

Redefining Customer Engagement through Digital Transformation

Samuel Tsien
Group CEO

24 September 2018

Digital Transformation is an integral part of our Corporate Strategy

DEEPEN PRESENCE IN CORE MARKETS

A leading, well-diversified Asian financial services group with a broad geographical footprint in North and Southeast Asia, well-positioned to ride on global mega trends to deliver sustainable business growth. A resilient and responsible business that generates long-term value for customers, employees, investors and the community.

CORE MARKETS

SINGAPORE

Dominant market position at home

MALAYSIA

Entrenched and well-established banking and insurance franchise

INDONESIA

Extensive national presence with comprehensive financial services offering

GREATER CHINA

Strong presence with dominance in cross-border trade, wealth and capital flows

CORE BUSINESSES

➤ BANKING

Comprehensive retail and commercial banking franchise across well-connected business and geographical network

➤ WEALTH MANAGEMENT

"Asia's Global Private Bank" with integrated regional and wealth platform, across private banking, premier banking, bancassurance, securities and asset management

➤ INSURANCE

Leading insurance presence in Singapore and Malaysia, and growing franchise in Indonesia

CORE COMPETENCIES

➤ Disciplined Risk Management

➤ Diversified Funding Base

➤ Investment in Technology & People

SUSTAINABLE BUSINESS PRACTICES

➤ Fair Dealing

➤ Responsible Financing

➤ Strong Governance

➤ Community Development

➤ Inclusive Workplace

KEY GLOBAL MEGA TRENDS SHAPING ASIA'S GROWTH

Growing Intra-Asia Trade and Cross-Border Capital Flows

Rising Asian Wealth

Urbanisation and Continued Rise of SMEs in Asia

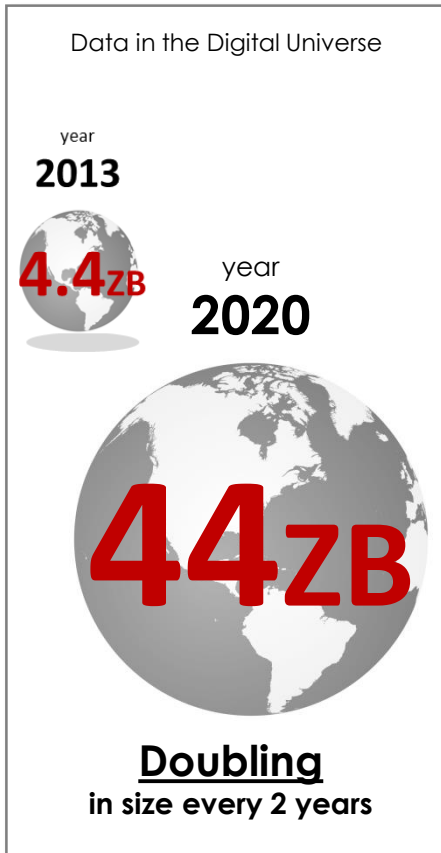
Increasing Economic Presence of China

Advancements in Technology

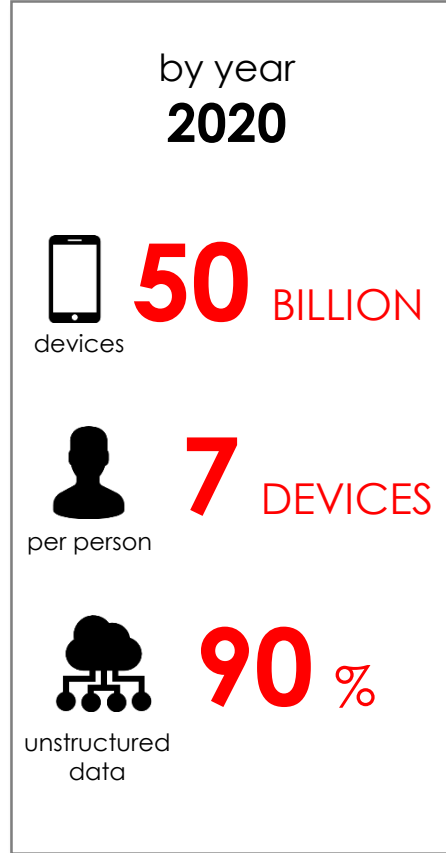
- Digital Transformation
- FutureSmart Talent

With the current trend of

Data Explosion



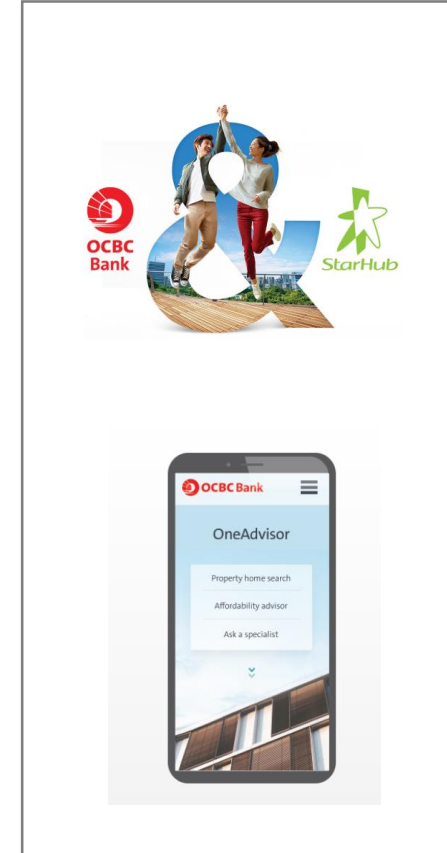
Connected Devices



Artificial Intelligence



We Economy



Regulations



... leading to changes in customer behaviour and expectations

We have long started our digital journey and seen results

Branch

▼ **14%**

Number of branches[#]

▼ **15%**

teller headcount*

Sales

▲ **3X**

Improvement in sales
leads conversion*

2,700

Sales and service staff
digitally enabled[#]

Digital

87%

Financial transactions
are on digital[#]

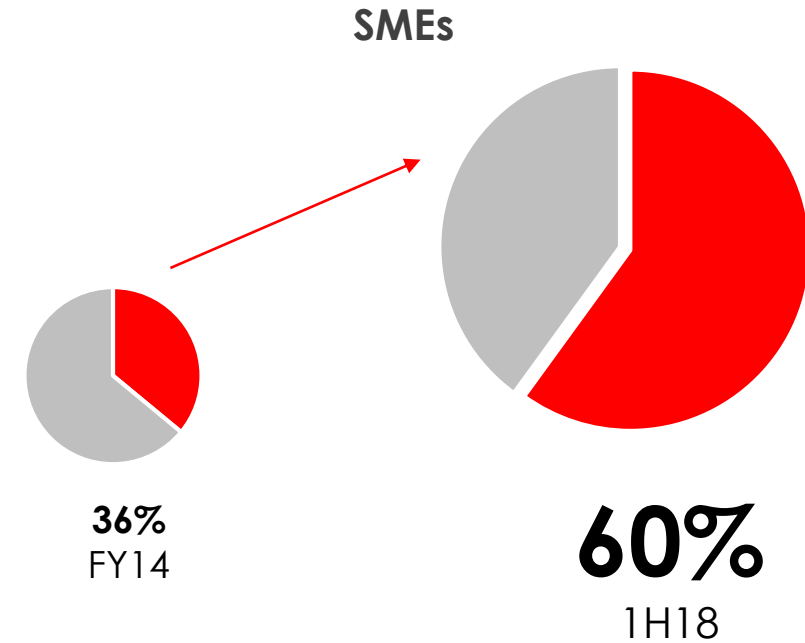
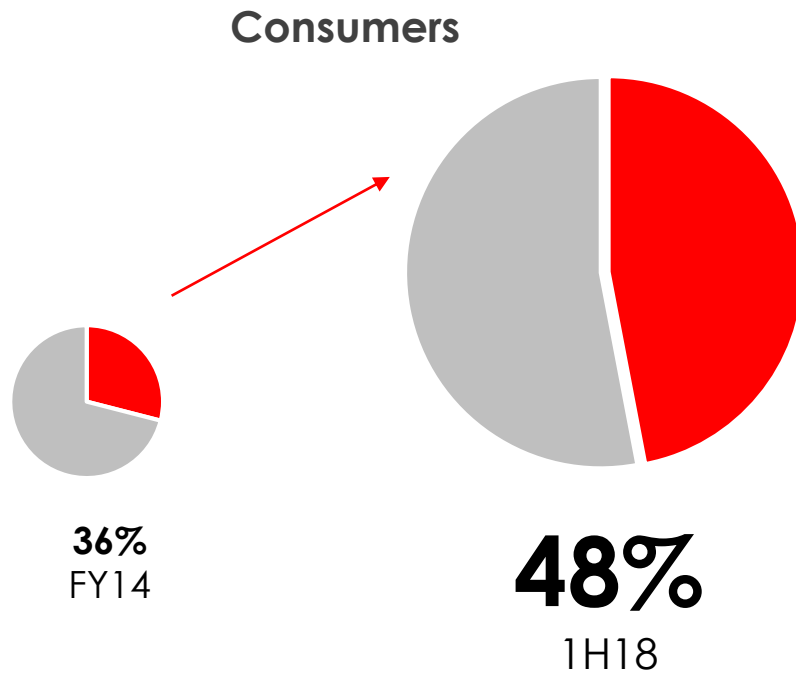
70%

Remittances
performed on digital
channels[#]

Significant Increase in Digital Customers

- Definition: Digital customers are customers who have used internet / mobile banking at least once in 3 months

Singapore

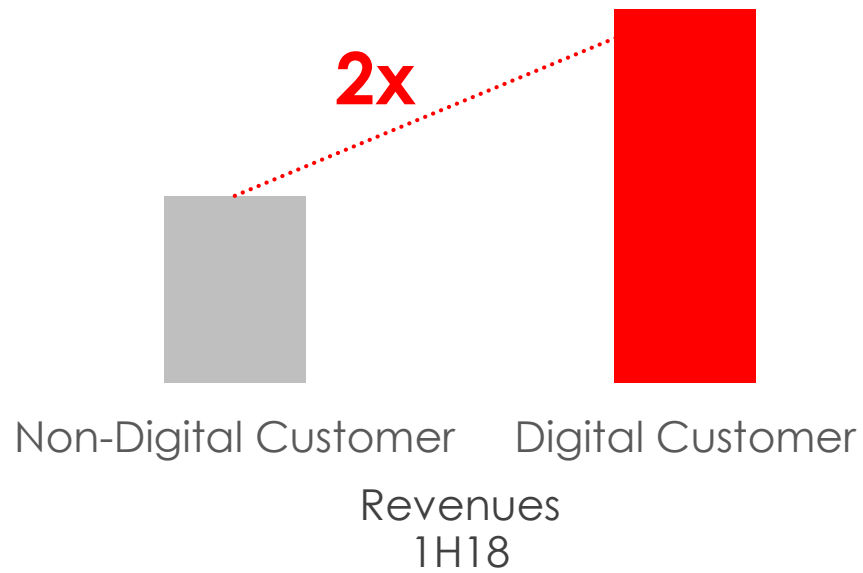


Digital customers

Higher Revenue for Digital Customers

Singapore

Consumers



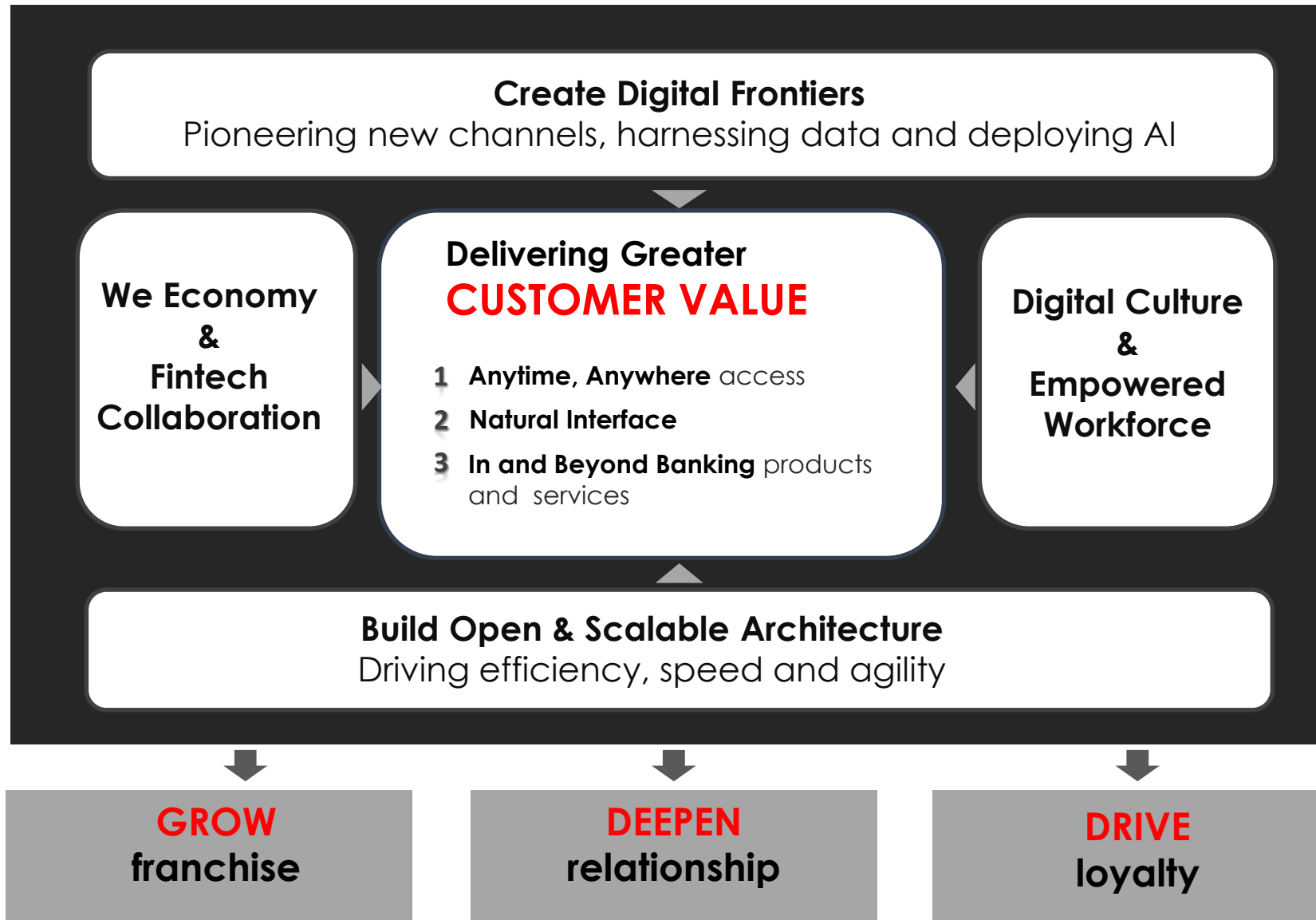
SMEs



CUSTOMER ALWAYS AT THE CENTRE



Redefining Customer Engagement through Digital Transformation



Extending Digital Transformation Regionally



Dedicated Digital Transformation Team in Indonesia

Regional Analytics Team in Core Markets

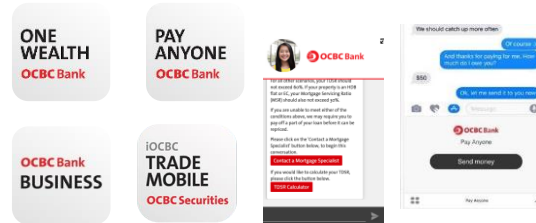
Regional IT Hub in Greater Bay Area

Scalable Digital Transformation in Malaysia

Digital led solutions to grow and deepen customer segments

Consumers

- Leading digital engagement



- Winning the relationship opening “moments of truth”



Creating greater value for Consumers through digital transformation
*Ching Wei Hong,
Chief Operating Officer*

SMEs

- Business Banking on the go

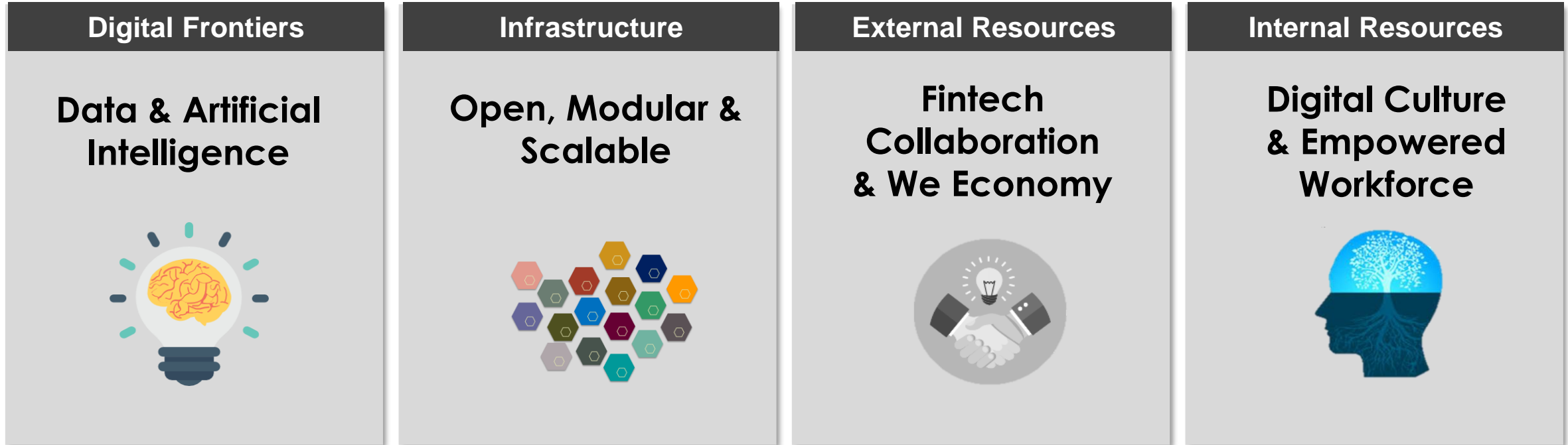


- Beyond banking services through ecosystems



Creating greater value for SMEs through digital transformation
*Linus Goh,
Head, Global Commercial Banking*

4 Key Pillars to drive Digital Transformation



Driving Pervasive & Sustainable Digital Transformation

Pranav, Head, Fintech and Innovation Group



Powering the Foundation for Digital Transformation

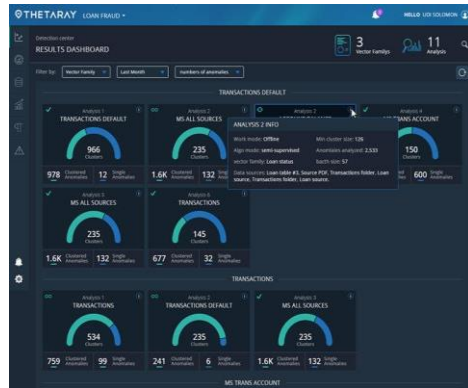
Lim Kiang Tong, Head, Group Operations & Technology

