joint venture	6,652	-	6,652
Income tax expense	114,781	-	114,781
Profit for the year	₩ 15,889	₩ (508)	₩ 15,380
Total comprehensive income for the year	₩ 24,223	₩ (508)	₩ 23,714

[1] Includes Impairment loss on trade receivables.

Statement of cash flows

(in millions of Korean won)	**Reported amount (2018)**	**Adjustment**	**Amount before application of Korean IFRS 1115**
Profit for the year	₩ 15,889	₩ (508)	₩ 15,380
Changes in assets and liabilities			
Decrease (increase) in other current assets	(108,627)	1,214	(107,414)
Increase (decrease) in other current liabilities	390,806	(705)	390,101
Cash generated from operations	₩ 491,470	₩ -	₩ 491,470

Under Korean IFRS 1115, the cash flow from other current assets and liabilities was increased and decreased by ₩ 1,213 million and ₩ 705 million respectively. However, total cash generated from operations is identical, compared to the cash flows under the previous standard.

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