Digital Frontier

Leverage AI to redefine all aspects of our business

**AML
machine
learning**

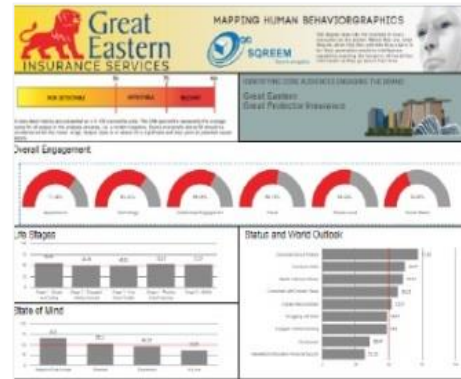
4.5x more efficient



**Improve core processes
by detecting patterns
missed by humans**

**Create
Sales
Opportunities**

+35% in identifying
intent



**Using social media
data to obtain new
sources of insights**

**Real-time
Contextual
Offers**

3x more relevance



**Sense & respond in
real-time to customer
needs**

**24x7
Virtual
Chat-bot**

136,000 enquiries



**INTRODUCING
EMMA**

For all your home
and renovation
loan questions

**Augment human
resources to improve
customer service**

AI will start delivering significant benefits over the next 5 years

Create Customer Intimacies



75%

of customer service requests to be AI-assisted, resulting in faster turn around

Drive Business Scalability



75%

of employees' jobs to be augmented with AI

20%

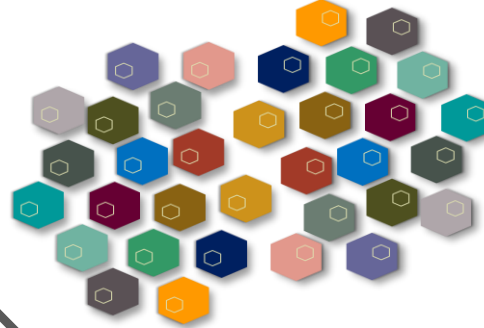
lift in staff productivity expected or man-hours saved to complete a task

Infrastructure Supported by Agile Technology and Data Science Platform

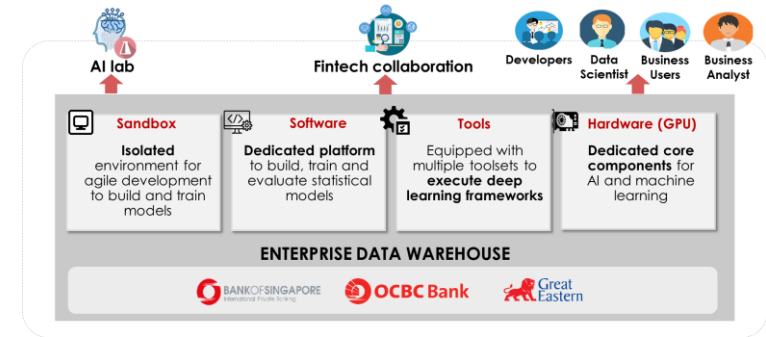
Monolithic architecture



Microservices architecture



Data Science Platform



2014

2016

2018

2019

External Resources

The Open Vault has accelerated innovation through Fintech collaboration

**1,500+ Fintechs
evaluated globally**

Sharp problem & opportunity focus
aligned with transformation strategy

API access & real anonymised data
Sandbox / API gateway

Codified Risk Management approach
to enable Speed



THE ASIAN BANKER®

FINANCIAL TECHNOLOGY INNOVATION AWARDS 2018

THE BEST INNOVATION CENTRE BY FINANCIAL INSTITUTION IN SINGAPORE

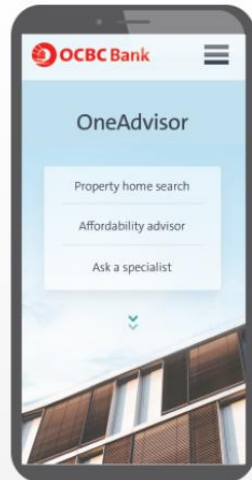
Deepen We Economy Partnerships to Engage Customers Beyond Banking

Consumer
"Extending into relevant journeys"

Business
"Beyond Banking"

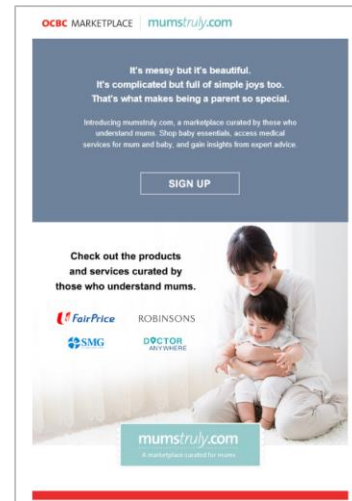
OneAdvisor

Home buying expertise on one digital platform



Mumstruly

Leveraging existing partnerships to deepen relationships with core segments



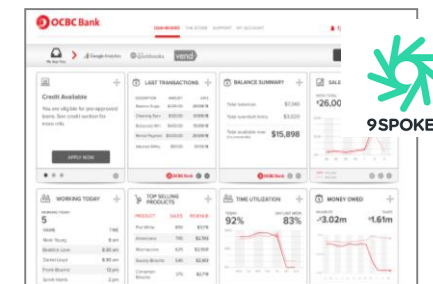
OCBC & Starhub

Data partnerships for engendering loyalty



Business Dashboard

Providing SME business owners with a business dashboard to operate and manage their business



Internal Resources Empowering our People....

Agile

Adapt to fast
changing trends.
To learn, and unlearn
and relearn

Open culture

Room for experimentation –
failures for improvement.

We Economy and being
open to changes and
feedback



Innovation

Disruption thinking:
AI bots in recruitment

Core values

Must drive our behaviours and the way we work

..... **Creating FutureSmart Talents**

Internal Resources

FutureSmart – a committed S\$20 million initiative

DIGITAL BUSINESS MODELS & ECOSYSTEMS

Ever wondered why new ways of doing business keep emerging and why organisations are collaborating more than ever?

1. Understand what they are and how they create value for businesses
2. Learn definitions, terminologies, and applications

TECH & DATA

Technology is making the world more connected and enabling people and organisations. Data is becoming a necessary part of our lives and we can't live without it (well, almost).

1. Learn more about emerging technologies and how they are applied at the workplace
2. Find out all about big data, data science, data analytics, data visualisation, data storytelling, and many more
3. Discover how technology and data is impacting all of us and how to leverage them

NEW RISKS

You can be exposed to risks which you didn't know before and never imagined! Cyber security, data protection and privacy (just to name a few) are becoming increasingly important in our lives.

1. Learn about new risks that are emerging and how you may be exposed to them
2. Know how you can better protect yourself and OCBC by heightening your awareness

CUSTOMER CENTRICITY

With increasing sophistication in customers and heightened competition from non-traditional competitors, the customer experience we deliver has to be redefined.

1. Discover new approaches to creating truly customer-centric experiences
2. Learn about human-centered design, great design principles and many more

MARKETING & COMMS

Social media platforms are becoming a big part of our lives. Ever wondered what it does for you and how it can impact you and organisations?

1. Learn how you can engage and leverage on social media platforms, on both personal and professional fronts
2. Discover all about digital marketing, personal branding and various communication techniques

THE WAY WE WORK

Have an open and collaborative mindset. Build learning agility. Partner one another to learn and grow continuously.

1. Explore techniques that enable you to be more agile so you can experiment and adapt
2. Be immersed in experiences that shape the workplace. Step up and be part of the change

LEADERSHIP IN THE FUTURE WORLD

We are all leaders. Leaders and leadership styles need to evolve in order to stay relevant.

1. Learn how to lead without formal authority, inspire others and build a culture of learning
2. Discover ways to lead the emergence of a new and diverse workforce

Measurement of Progress

GROW
franchise



Digital Activity

Digital Customers

Users & growth rates

Digital Transact

Digital transactions &
services

% New-to-Bank

DEEPEN
relationship



Digital Sales

% Digital Contribution

**Revenue per
digital customer**

DRIVE
loyalty

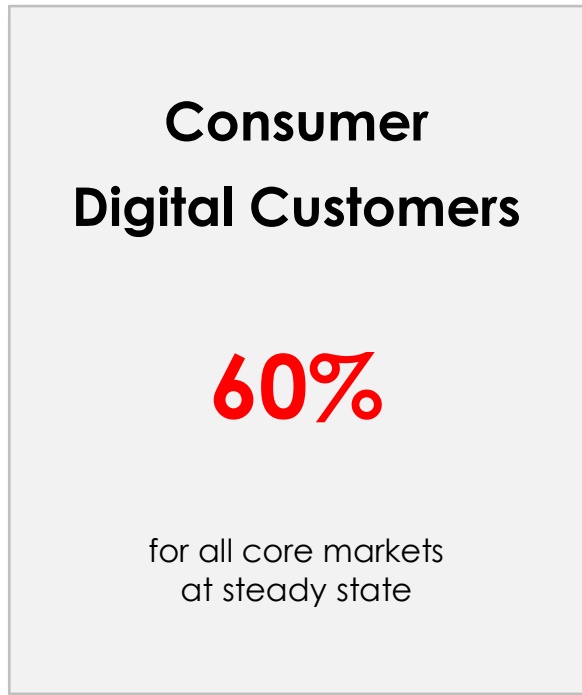


Customer Stickiness

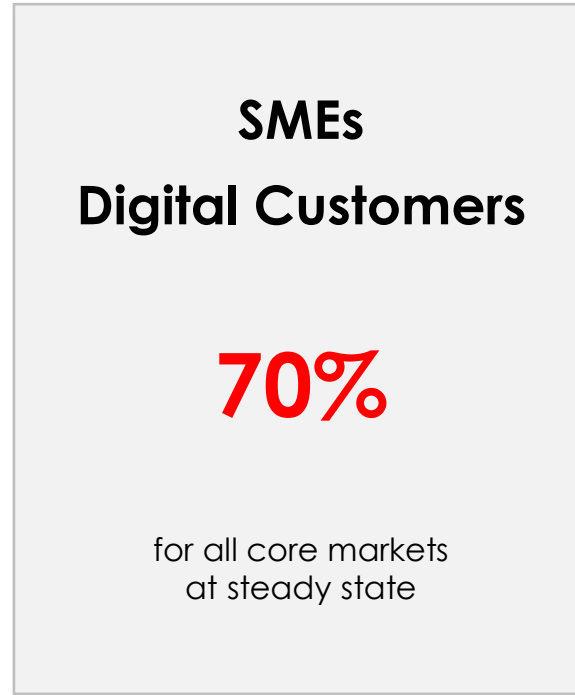
**Customer satisfaction
and engagement**

Internal metrics
External studies

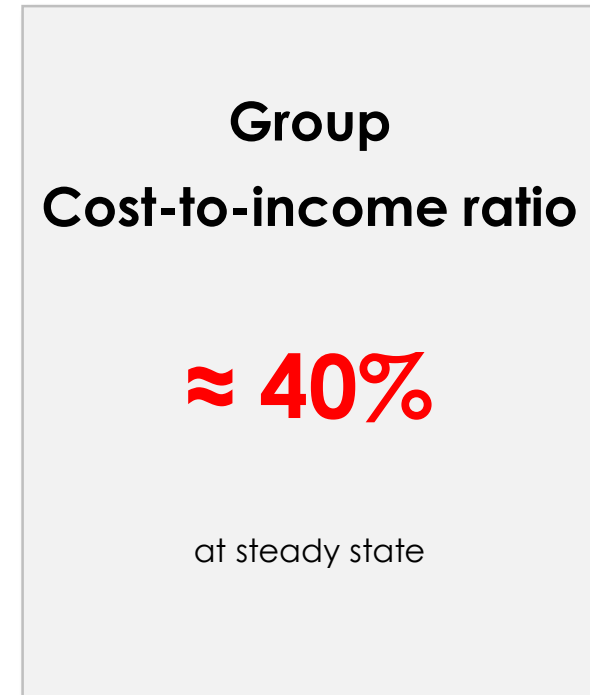
Our targets



1H18 SG CFS 48%



1H18 SG SME 60%



Annualised 1H18
Cost-to-income ratio : 43.0%

In Summary

Digital Transformation is an integral part of OCBC's Corporate Strategy

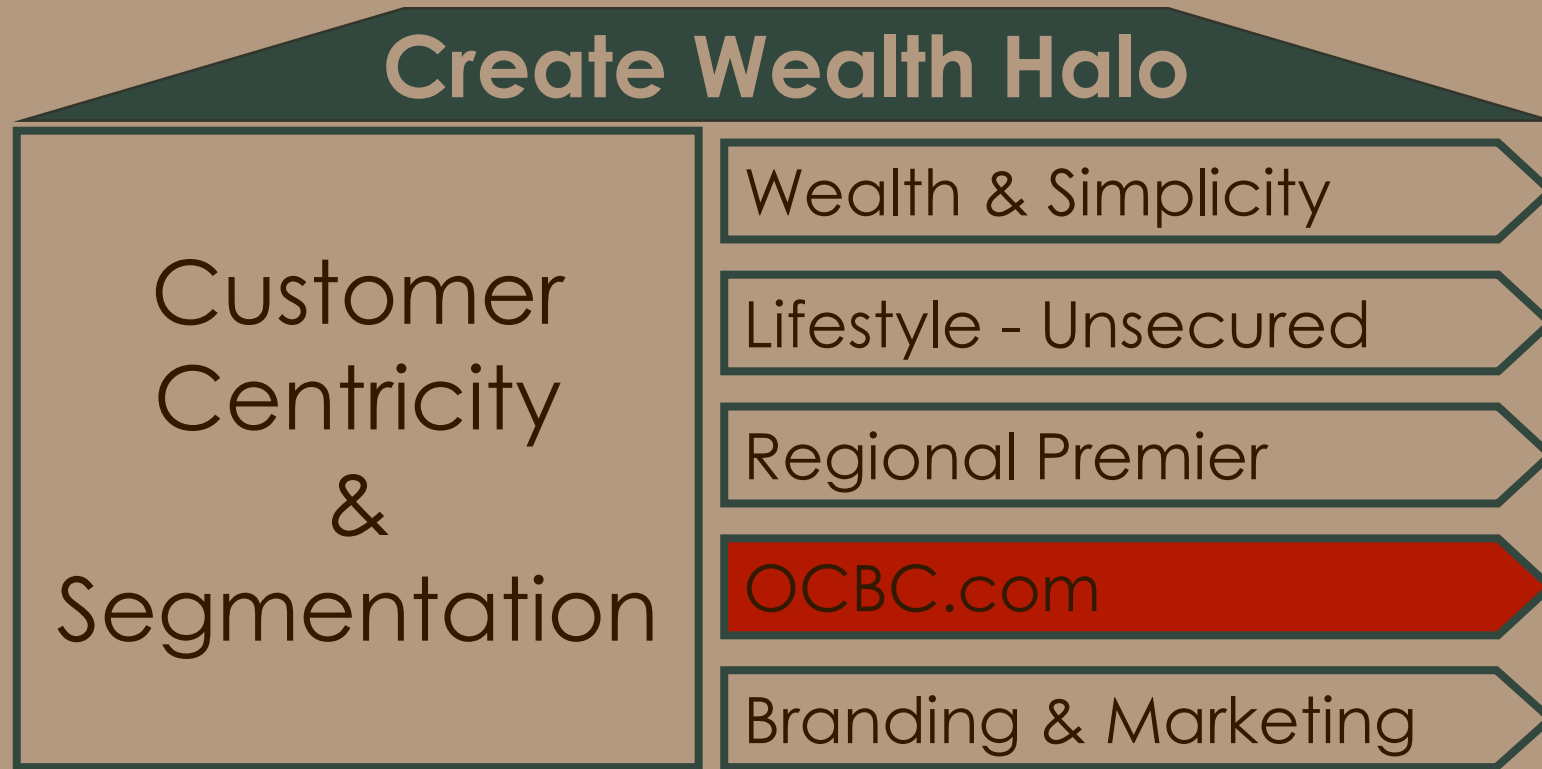
- Customer-centric services and seamless customer journey
- 4 key pillars of our Digital Transformation
 - Digital frontiers in data and AI deployed across the Organisation
 - Open & scalable architecture with new enterprise data science platform to drive efficiency, speed, agility and advanced data analytics
 - Strategic collaborations with Fintechs and ecosystem partners to deliver seamless In and Beyond Banking solutions
 - Entrenched digital culture and empowered workforce to move the Organisation forward

Creating Greater Value for Consumers through Digital Transformation

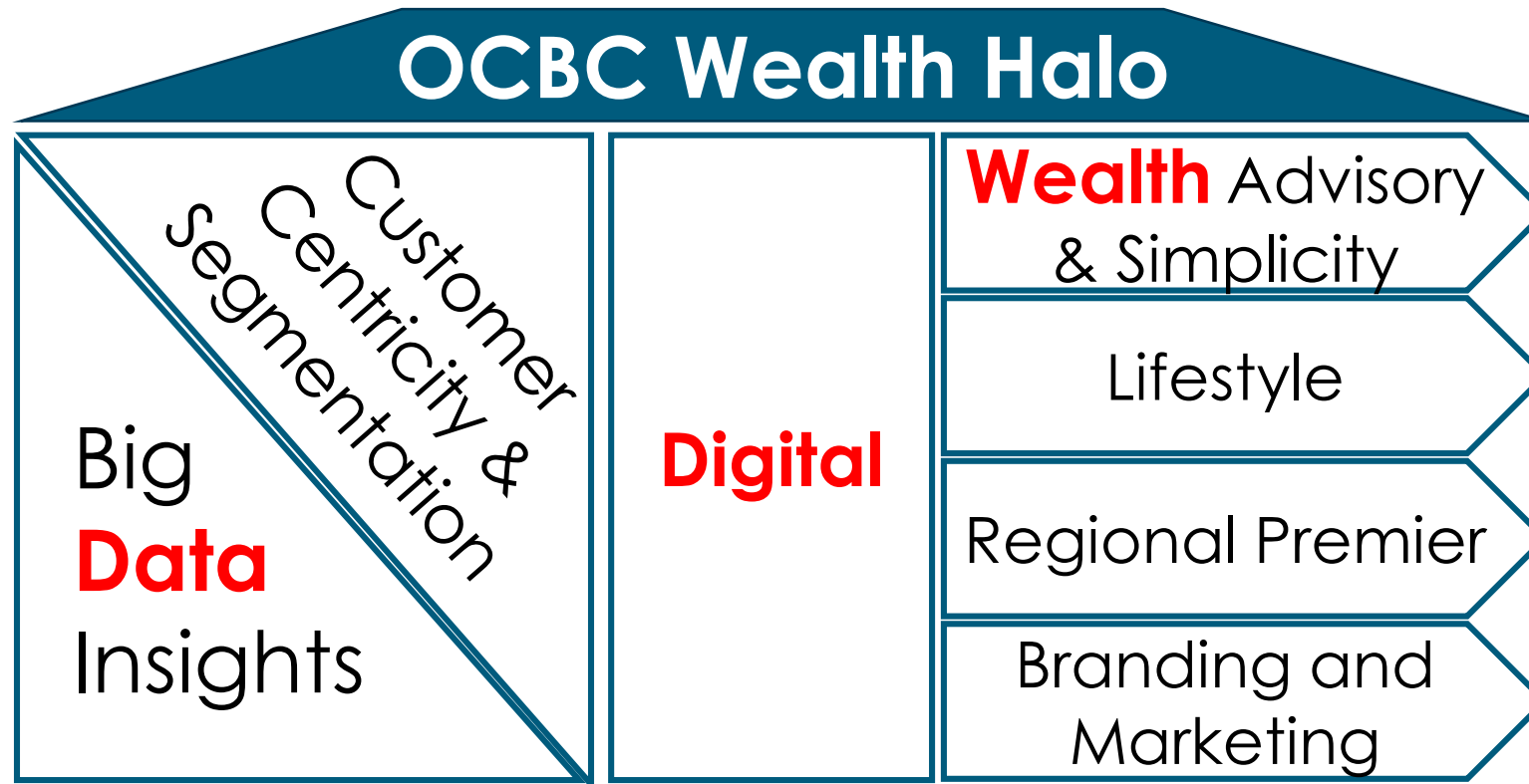
Ching Wei Hong
Chief Operating Officer

24 September 2018

2010 Consumer Financial Services Strategy Offsite



2018 Strategic Thrusts



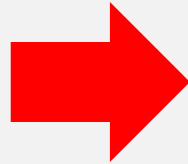
Structural digitalisation of core business model complemented by ecosystem led growth

Structural Digitalisation

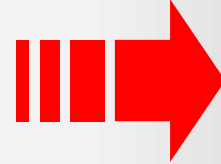
Ecosystem led growth



1985



2015



2018 & beyond

IT IS ALL ABOUT THE CUSTOMER



This is Mary

Age 30, recently married

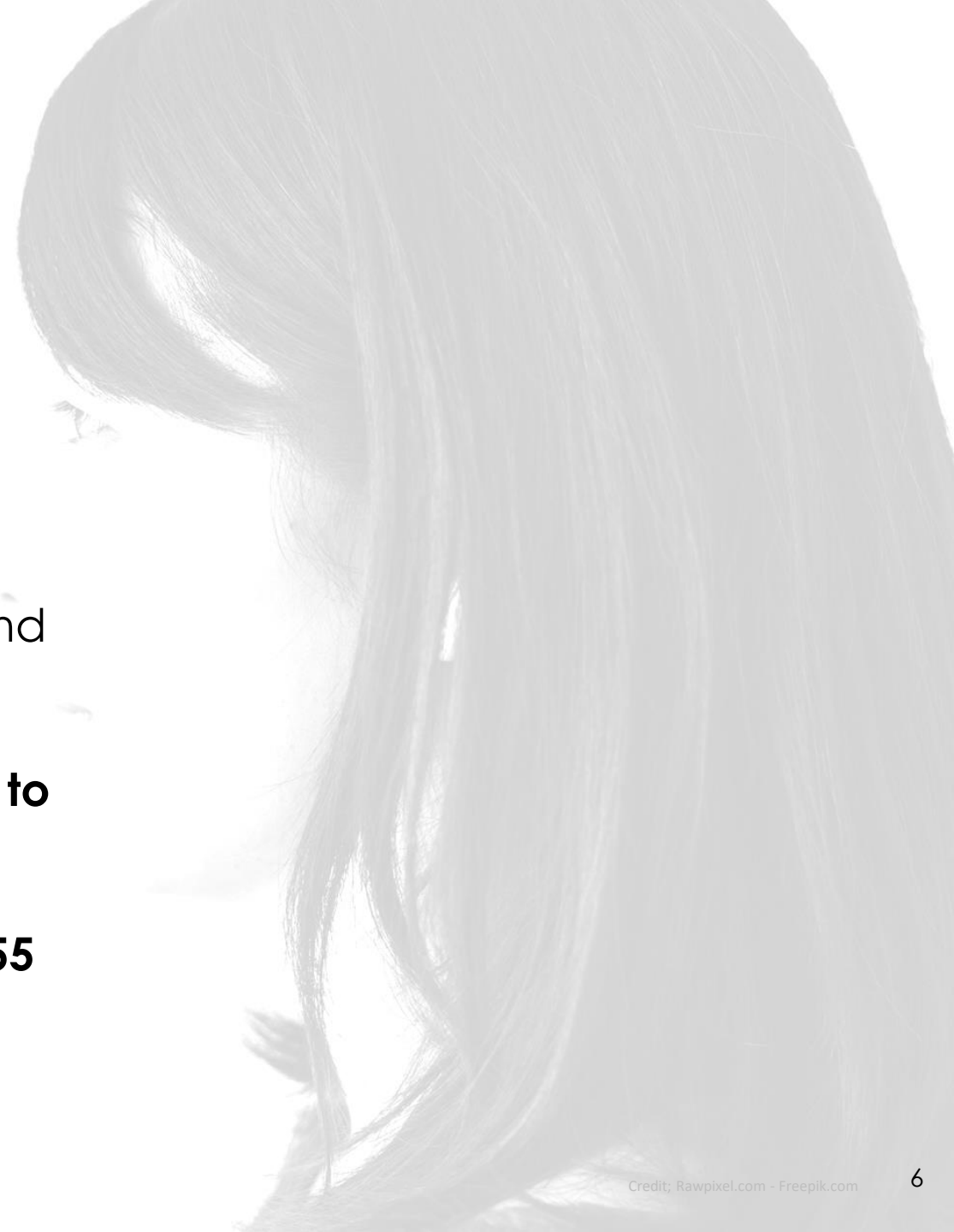
Travels **4 times** a year to Japan

Has been **browsing for homes** in the East

Time-starved, needs everything **fast, automated** and with **minimal intervention**

Enjoys using mobile banking and **dislikes calling in to contact centre**

Wants to **purchase** her **first property** and **retire by 55**



Mary isn't our only customer

Alan, age 35, Single, works long hours, looking for investment tips

Cheryl, age 26, getting married in October and is saving for her wedding

Eric, age 23, fresh in his new job and does not know how to invest

Brenda, age 28, Married, loves online shopping, finds it difficult to save money.

Dylan, age 55, but loves meeting his RM at his favourite coffee house

Credit; ST PHOTO: JOYCE FANG



**Design is a
behaviour, not
a department**



Make something they want to use.



Great Design

Principles

way
care fo
ing for.
athy in m
t you care

GREAT DESIGN IS
EASY TO USE

There is beauty when some
simply work
people's tim
things as cle
their lives e

GREAT DESIGN
PLEASANT TO SERVE

GREAT DESIGN
STAYS OUT OF PEOPLE'S WAY

Great des
wellbein
honesty,

Users are on a mission. Do
them unnecessarily or se
Great design should h
clear paths, and sho
complete tasks o

Then...

OCBC Bank

Internet Banking | Banking | Insurance | Investment | Loans | Cards | Promotions | Tools & Info | Help Centre

You're in: Home | Internet Banking

Welcome TESTSAVINGS7
Your last login was 20 July, 2010 at 09:11:19 (Singapore Time)

Enhanced Security Notice:

One-time Password for 3rd Party Funds Transfer
Please have your 2FA token when performing 3rd Party Funds Transfer as you will be prompted for One-time Password.

Access Code Change
If you have previously change your Access code, please login using the latest changed Access code.

OCBC Bank is now on eNETS – Pay Online With Ease
eNETS Direct Debit is a secured online payment through direct debiting of your OCBC Savings or Current account using Internet Banking. You can perform payment to HDB, LTA, IRAS, CPF, URA, AVA, ComfortDelGro Dining Centre and many more.

Go paperless with Electronic Statements from OCBC Bank. Save time, hassle, paperwork and the environment.
Save time, paper and space when you opt for OCBC Electronic Statements. Most of all, you will enjoy the convenience of viewing all your past and present statements anytime, anywhere.

Check Balances, Pay Bills and Transfer Funds on the go with OCBC Mobile Banking.

To start, enter your Mobile Number below:

GO!

For Apple iPhone, [click here](#) to download from iTunes.

[Check phone compatibility](#) [GPRS or 3G Set-up](#)

Last 5 OTP-enabled Transactions

Date	Transaction Type	Description
07/07/2010	To 3rd Party Account	Reference No. : 20100707312337 ; Transaction Date : 07/07/2010 20:04 ; From Account : Easisave 501-586416-001 ; To Account : Sabrina 54512334345 ; Amount : SGD 49.00 ; Transfer Type : Immediate Transfer
07/07/2010	Add Beneficiary	Account No. : 54512334345 ; Beneficiary Name : Sabrina
07/07/2010	To 3rd Party Account	Reference No. : 20100707300625 ; Transaction Date : 07/07/2010 09:55 ; From Account : Easisave 501-586416-001 ; To Account : ris yeo 12345678998 ; Amount : SGD 2,455.00 ; Transfer Type : Immediate Transfer
06/07/2010	To 3rd Party Account	Reference No. : 20100705292581 ; Transaction Date : 06/07/2010 14:50 ; From Account : Easisave 501-586416-001 ; To Account : ris yeo 12345678998 ; Amount : SGD 1.00 ; Transfer Type : Immediate Transfer
06/07/2010	Add Beneficiary	Account No. : 12345678998 ; Beneficiary Name : ris yeo

[View Recent Internet Banking Withdrawals](#)

Financial Status

Liabilities	Amount Owed
Credit Card(s)	NA

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...Now

OCBC PREMIER BANKING

Your accounts | Payment & transfer | Investment & trading | Customer service | Open an account | Rewards

Secure his education funds with OCBC lifegoals

Let us help you customise a range of solutions so that your child can have the best educational opportunities in the future.

[Find out more](#)

You have 1,130,000

You owe 1,089

Your needs

Money Insights
04 Your spend ratio from 2010, off your money from budget
[View](#)

Statement
03 Your monthly statement addressed to ready-to-printing and download
OCBC 360 Smart Card AKA KASA AKA AKA
[View](#)

Statement
11 Your monthly statement addressed to ready-to-printing and download
FRAM Account 004-414333-001
[View](#)

Saving goals
10 Not subscribed to Monthly SUD 2000 SG Plan 0.1000 on July 15, 2010 for 10 days
[View now](#)

What you have

Account	Balance	Available
NET Account	SGD 88,000.00	SGD 88,000.00
Savings Jar	SGD 88,000.00	SGD 88,000.00
FRAM Account	SGD 88,000.00	SGD 88,000.00
FRAM Account	SGD 88,000.00	SGD 88,000.00

What you owe

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Structural Digitalisation

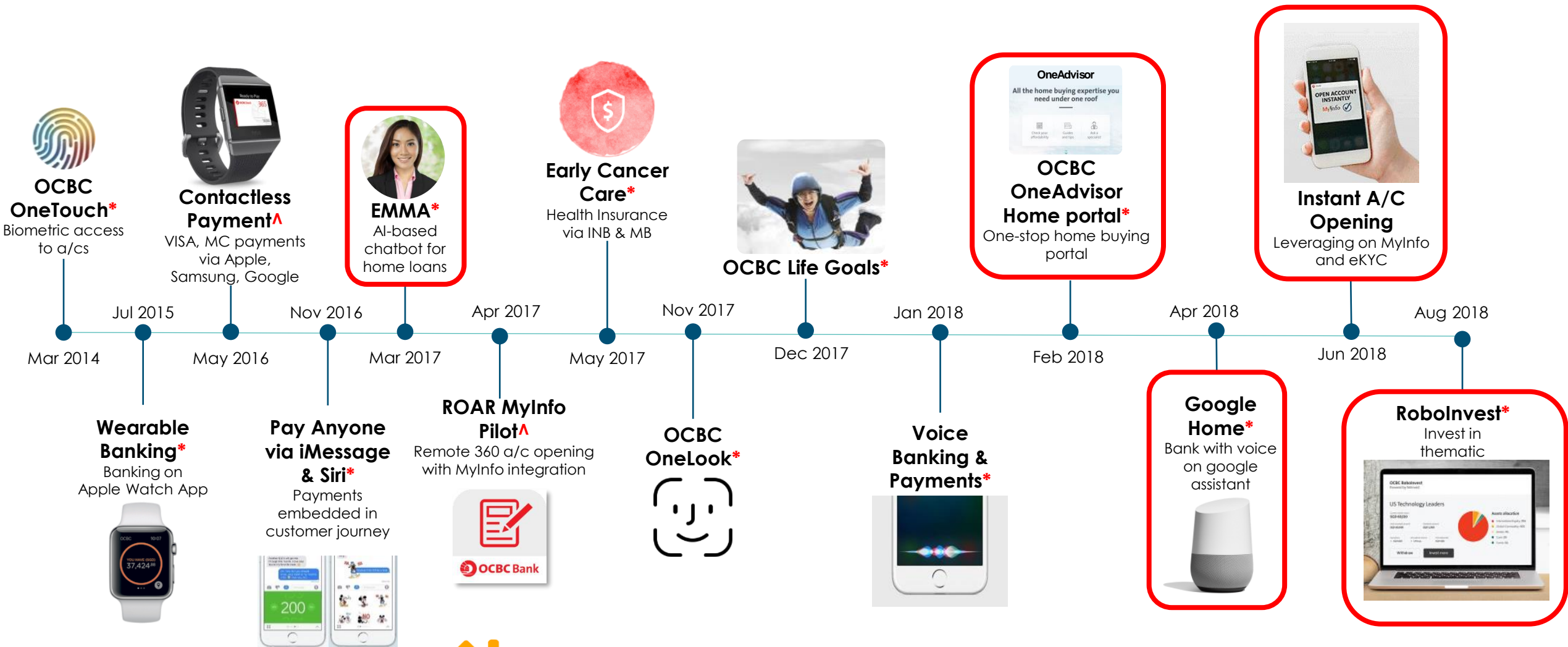


Credit; Jannoon028 - Freepik.com



Credit; Pressfoto - Freepik.com

Consumer Bank Singapore: Early and leading adopter of structural digitalisation – “First in Singapore” milestones



2009: Customer Experience team set-up
2010: Digital Team rewired
\$150m investments in Data/ Analytics since 2005

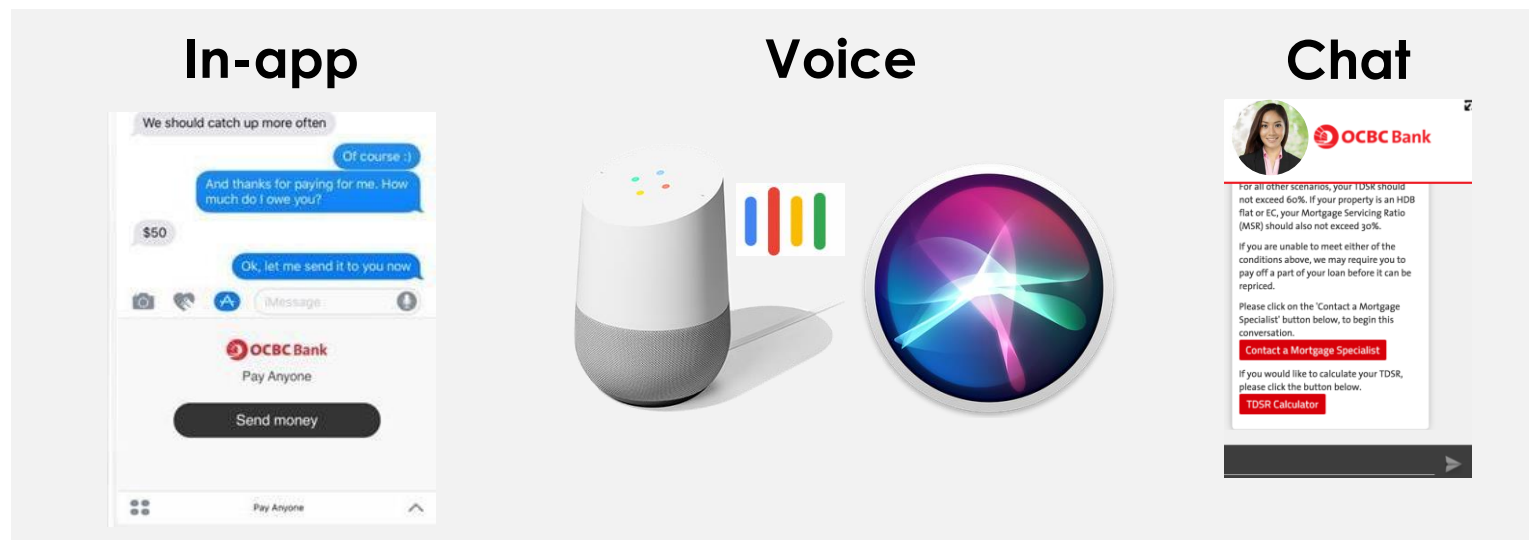
*First in Singapore
^Day-one bank

Leading the digital engagement

OCBC – banking on your mobile...



...and beyond



Note:

1. Digital customers are defined as customers who have used internet / mobile banking at least once in 3 months
2. Financial transactions refer to fund transfers and payments which are non-cash in nature

Digitising the branch



Smart ATM



Self Service Kiosk



Digital Concierge



Digital Ambassadors

26%
teller transactions
migrated
to ATMs#

15%
teller headcount
reduction*

Singapore; *2017 vs 2012; # 1H2018

Winning the relationship opening “moments of truth”

Digital Direct to Customer



Digital Assisted – enabling Sales & Services



Delivering Customer Delight; Driving productivity with digitally enabled & AI assisted agents



3X

improvement in
sales leads
conversion

30%

requests
handled
STP

2,700

sales & service
staff digitally
enabled

Democratising Wealth, Personalising Access

57%

Unit Trusts
originated
digitally#

94%

first-time
Unit Trust
investors^

20%

wealth sales
initiated with
OCBC Life
Goals#

OCBC Life Goals, OneWealth & RoboInvest

goals-based simplified decision making

guided & automated buying journey; accessible – start as low as \$100

contextual & actionable alerts



Consumer Bank Singapore: digital driving structural shift

Grow Franchise

leveraging digital for scalability

- Pivot away from staff centric service model: **7pp higher Sales staff : staff mix[^]***
- Pivot sales staff to advisory and drive productivity: **1.4X revenue per staff***



Deepen Relationship

with leading digital experiences

- Grow engaged digital customer franchise – **48% digital customers#**
- **63% revenue generated by digital customers, 1.6X products per customer#** (digital customer vs others)



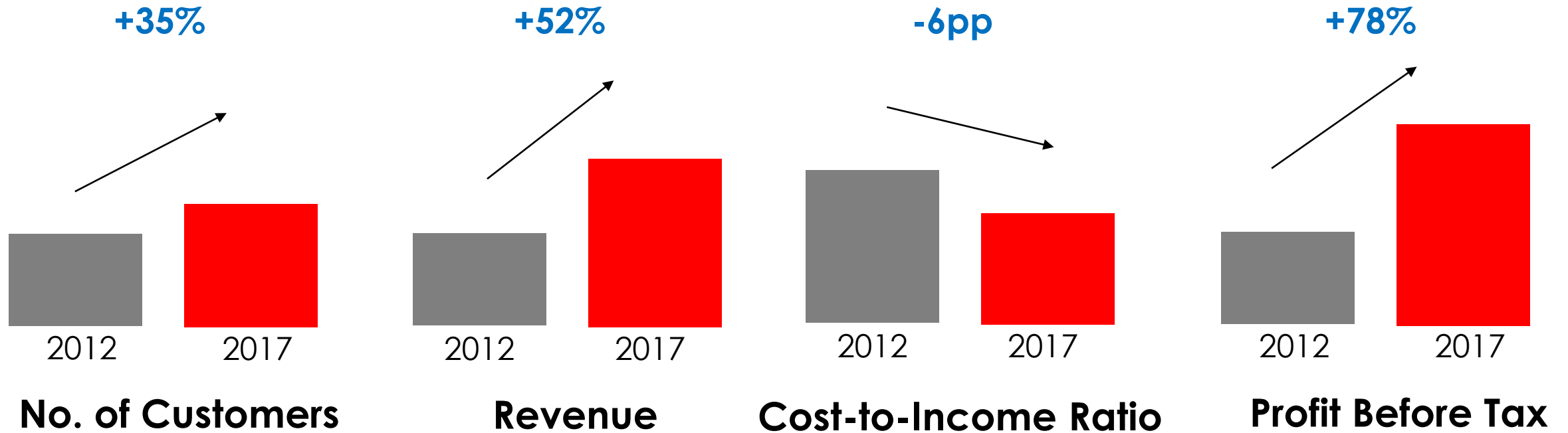
Drive Loyalty

delighting customers

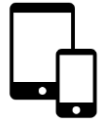
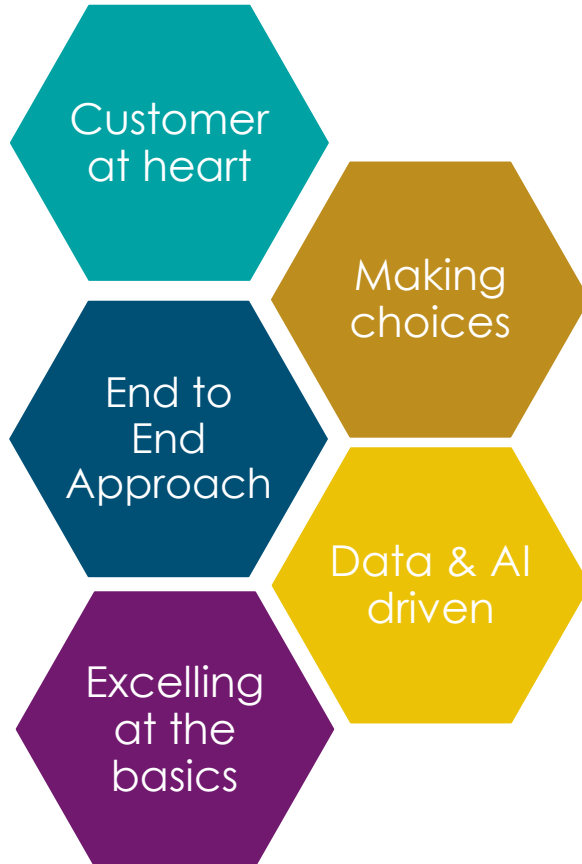
- Ranked **1st** in Customer Loyalty in Retail Banking: Global Edition **2016** by Bain & Company
- Ranked **Highest** in Singapore Retail Banking Customer Satisfaction: **2017-2018** by J.D Power



Consumer Bank Singapore: Scalable growth



Structural digitisation journey continues...



Mobile-first Omni-channel

- Simple, Convenient, Relevant, Instant & Secure
- Mobile – not just for customers
- Clicks -> Tap -> Talk
- Elimination of Tellers/ Reduction in service staff
- Augmented Intelligence – Personal & Contextual



Market-leading digital sales

- Online origination of all simple products
- Efficient & Institutionalised Advisory process for complex products



Democratic & personalised wealth access

- Unlock new segments with simplified and accessible products
- Scale personalised research & advisory
- From products to advice (day-to-day financial insights, goal-oriented)



Digital payments & loyalty

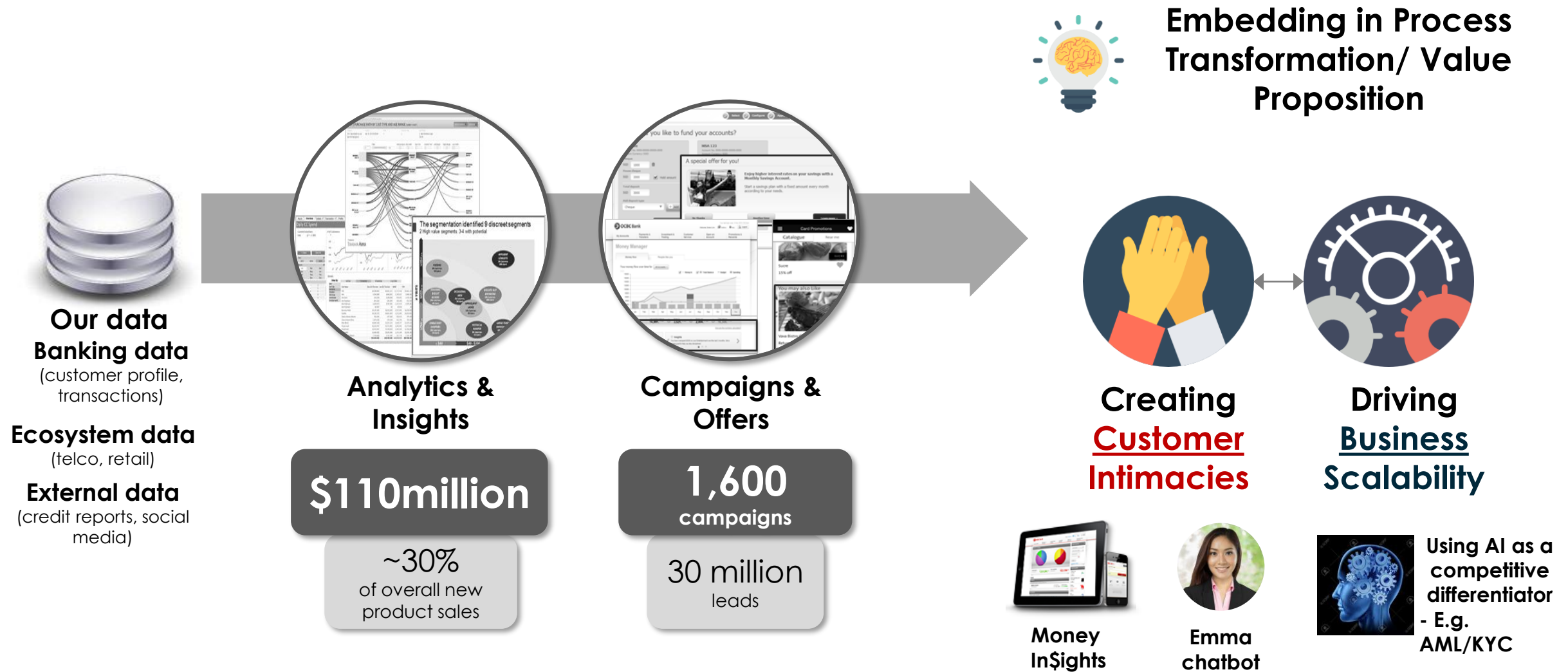
- Embed digital payments in lifestyle to drive loyalty – pre-empting disruption



Streamlining processes

- Automation of processes

Augmented with new capabilities around AI/ ML



Going beyond banking... to get closer to the customer through Ecosystem partnerships



Starhub Ecosystem partnership already delivering benefits. Beyond Marketing - more advanced use cases in development

CO-MARKETING



IN DEVELOPMENT



PERSONALISED TRAVEL JOURNEYS

Activate Data, overseas card usage, travel insurance



ALTERNATIVE CREDIT

Using Location, call circle, browsing data



PREDICTIVE UNDERWRITING

Using activity levels, sleep timing, shopping behaviours



1,000

new accounts
opened
per month

+33%

customers with
recurring payment
for Starhub
bills

Mortgage Origination

RESALE HDB **LOAN TO VALUE (LTV)** LOAN TENURE

ADDITIONAL BUYER'S STAMP DUTY (ABSD) 2ND PROPERTY

AGE 65 **SELLER'S STAMP DUTY (SSD)** 1ST PROPERTY

MINIMUM OCCUPATION PERIOD CASH COMPONENT

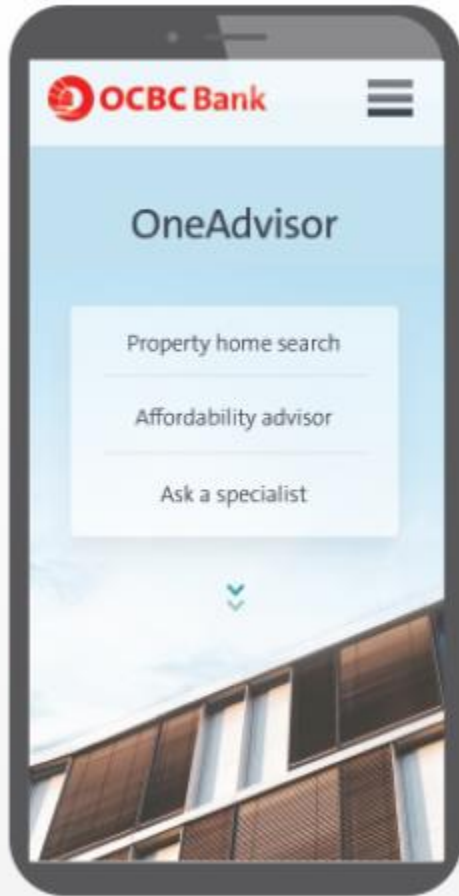
MORTGAGE REDUCING TERM ASSURANCE (MRTA)

MARKET VALUATION 75% LTV **IN-PRINCIPLE APPROVAL (IPA)**

PRIVATE PROPERTY **TOTAL DEBT SERVICING RATIO (TDSR)**

WITHDRAWAL LIMIT **MORTGAGE SERVICING RATIO (MSR)**

Moving from 'Mortgage sale' to one platform for end to end 'Home purchase journey'



OCBC ONEADVISOR

HOME BUYING EXPERTISE ON ONE DIGITAL PLATFORM

For first-time buyers, upgraders, and property investors.

[Find out more](#)

\$35M

loans
approved

7,000

property agents
on board

Check affordability and total cost needed for your dream home

Search for homes within your price range

Contact a Mortgage Specialist

Strengthening loyalty with partnerships

OCBC MARKETPLACE | mumstruly.com

It's messy but it's beautiful.
It's complicated but full of simple joys too.
That's what makes being a parent so special.

Introducing mumstruly.com, a marketplace curated by those who understand mums. Shop baby essentials, access medical services for mum and baby, and gain insights from expert advice.

[SIGN UP](#)

Check out the products and services curated by those who understand mums.

FairPrice ROBINSONS
 SMG DOCTOR ANYWHERE

mumstruly.com
A marketplace curated for mums.

The advertisement features a central image of a woman sitting on the floor with a baby. The background is a soft, light blue gradient. The text is in a clean, sans-serif font. The OCBC logo is in the top left corner. The 'SIGN UP' button is a simple white rectangle with a thin border. The logos for FairPrice, Robinsons, SMG, and Doctor Anywhere are arranged in a grid below the main text. The mumstruly.com logo is at the bottom of the image.


Digital Marketplace



ROBINSONS



Loyalty Exchange



DIGITALISATION

DESIGN

DATA



Creating Greater Value for SMEs through Digital Transformation

Linus Goh

Head, Global Commercial Banking

24 September 2018

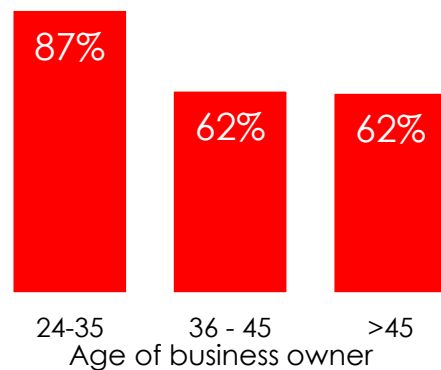


SMEs

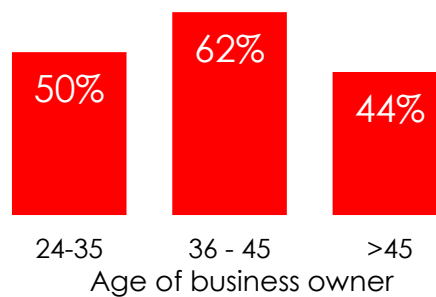
The new
battleground in
digitalisation

SMEs – The new battleground in digitalisation

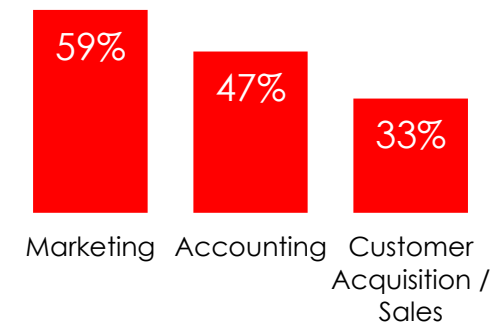
65% SMEs* believe going digital is necessary to stay relevant in business and 50% have begun implementing their digital initiatives.



Going digital is necessary



Implementing digital initiatives



Top areas of digital initiatives

* Jan 2018, Poll of 400 OCBC SME customers from Singapore, Malaysia, Indonesia and Hong Kong

OCBC Global Enterprise Banking

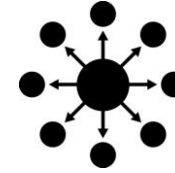
Serving start-ups, SMEs and mid-cap corporates



Helping
entrepreneurs get
their business
started ...



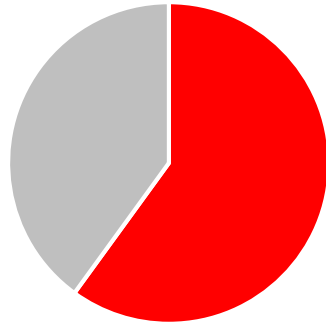
... helping them
grow and
succeed across
the SME lifecycle



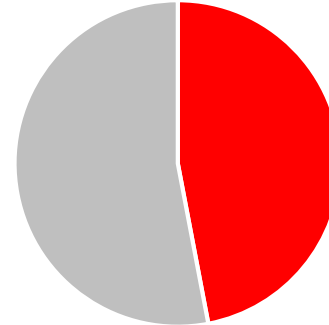
... and
supporting the
digitalisation
of their business

Dominant SME Market Position in Singapore

with over 125K small business* customers



Serving more than
1-in-2 SMEs
in Singapore



Acquiring over 40%
of bank accounts for newly-
incorporated businesses
each year

* Sales turnover of less than \$20m

First-to-market service innovations

for start-ups and small businesses in Singapore



Business First Loan, 2014

Unsecured loans for SMEs as young as 6 months in business. Market leader with close to 50% market share today.



Mobile Branch Specialists, 2016

Quick help from Business Banking specialists at retail branches for business accounts & solutions, with significant lift in customer satisfaction.



Virtual Account Opening, 2017

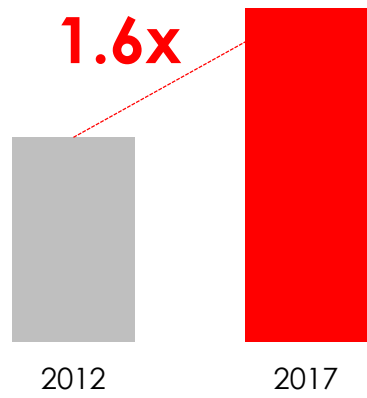
Remote business account opening for OCBC Group relationships, halved cycle time.



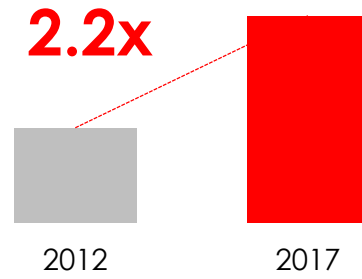
Business Revolving Short Term Loan, 2018

Flexible short term financing solution to meet SME working capital needs.

High Growth SME platform in Singapore for start-ups and small businesses



Revenue



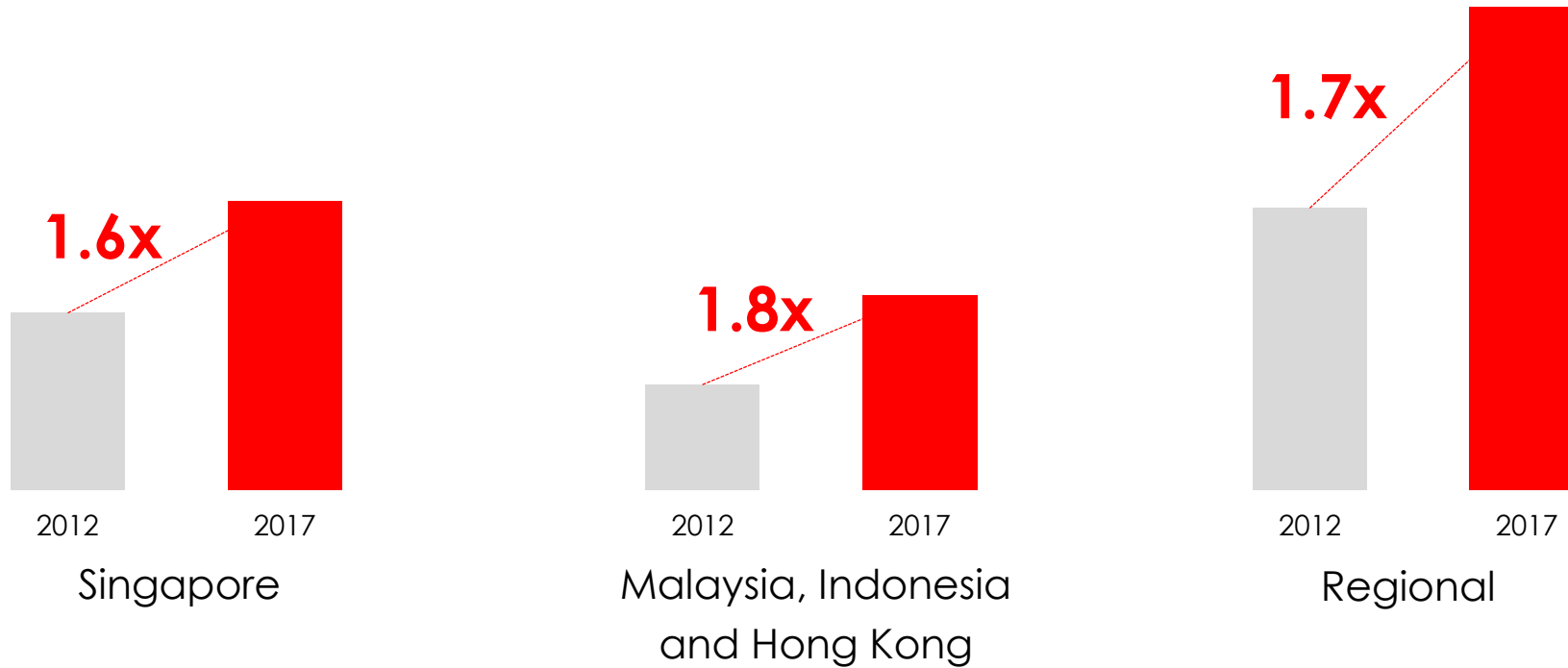
Net Profit



Cost-to-Income Ratio

Expanding into Malaysia, Indonesia and Hong Kong with strong customer and revenue growth

Revenues



Digital priorities for SME Banking

Redefining customer engagement
Delivering greater customer value for SMEs

DIGITAL
BANKING



DIGITAL
WORKPLACE



DIGITAL
ECOSYSTEMS



CUSTOMER JOURNEYS

DATA ANALYTICS & ARTIFICIAL INTELLIGENCE

Best SME Bank

For its efforts in digitising its SME business by offering an increasing number of products and services online to its SME clients, and by simplifying its digital account opening, **this bank not only achieved more accounts being completely sourced digitally but also a high digital active SME base.**

It developed a highly differentiated data-driven strategy to grow its SME business to compete effectively against its peers, and new innovative cash financing solutions.

Small Business Bank of the Year 2018
The Asian Banker

Small Business
Bank of the Year
2012 & 2018
The Asian Banker



Asia's Best
Bank for SMEs
2016 & 2017
Euromoney



ASEAN SME
Bank of the Year
2011 to 2018
Asian Banking & Finance



Best SME Bank
in Southeast Asia
2015 to 2018
Alpha Southeast Asia



Digital priorities for SME Banking

Redefining customer engagement
Delivering greater customer value for SMEs

DIGITAL
BANKING



DIGITAL
WORKPLACE



DIGITAL
ECOSYSTEMS



CUSTOMER JOURNEYS
DATA ANALYTICS & ARTIFICIAL INTELLIGENCE

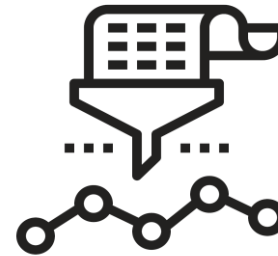
Our SME customers at the heart of our innovation

Data-driven behavioural insights in Customer Journeys
to design differentiated service experiences for SMEs across the life cycle



Customer Experience & Co-Innovation

CX labs, customer journeying and innovation workshops, supported by regular E-B* surveys



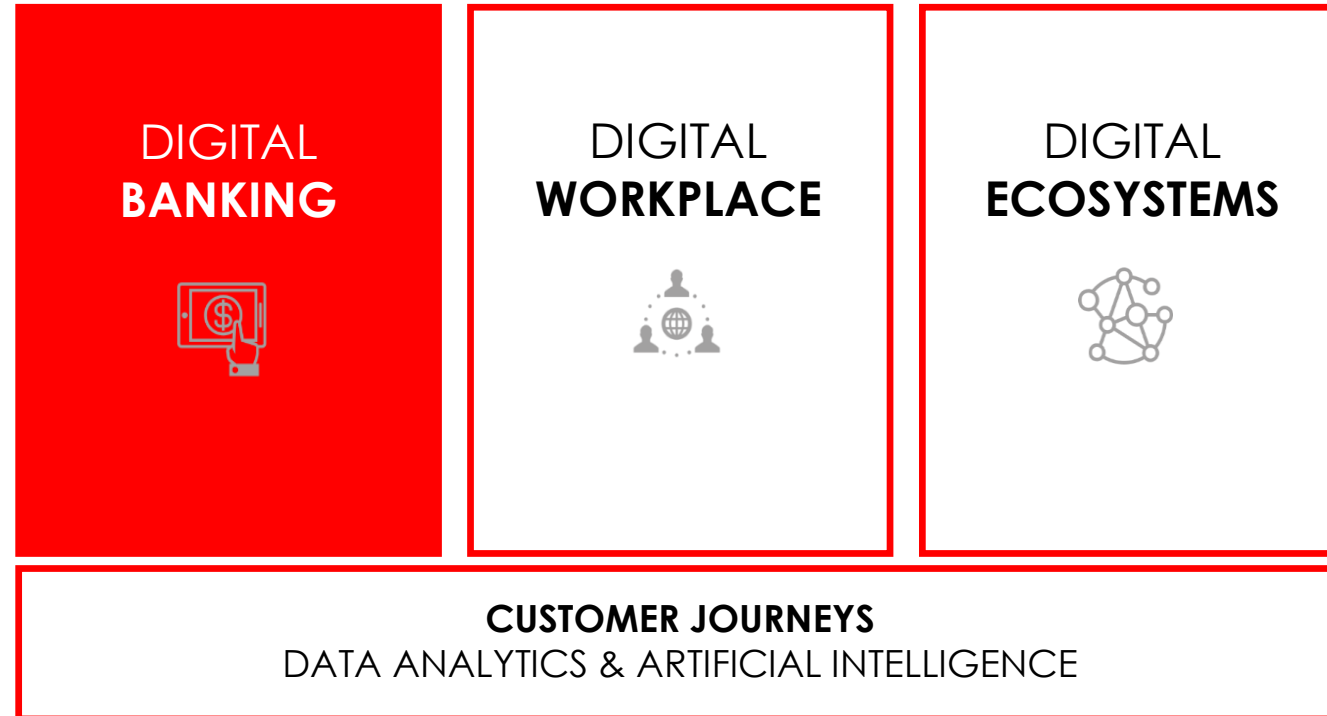
Data Analytics & Artificial Intelligence

Customer needs and preferences across our services and touch-points, and across the lifecycle

* Exceed Expectations minus Below Expectations,
Net Promoter Score-format customer survey

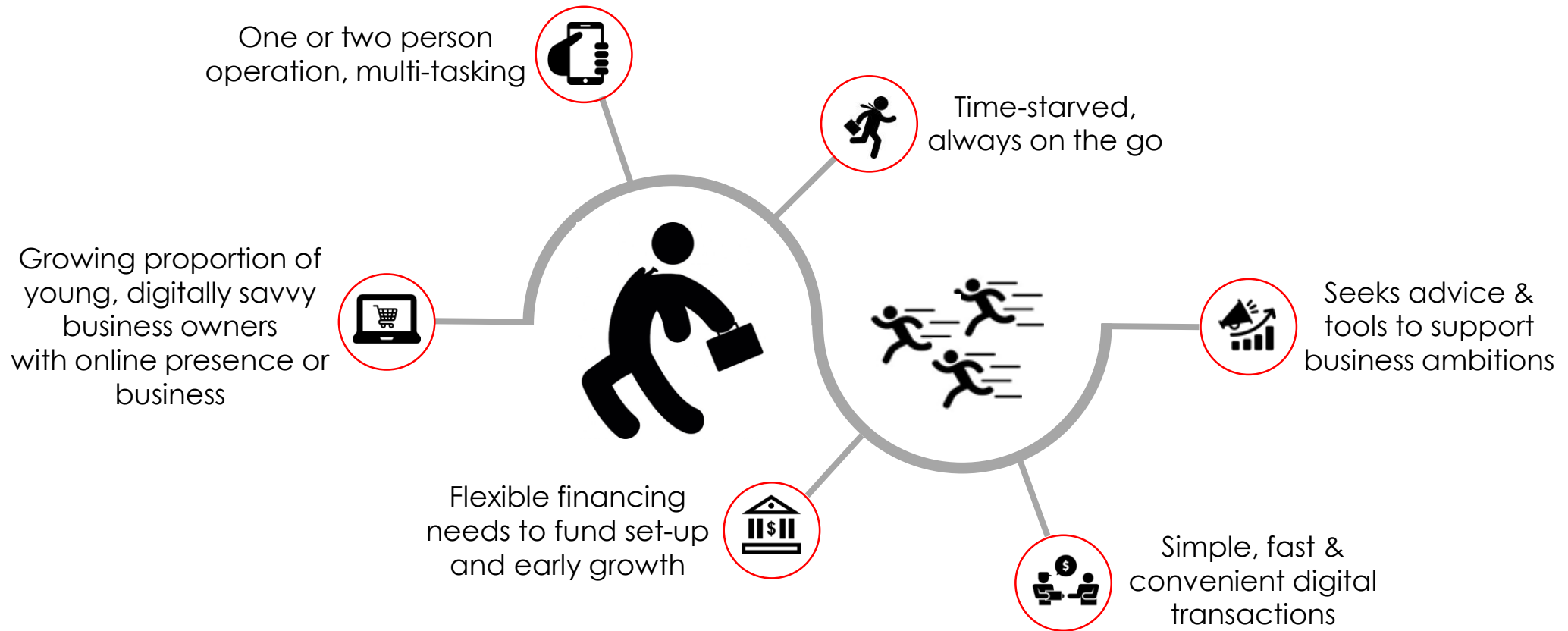
Redefining Customer Engagement through Digital Transformation

Delivering greater customer value for SMEs



Serving the “Born Digital”

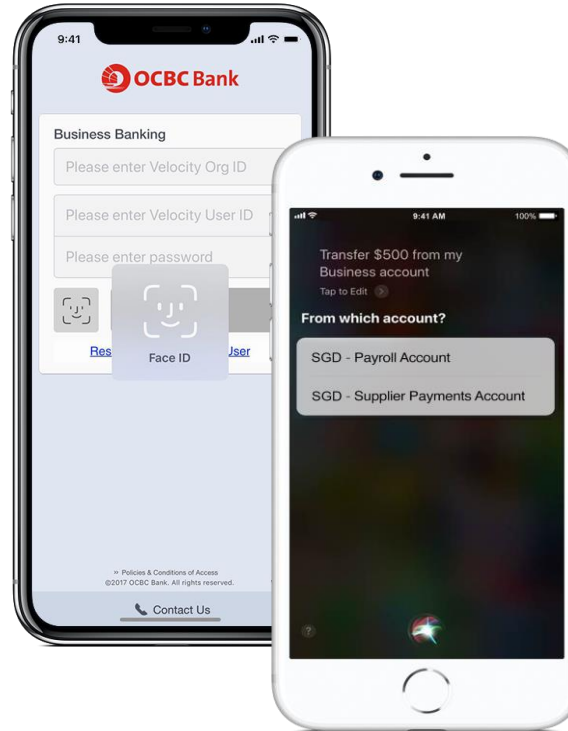
> **95% new customers are “Born Digital”**, signing up for digital banking from day one, driving the demand for mobile and digital-everything



Business Banking on the go

Bank-in-the-pocket for SME business owners who are time-starved, constantly on the move and multi-tasking

- Simple, fast, convenient information, alerts, approvals
- First to market with natural interfaces
- Shifting to omni channels, integrated with award-winning Velocity internet platform
- Growing from banking to beyond banking



First in Singapore with biometric authentication – OCBC OneTouch, Apr 2016



First in Asia with Voice recognition for funds transfers and account enquiries, Oct 2017

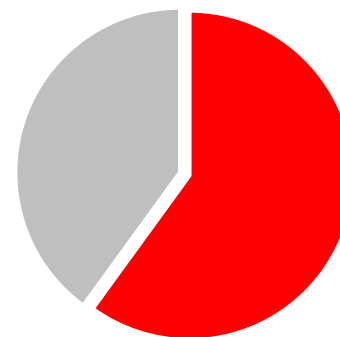
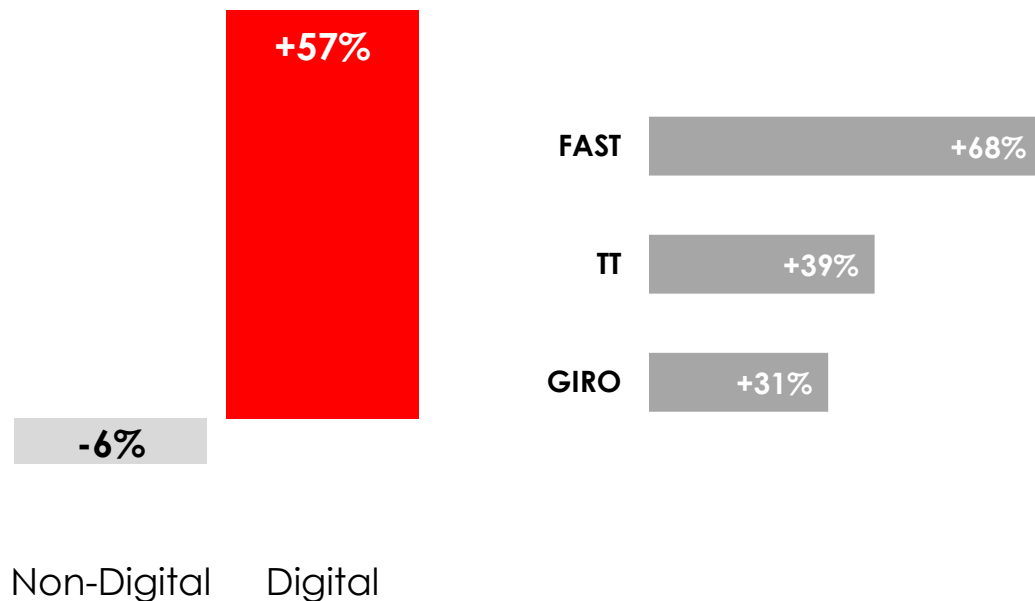


First in Asia with Face ID recognition for mobile business banking, OCBC OneLook, Nov 2017

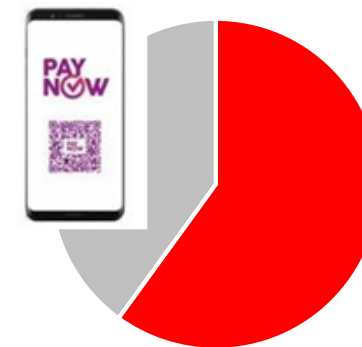
Rapid shift to Digital Transactions

Digital transactions in Singapore grew by 57% since Dec 2016 and account for 67% of total transactions

Transaction Value



67%
transactions
are digital
1H 2018



>60%
Corporate PayNow
registrations as at
15 Sep 18 are OCBC
SME customers

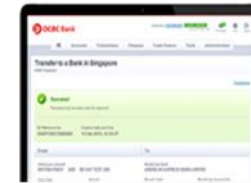
Transforming digital engagement

Expanding mobile, self-help services, targeting to **shift 90% new business accounts and 40% business loans to digital in 2019**.

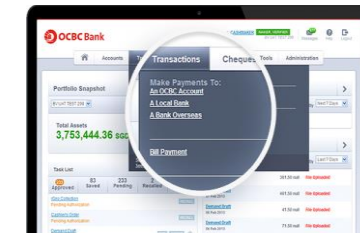
Designing differentiated services to cater to customer needs and preferences for high-tech and high-touch experience, maintaining high customer satisfaction.



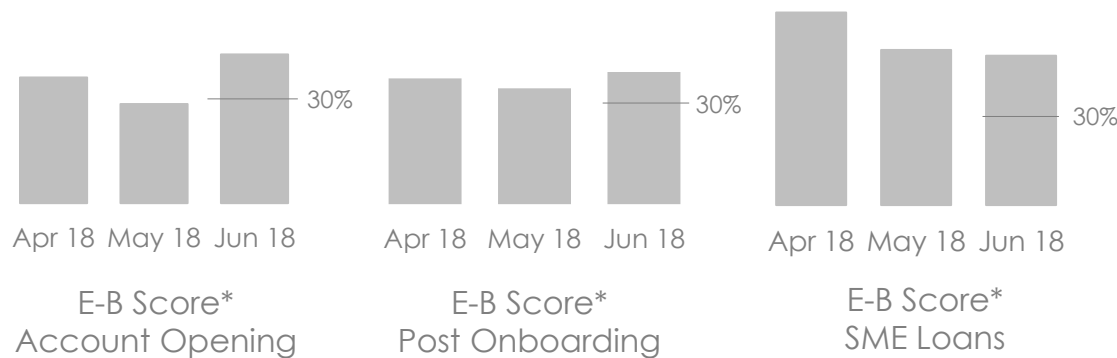
Mobile



Tablet



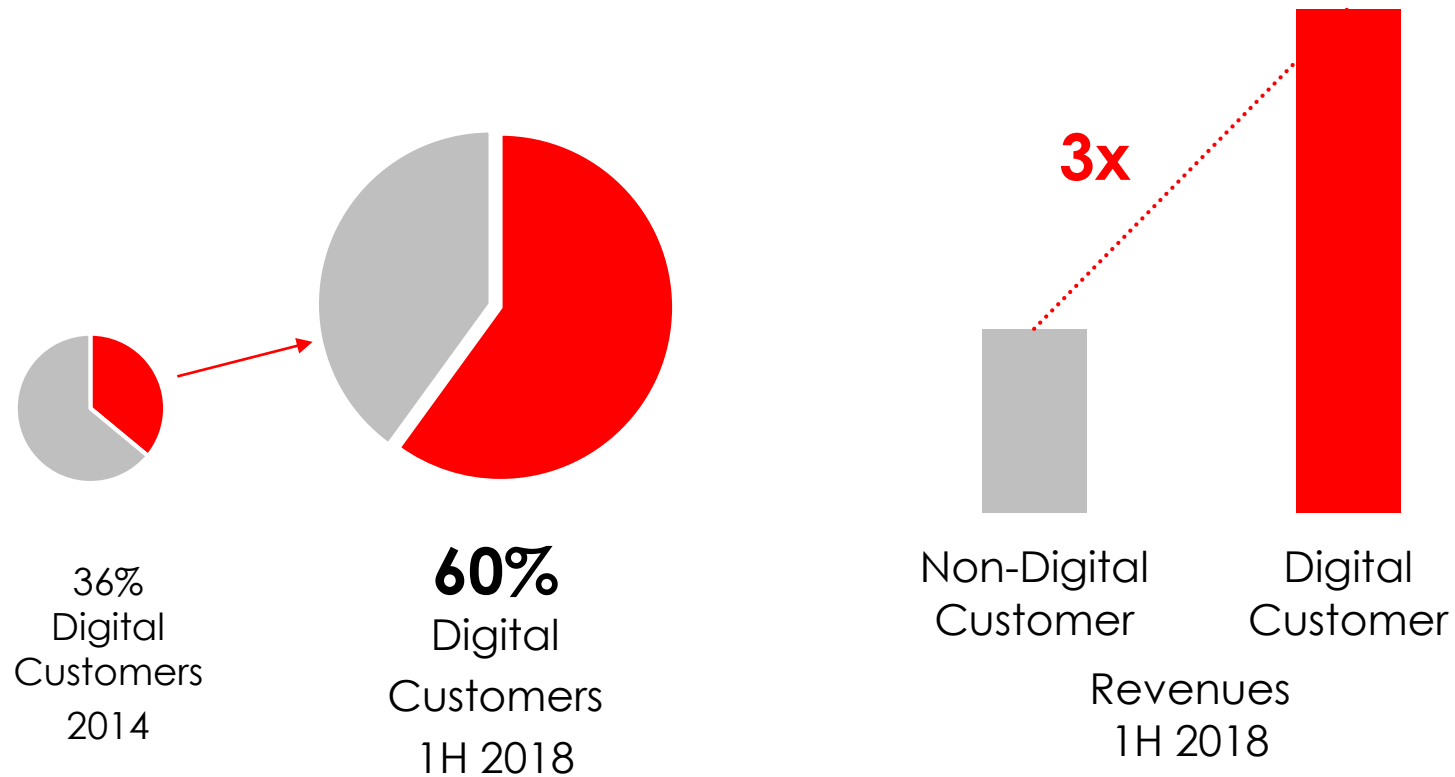
Online



* Exceed Expectations minus Below Expectations, Net Promoter Score-format customer survey

Growing Digital Customers

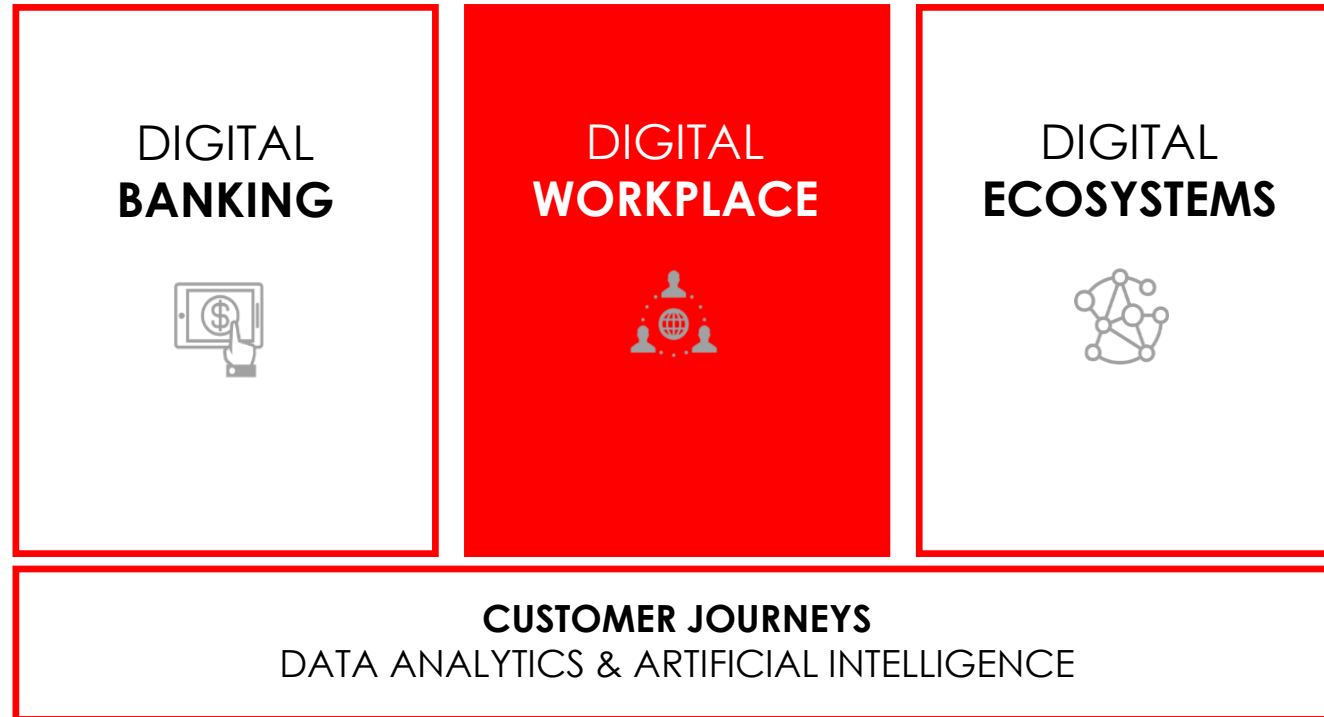
60% of SME customers in Singapore are digitally active*
with 3x revenues of non-digital customers



* Digital customers are defined as customers who have used internet or mobile banking at least once in 3 months. Data as at 30 June 2018

Redefining Customer Engagement through Digital Transformation

Delivering greater customer value for SMEs



Leveraging Data Analytics and AI to Transform Jobs



Sales Leads Management



2X increase in conversion of sales leads from propensity modelling analytics for loans



Relationship Dashboards



Customer behavioural insights from transaction and data analytics to trigger product cross-sell and deeper share of wallet



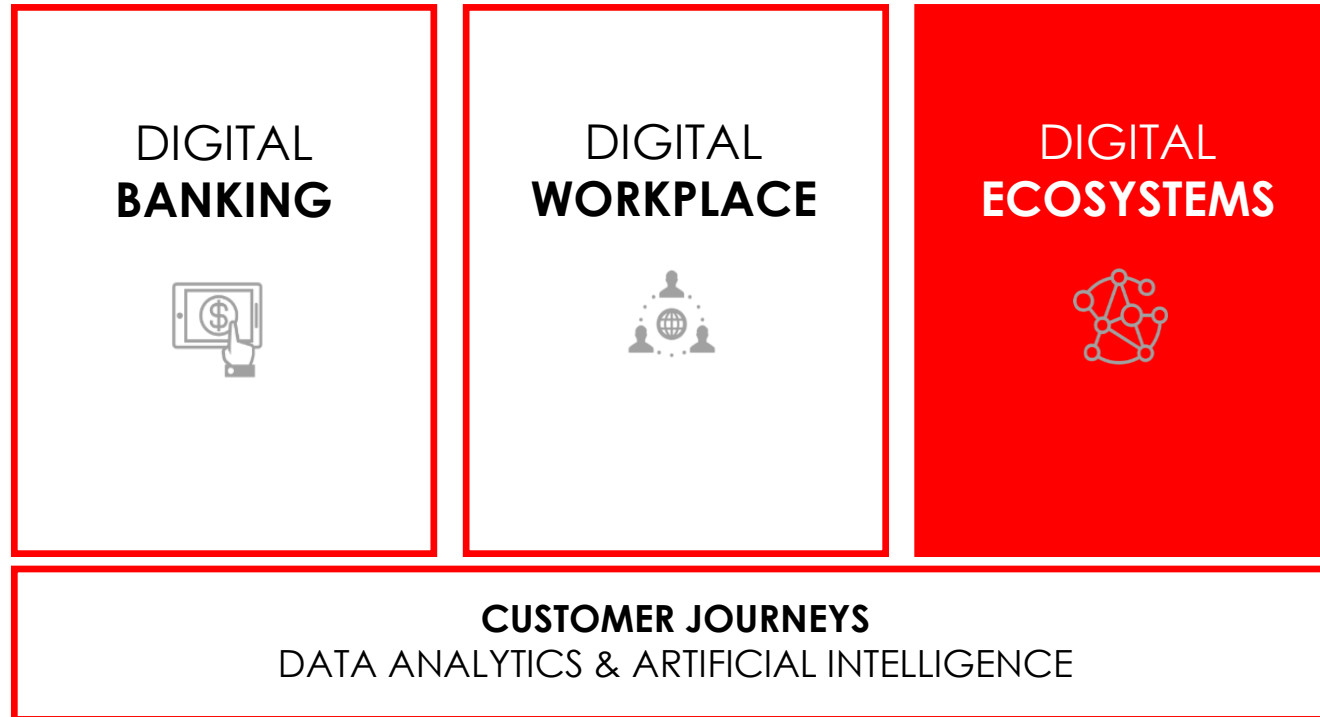
AML & Compliance



AI solutions to strengthen and automate customer and transaction screening

Redefining Customer Engagement through Digital Transformation

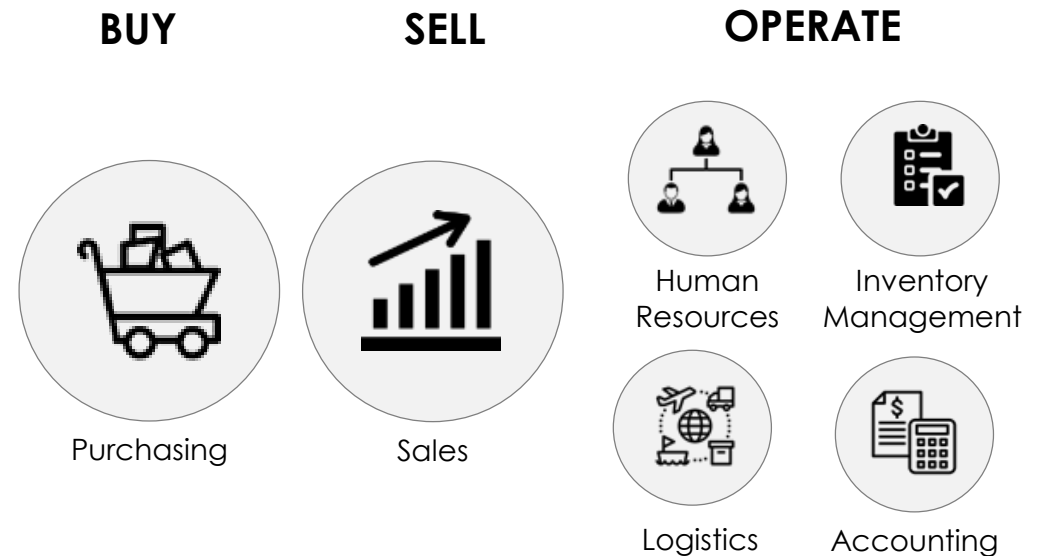
Delivering greater customer value for SMEs



Going beyond banking in ecosystems

Partnering Fintechs to deliver customised solutions, connecting SMEs with value chains and emerging ecosystems.

Building on our **first-to-market API solutions** beginning with Singapore government agencies such as IRAS and CPF as a foundation for B2B and B2B2C connectivity.

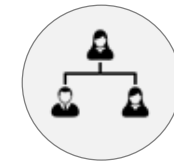


Accounting, HR and Compliance Reporting

Building on OCBC's long-standing partnership with Association for Small & Medium Enterprises (ASME) and supported by Enterprise Singapore.

Integrated solution to handle accounting, HR and compliance, designed with local regulatory requirements.

- Seamless generation and filing of financial statements, corporate tax and annual reports to ACRA, IRAS and CPF Board
- Data hosted in Singapore for added security and protection
- Rollout by end 2018



Human Resources



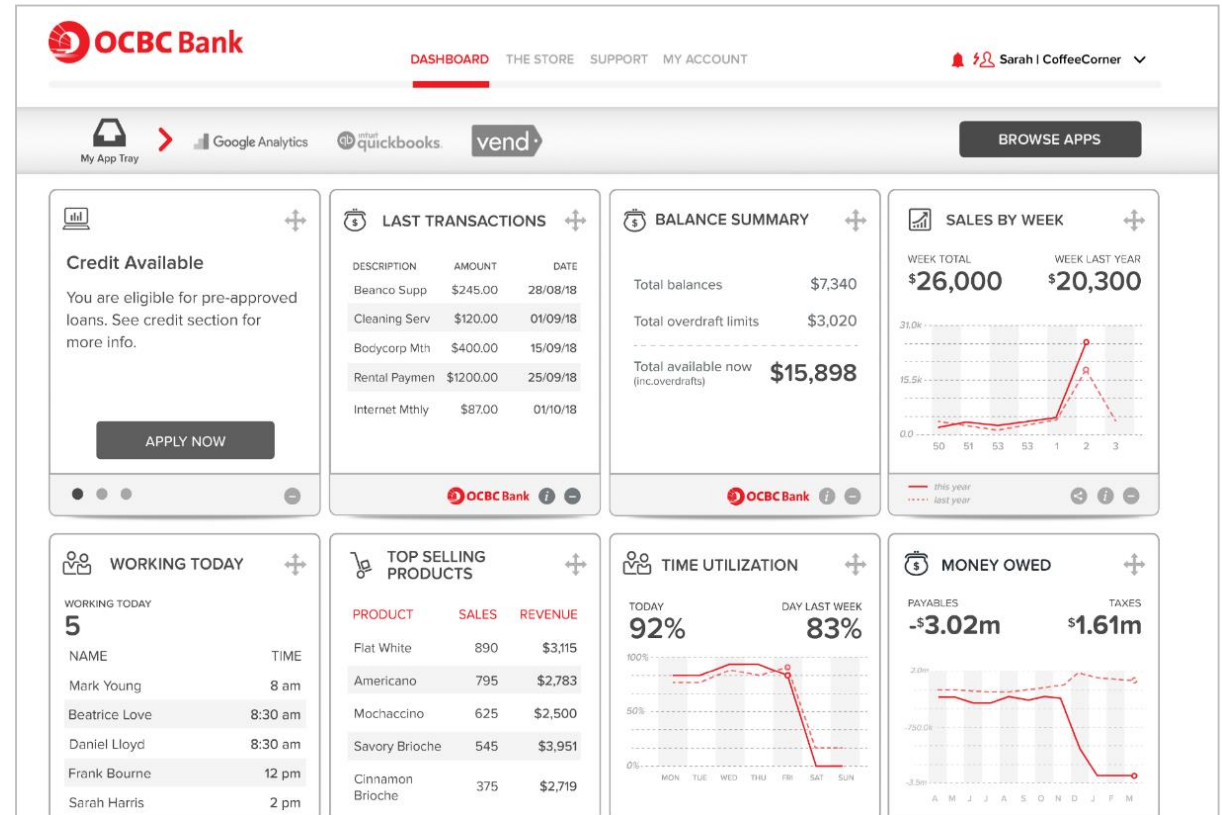
Accounting

Business Owner Dashboard

Equipping SME business owners with a smart business dashboard to stay on top of key performance indicators.

Integrating banking with beyond banking services to enable better financial management.

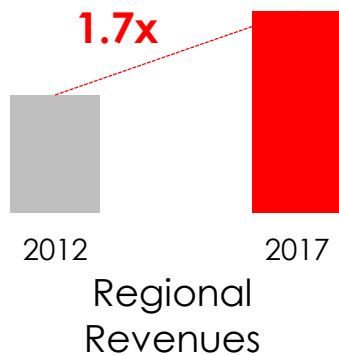
- Relevant apps for key “buy-sell-operate” functions of the business
- Customizable industry-based views
- Rollout by end 2018



9SPOKES

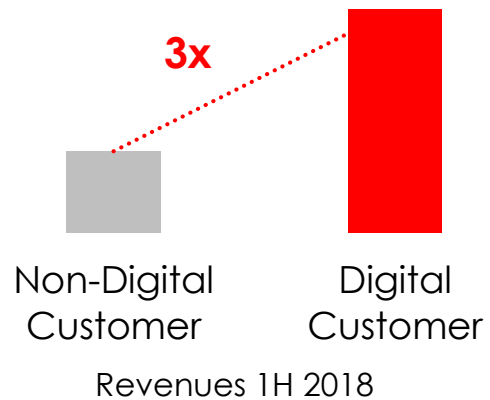
OCBC Digital Strategy Outcomes

GROW FRANCHISE



Continued momentum in customer and revenue growth in core markets from expanded reach through digital channels and ecosystem partnerships.

DEEPEN RELATIONSHIPS



Leveraging data analytics and AI capabilities to deliver new, tailored solutions in working capital and beyond banking solutions.

DRIVE LOYALTY



Maintain high customer satisfaction in our E-B scores, while strengthening our differentiated service model for customers.

* Exceed Expectations minus Below Expectations, Net Promoter Score-format customer survey

Driving Pervasive and Sustainable Digital Transformation

Pranav Seth

Head, E-Business, Business Transformation and Fintech and Innovation Group

24 September 2018

1

**Transforming
the core with
Fintech
Collaborations**

2

**Building an
AI-First future
while harnessing
immediate
benefits**

3

**Digital Culture
and
Empowered
Workforce**





1,500+ Fintechs evaluated globally

RegTech
Regulatory Technology - Use of Data and technologies such as AI and Machine Learning to enable the improved delivery of regulatory requirements

Helping banks deliver data-driven personalised recommendations and contextual insights to their customers within their digital channels.

WHY

Low-loan amount > \$2,000

Accounting = Tedious Painful

- Multi-supplier inventory to improve profit and reduce errors
- Earning and Burning of Points and Miles
- Artificial Intelligence and Machine learning, powered by IBM Watson



A Natural Partnership

BANKS' NATURAL ADVANTAGE

TRUST

END-TO-END CAPABILITIES

DEEP CUSTOMER RELATIONSHIPS

AGILITY

NO LEGACY BURDEN

EXPERIMENTATION & RISK TAKING

TYPICAL FINTECH ADVANTAGE

Embracing **FINTECHs** As **CO-INNOVATORS** and as **AGENTS of CHANGE**





Becoming a Fintech commercialisation partner of choice

Platform to leverage Open Innovation & the Fintech Ecosystem to accelerate transformation

Sharp problem & opportunity focus

aligned with transformation strategy

API access & real anonymised data

Sandbox / API gateway

Codified Risk Management approach

to enable Speed



THE ASIAN BANKER'
FINANCIAL TECHNOLOGY INNOVATION AWARDS 2018
THE BEST INNOVATION CENTRE BY FINANCIAL INSTITUTION IN SINGAPORE



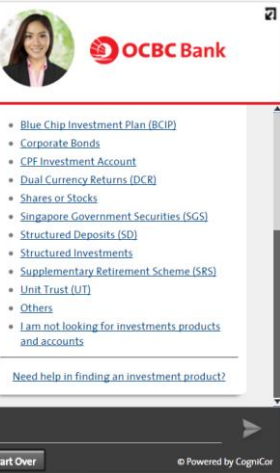
Not only to accelerate transformation across business lines...

Consumer & Private Banking

SME & Corporate Banking

Great Eastern

Emma Digital Concierge



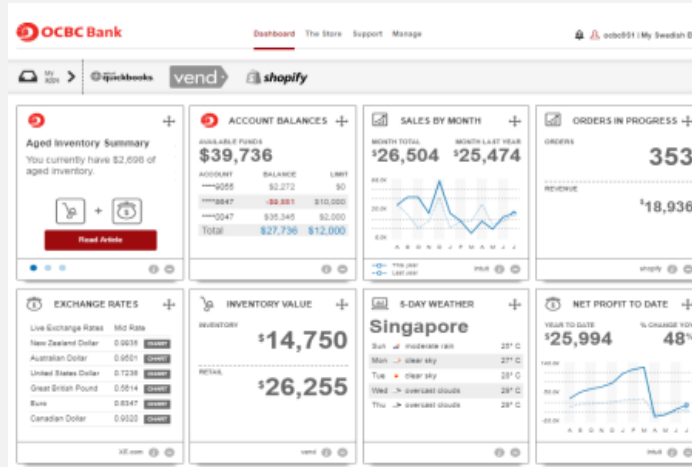
Launched Q1, 2017

Robo-investment Service



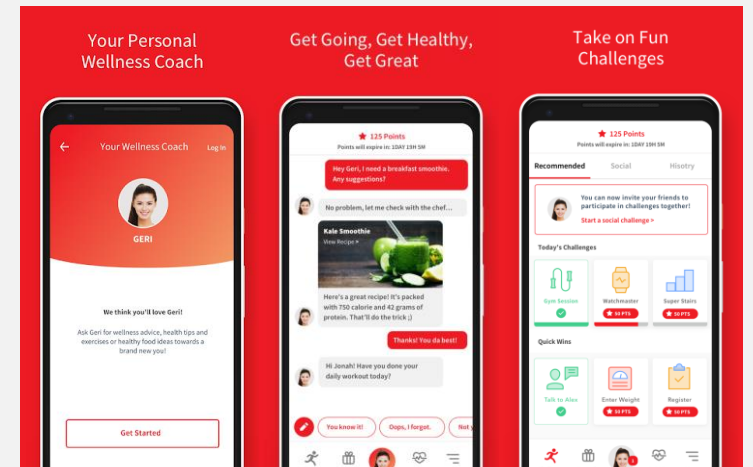
Launched Q3, 2018

SME business intelligence & operational management



Launching 2018

AI Health Assistant



Launched Q2, 2018



Some of our other co-innovation initiatives





But to fundamentally transform the core of the business

Strengthen moats
on core capabilities –
Best at basics

Codify, Automate, Embed
organisational intelligence

Scale efficiently



Transformation agenda (Fintech solutions WIP / Completed)

Regulatory
Compliance

- AML
- KYC
- Embedded compliance

Credit

- Alternative data
- Machine Learning based credit models
- Overall end-to-end credit process

Operational
Risk

- Staff fraud detection
- Customer fraud detection

Branding &
Comms

- Insights-driven customer communication

Audit

- Predictive audit
- Continuous audit

Human
Resources

- Smarter talent management
- Smarter employee services



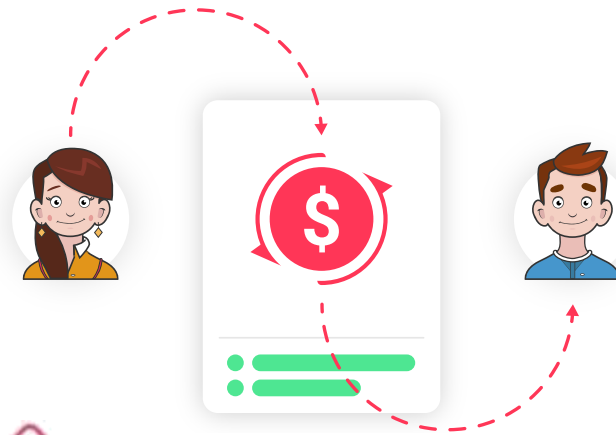
Combating financial crime effectively and efficiently



Transaction Monitoring using Unsupervised Learning

- New patterns uncovered
- 4.5 times more efficient
- 35% less false positives

Staged integration : 2018 to 2019



Automated AML Compliance Analysis

- 6 times faster
- 38% cases fully automated

Staged integration : 2018 to 2019



Intelligent Name / Entity Screening

- 85% reduction in screening hits – natural language based processing with intelligent naming conventions with cultural context

Live – 2018



THE ASIAN BANKER®
 The Regulatory Technology
 Implementation of the Year
 Risk Management Awards 2018



And innovating across all functions of the Bank - internal & customer facing



Automated Resume Screening

- 80% accuracy in shortlisting suitable candidates in job functions with high volume

Live : Q3, 2018



Insights-driven Customer Communication

- 7 times more relevant messaging
- 261% increase in conversion rate and purchases

Live - 2018

Understanding Stay Factors (culture, development & benefits)



Prediction of Staff Attrition



Employee Attrition Management

- Internal analytics capability to analyse staff hiring and performance patterns
- 75% accuracy in predicting likelihood of staff attrition

Live - 2016



**THE
OPEN
VAULT**

AT OCBC

Pervasive. Purposeful. Energised.

1

Transforming
the core with
Fintech
Collaborations

2

Building an
AI-First future
while harnessing
immediate
benefits

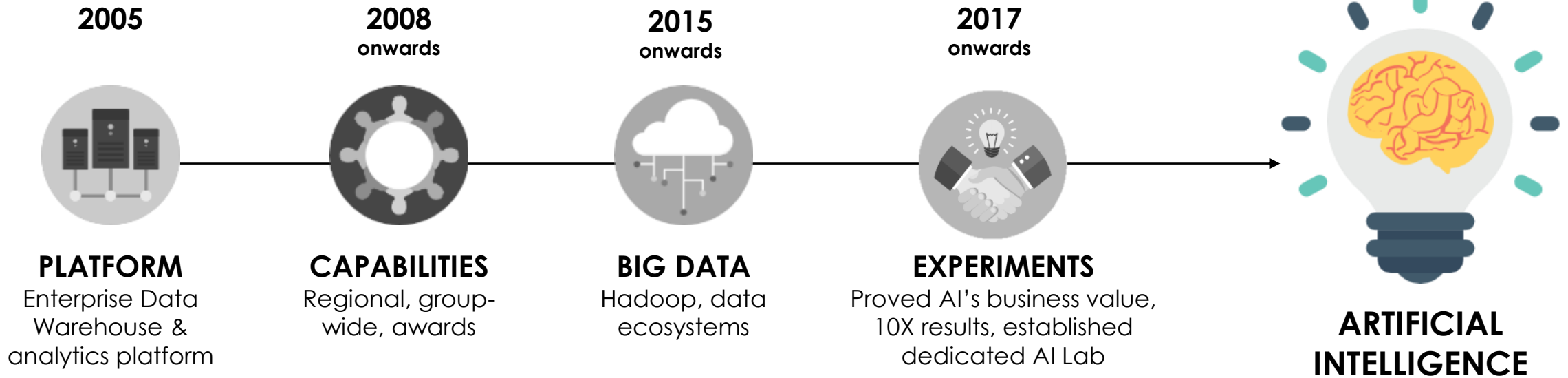
3

Digital Culture
and
Empowered
Workforce



Establishing an early lead in AI

Adopting AI as our core competitive differentiator



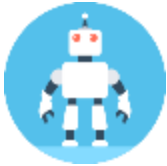
Using AI as a competitive differentiator
we recognise that laggards will struggle to catch up



OCBC launched Singapore's First FI-focused AI Lab

Complement our existing analytical / data functions

Why do we need an AI Lab?



AI will be fundamental

in refining our core processes and transforming our Bank



Allow rapid creation of proprietary models

across a wide spectrum of business problems



Build in-house AI talent

with knowledge transfer to BAU, avoid dependencies on vendor's AI black-box

Objectives of the AI Lab



Build AI applications



Define the architecture



Develop AI skillsets



Building on our strong data-driven capabilities

Harnessing AI's transformative technology to create new opportunities



Our data

Banking data
(customer profile, transactions)

Ecosystem data
(telco, retail)

External data
(News, credit reports, social media)

Analytics & Insights

\$110 million
shadow revenue

~30%
of overall new product sales

Campaigns & Offers

1,600
campaigns

30 million
leads



Embedding in Process Transformation / Value Proposition

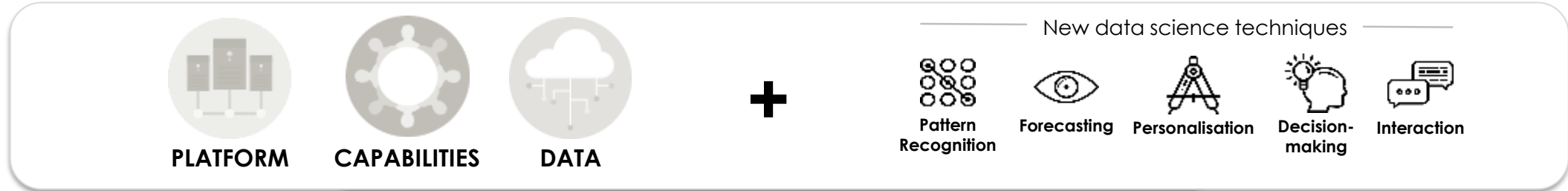
Note: Data based on FY 2017



Transforming how we deliver banking services

Enabling OCBC to deliver new customer values and business efficiencies

ARTIFICIAL INTELLIGENCE



Creating Customer Intimacies

- Tailored products & services
- Ubiquitous presence

Personalising interactions to meet the unique needs of each customer

Making interactions natural and frictionless, providing always-on services

Driving Business Scalability

- Smarter decisions
- Intelligent automation

Using data science to derive better insights and optimise business outcomes

Automating routine tasks and processes, while maintaining or improving quality of experiences



Examples of AI use cases that we are working on

Creating Customer Intimacies



Voice Banking with Google Home
transactions capabilities soon

400
users daily



Real-time Location-based Marketing Offers
personalised & contextualised

3x
more relevant



Next-Best-Action Recommendations
after every customer interaction

+80%
accuracy in identifying customers' needs

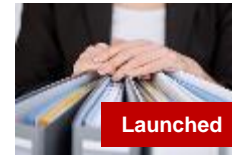


Insights for Corporate RMs on Potential Deals
using AI to derive insights from news



Deliver relevant insights on customers' investments
for smarter investment decisions

Driving Business Scalability



AI-Powered Automation
(multiple processes including loan repricing, service requests, financial reporting, merchant invoicing, etc.)

Bank-wide
adoption across different units & functions



Filtering of Adverse News for Anti-Money Laundering
augmenting human analyst efforts

50%
volume reduction



AI-Powered Virtual Service Agents
auto-response to service enquiries

starting with customer email enquiries



Augmenting Analysts for Credit Research
using AI to analyse earning reports



Instant Approval of Motor Insurance Claims
using AI to analyse damage from photos



While building “modular AI” foundation required for longer-term fundamental transformation



Banking terms language model

Sentiment classification (news)

Adverse news classification

Entity recognition (corporates)

Pattern recognition

Predictive algorithm

Computer vision

Intent classification

Entity recognition (individuals)

Entity recognition (corporates)

Text clustering algorithm

Time series forecasting

Recommendation engine

Object recognition & processing

Text clustering algorithm

Dependency parsing

Attribute and entity matching

Information extraction from text

Optimisation algorithm

Relation network

Name matching

Knowledge graph creation

Natural Language Processing

Machine Learning

Perception Technology

AI Foundation blocks that can be re-used for other use cases



We believe that AI will start delivering significant benefits over the next 5 years

Create Customer Intimacies



75%

of customer service requests to be AI-assisted, resulting in faster turn around

Drive Business Scalability



75%

of all employees' job to be augmented with AI, resulting in less manual efforts and errors

20%

lift in staff productivity or man-hours saved to complete a task



Committed to being ethical and responsible

To both our customers and staff in our pursuit of being an AI enabled organisation

Ethical use of data & AI

OCBC is founding member of the MAS' committee to promote responsible and ethical use of AI

People & skillsets

OCBC's FutureSmart program trains and develops the digital skills of all employees of the OCBC Group

Committed to fair and transparent practices

Committed to developing our staff

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**Digital Culture
and
Empowered
Workforce**



Augmenting our roles as advisors & custodians

With new ways of thinking and working across the entire bank

Customer obsessed

Focusing on customer needs and wants

Rapid experimentation

Creativity, Adaptability,
Fail Fast. Fail Smart.



Trusted Advisors & Custodians

Human Touch, Prudent Risk
management, Security...

Organisational agility

Breaking down silos

Continuous learning



Transforming bankers into innovative tinkerers!



Chief Risk Officer



Collections team

BUILDING CULTURE BY DOING



Empowering our staff to thrive in the future workplace

Through enabling them with new innovation skills



Ignite the Geek



Monthly Speaker Series



Workplace by FB



LinkedIn Learning



Live updates from key conferences



Regional Roadshow



Outside perspectives



Scaling staff insights



TOV Deep Dive



Digital training



Strategy workshops



TOV FAST TRACK



TOV Challenge

Build battle scars



Tackle real business problems



Ideas to Products

Celebrating the #Rebels



CEO Innovation Award



Celebrating Innovation success & failures



#OCBCRebels



Building a #Rebel community



Breaking traditional banker roles with #OCBCRebels

OCBC offers safehouse for 'rebels' to hatch breakthrough ideas

JAMIE LEE | leejamie@sph.com.sg | @jamieLeeBT



For about three months, Mr Koay would pop into OCBC's fintech lab The Open Vault after his official hours, and stay for a while more, to tinker - safely - with the banking system. PHOTO: KELVIN CHNG

Singapore



Front page feature for #OCBCRebels

Solve problems differently

#OCBCRebels evangelising to our newcomers



And embedding our 10 year design journey into our DNA

Transforming product and channel managers into journey managers

2008

2018

Longest-running Customer Experience & design team established in a Singapore bank



Design embedded into every channel and product



Forms



Credit Cards



Website



Mobile Apps



Email



Customer Journeys



Chat



Branch

Basic design training + Certification for all product & channel managers

OCBC GOOD GREAT DESIGN BOOTCAMP



While building deep digital skills

DIGITAL BUSINESS MODELS & ECOSYSTEMS

Ever wondered why new ways of doing business keep emerging and why organisations are collaborating more than ever?

1. Understand what they are and how they create value for businesses
2. Learn definitions, terminologies, and applications

TECH & DATA

Technology is making the world more connected and enabling people and organisations. Data is becoming a necessary part of our lives and we can't live without it (well, almost).

1. Learn more about emerging technologies and how they are applied at the workplace
2. Find out all about big data, data science, data analytics, data visualisation, data storytelling, and many more
3. Discover how technology and data is impacting all of us and how to leverage them

NEW RISKS

You can be exposed to risks which you didn't know before and never imagined! Cyber security, data protection and privacy (just to name a few) are becoming increasingly important in our lives.

1. Learn about new risks that are emerging and how you may be exposed to them
2. Know how you can better protect yourself and OCBC by heightening your awareness
3. Discover how technology and data is impacting all of us and how to leverage them

CUSTOMER CENTRICITY

With increasing sophistication in customers and heightened competition from non-traditional competitors, the customer experience we deliver has to be redefined.

1. Discover new approaches to creating truly customer-centric experiences
2. Learn about human-centered design, great design principles and many more

MARKETING & COMMS

Social media platforms are becoming a big part of our lives. Ever wondered what it does for you and how it can impact you and organisations?

1. Learn how you can engage and leverage on social media platforms, on both personal and professional fronts
2. Discover all about digital marketing, personal branding and various communication techniques

THE WAY WE WORK

Have an open and collaborative mindset. Build learning agility. Partner one another to learn and grow continuously.

1. Explore techniques that enable you to be more agile so you can experiment and adapt
2. Be immersed in experiences that shape the workplace. Step up and be part of the change

LEADERSHIP IN THE FUTURE WORLD

We are all leaders. Leaders and leadership styles need to evolve in order to stay relevant.

1. Learn how to lead without formal authority, inspire others and build a culture of learning
2. Discover ways to lead the emergence of a new and diverse workforce

**29,000 staff engaged and involved
in Digital & Fintech activities**





Pervasive & Scalable Transformation



Pervasive. Purposeful. Energised Transformation
across customer and core support functions



Robust platform
to leverage the external Fintech ecosystem



Long term data & AI-led transformation
building for the future and reaping medium term goals



Innovation & Digital culture
widely embedded in large sections of the bank and growing



THE OPEN VAULT

AT OCBC

Thank you

Powering the Foundation for Digital Transformation

Lim Kiang Tong

Head, Group Operations and Technology

24 September 2018

Started with a clean slate...

20 First-in-Market

17 awards

389 ideas implemented

5,518 ideas generated

2012



It all began in 2012 where we needed a place to house innovations

2015 Carpe Diem O&T Innovation Lab was established



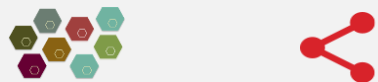
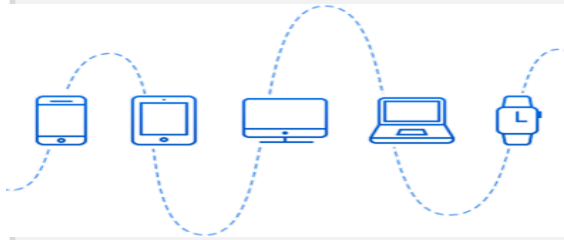
Our first innovation, **OneTouch** was born here and we grew rapidly...



Digital Transformation – Foundation

Technology as a cornerstone for digital business capabilities

Seamless Experience



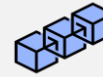
Natural and frictionless interactions on customers **preferred channels** across all touchpoints

Advanced Analytics



Smart insights of customer interactions to **increase relevancy** of customer journeys and product offerings

Open Ecosystem



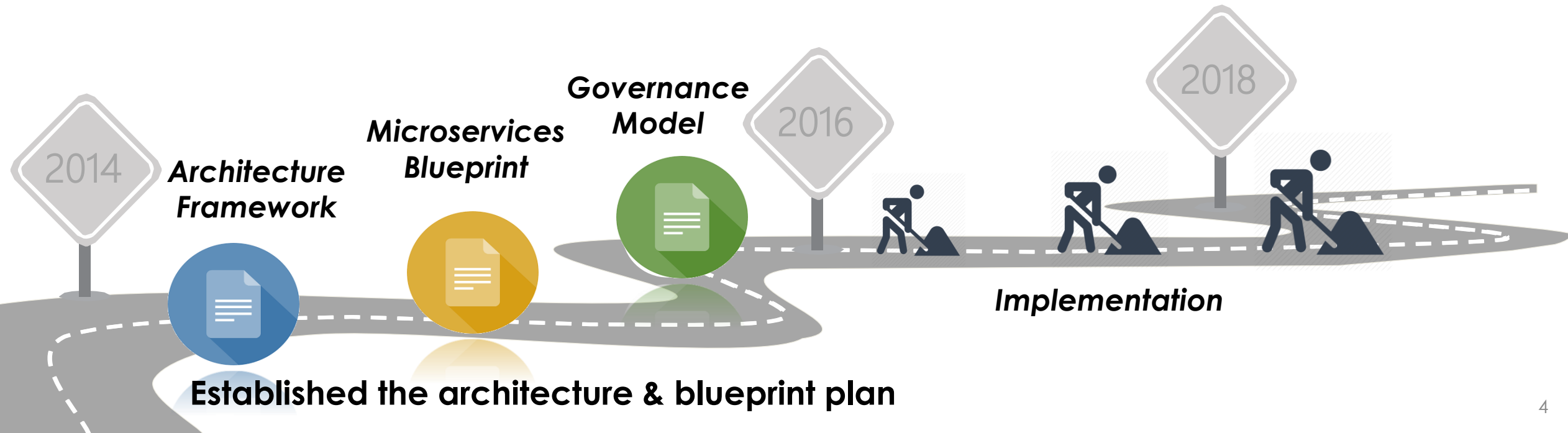
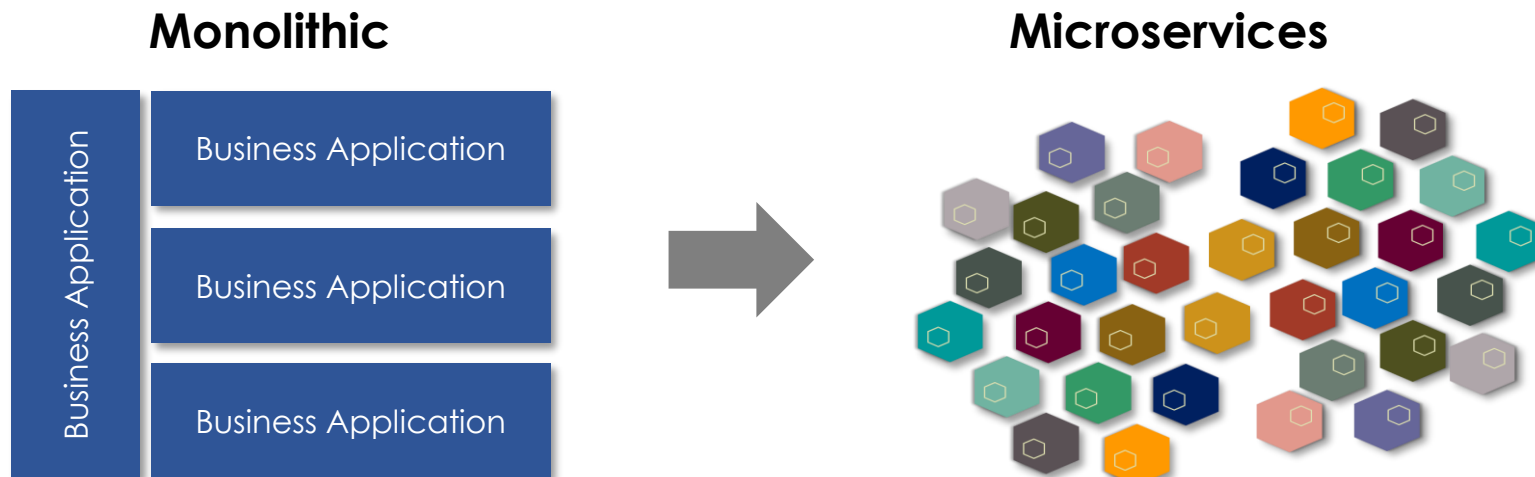
Networks of partnerships across a consortium of Fintechs and Industries through **open architecture**

Enhanced Security

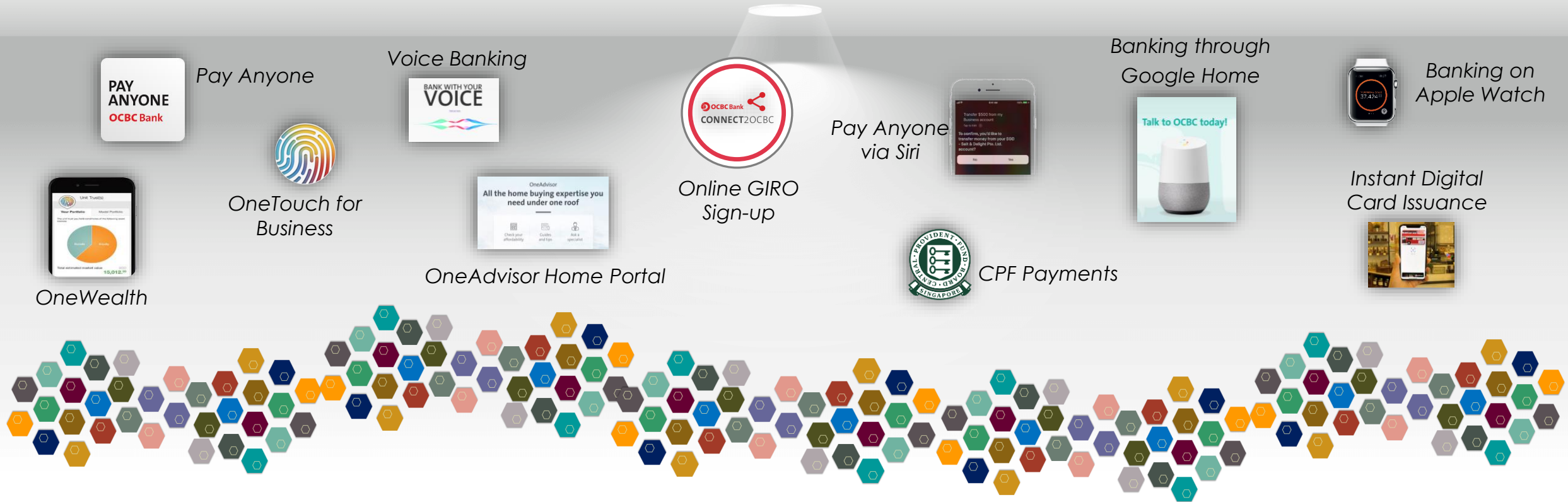


Detect financial fraud and ensure every personal and business transaction is **safe and secure**

Redefine & transform our core processes to microservices...



...to achieve a consistent and seamless experience across all channels



MODULAR

Stand-alone services for flexibility to build as required

SCALABLE

Ability to quickly accommodate growth

REUSABLE

Can be used repeatedly across many applications

Digital Transformation – Foundation

Seamless Experience



Natural and frictionless interactions on customers **preferred channels** across all touchpoints

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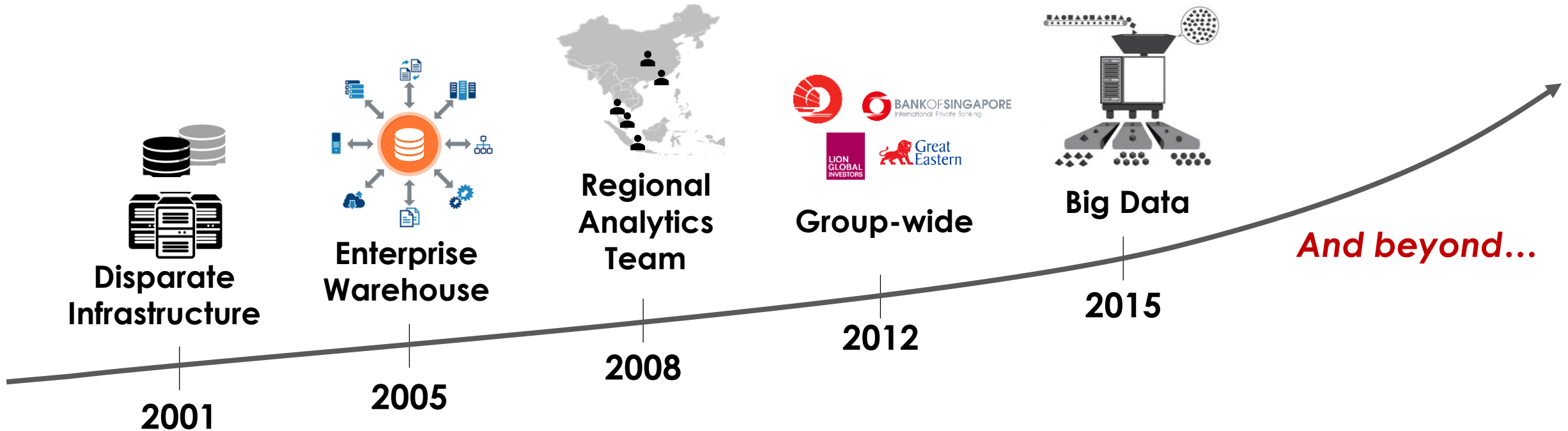


Detect financial fraud and ensure every personal and business transaction is **safe and secure**

Our AI journey...



Building capabilities through **investments in enterprise platforms, group analytics, big data** and experiments



...has allowed us to reap significant benefits

Driving Operational Efficiency



AML Screening
Launched: 2017



Smart ATM Cash Replenishment
Launched: 2017



Augmented Credit Risks Decisions
WIP

Creating Employee/Customer Intimacies



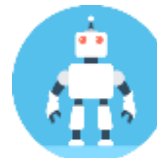
Ask Buddy
Launched: 2017



Ask Emma
Launched: 2017



"Ok Google"...
Launched: 2018



RoboInvest
Launched: 2018

Enhancing Risk Management



Unified Analytics Threat Management
Launched: 2016



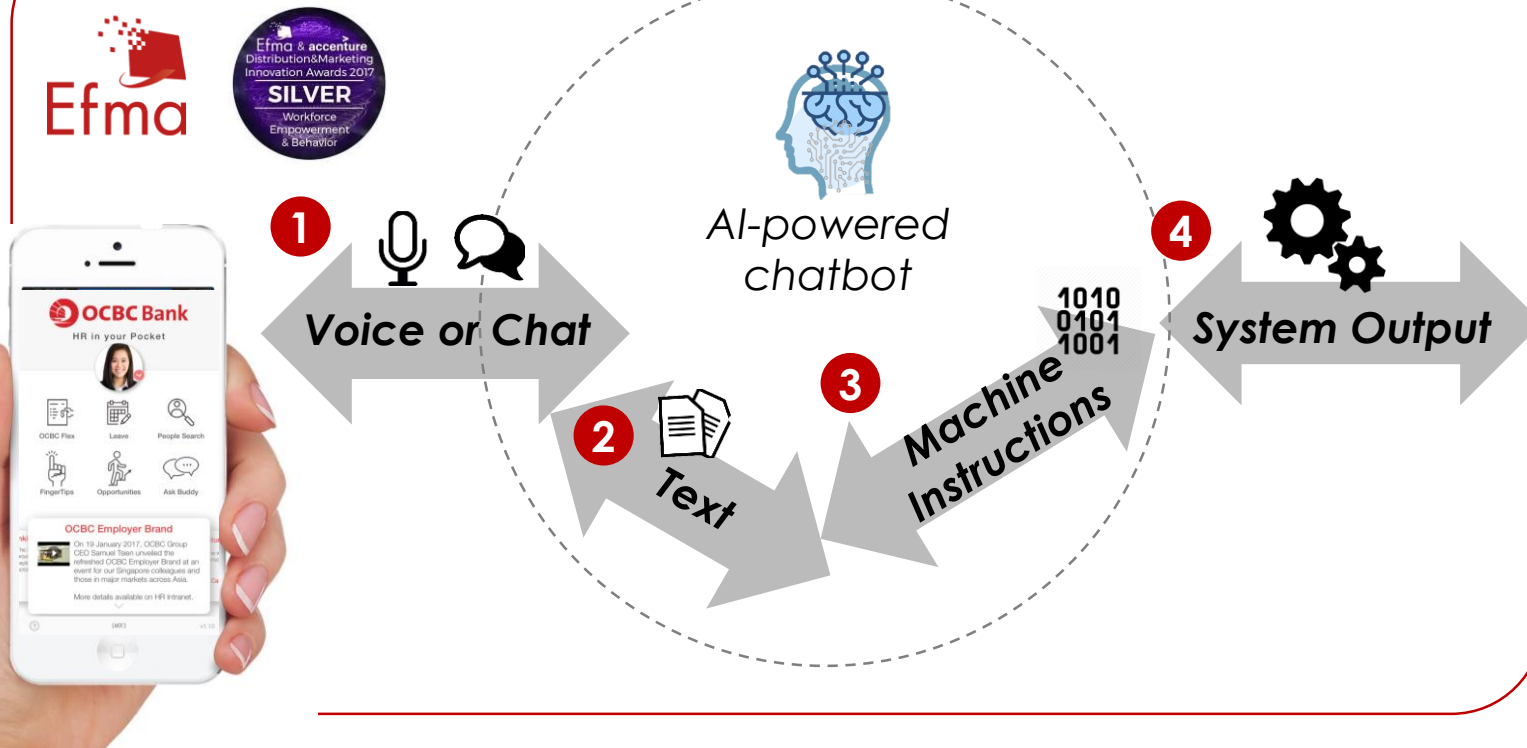
Cheque Frauds
Launched: 2018




AI-motor Claims
WIP

Delivering superior employee experience & operational efficiency

“Ask Buddy”



Address **90%**
of HR-related
questions 

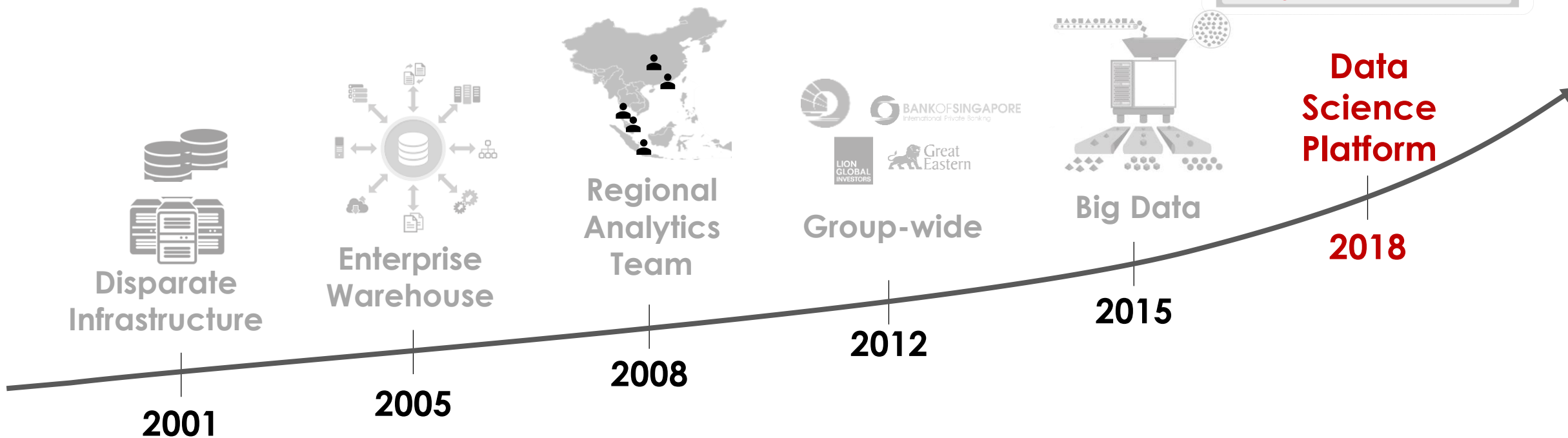
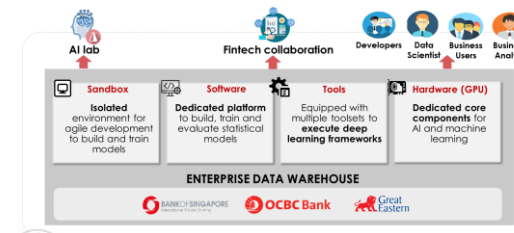
 **50% savings**
in manpower

Increase and improve employee engagement through a chatbot, and provide on-the-go access to a suite of HR resources

Continue to deepen our AI capabilities with a Data Science Platform...

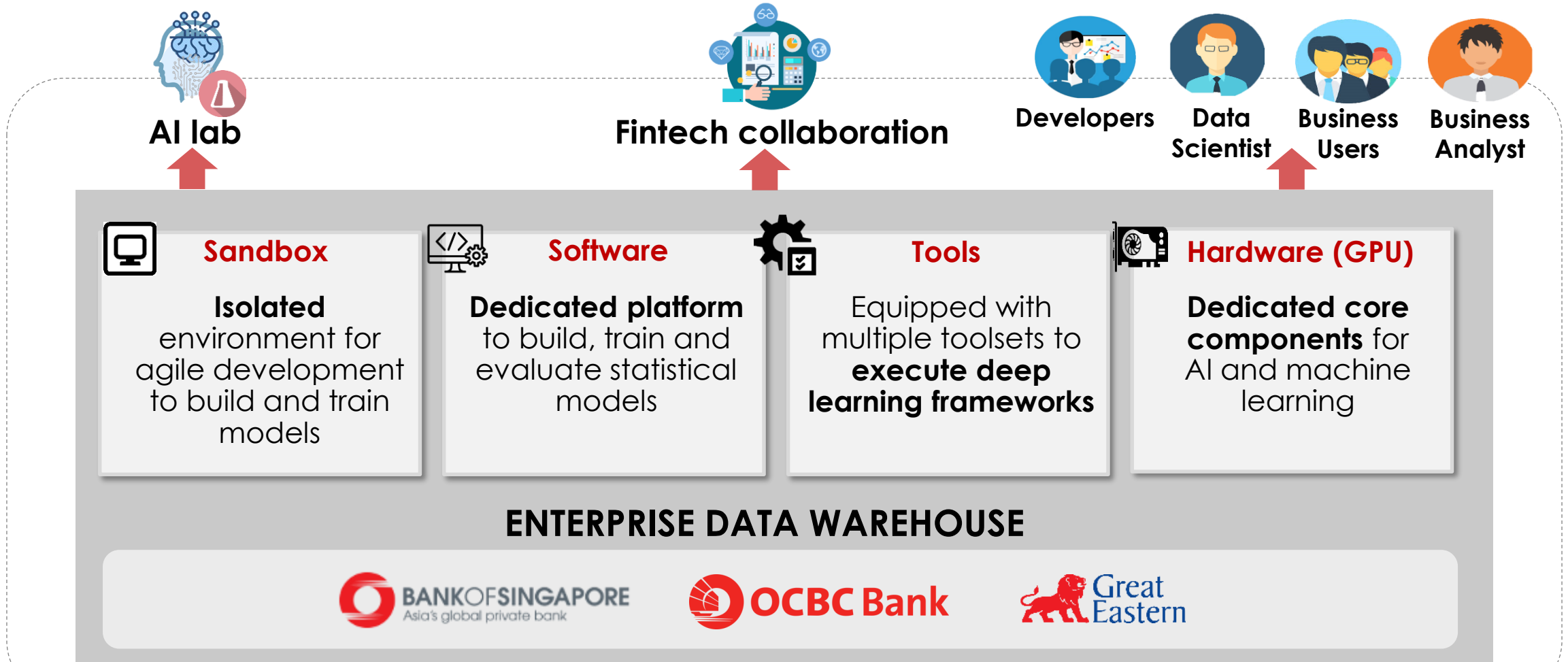


Drive adoption of advanced analytics technologies and **enable business capabilities with AI**



... to harness new opportunities

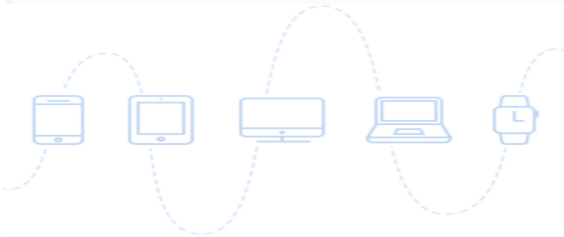
Enabler for business capabilities to redefine our core processes and **allow rapid creation of analytical models** by retrieving and processing data from multiple sources



Data Science Platform

Digital Transformation – Foundation

Seamless Experience



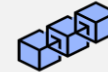
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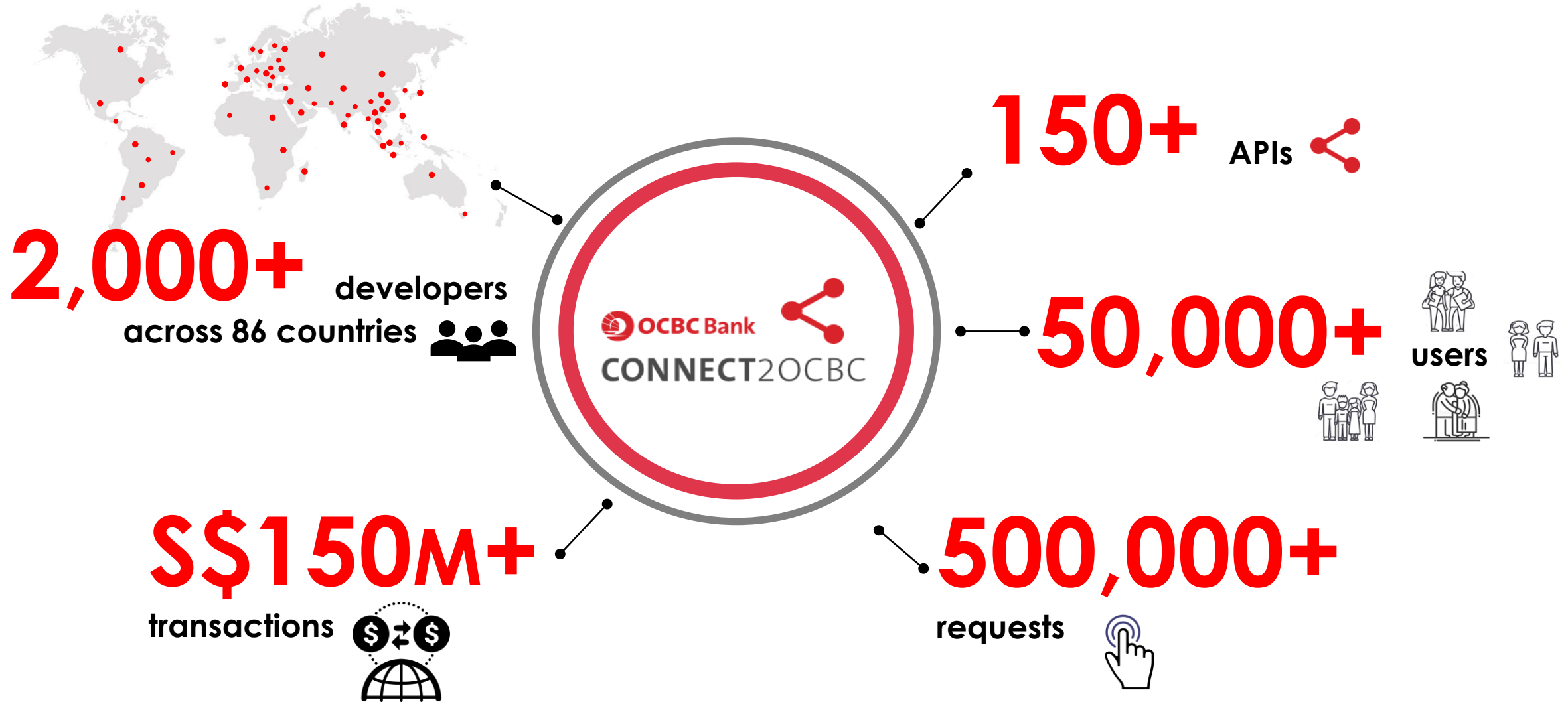
Networks of partnerships across a consortium of FinTechs and Industries through **open architecture**

Enhanced Security



Detect financial fraud and ensure every personal and business transaction is **safe and secure**

First bank in Southeast Asia to launch open API platform



Going beyond banking through API

Going beyond banking in ecosystems

Partnering with fintechs to deliver customised industry solutions and leveraging banking services to strengthen the financial management of SMEs and businesses within ecosystems.

Building on our Open API platform and successful first-to-market API solutions with Singapore government agencies such as IRAS and CPF as a foundation for B2B and B2B2C connectivity.

OCBC Bank

Going beyond banking... to get closer to the customer...

OCBC Bank

more to come...

1ST • Same-day CPF withdrawal
• Instant CPF Top-Up



Easier disbursement of Awards to student **1ST**

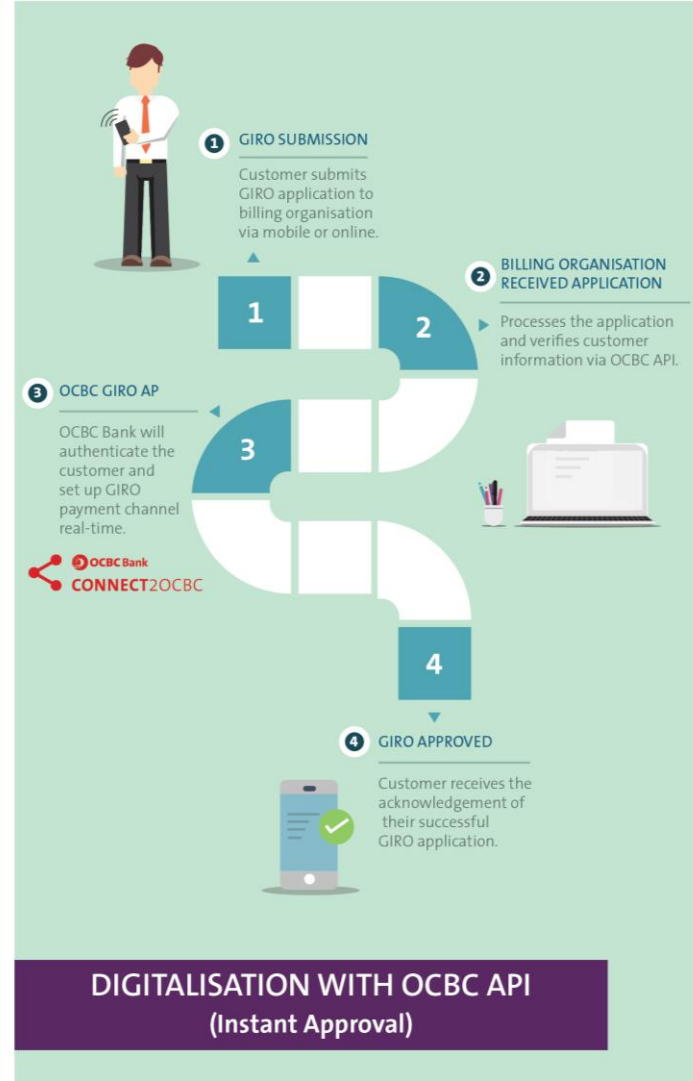
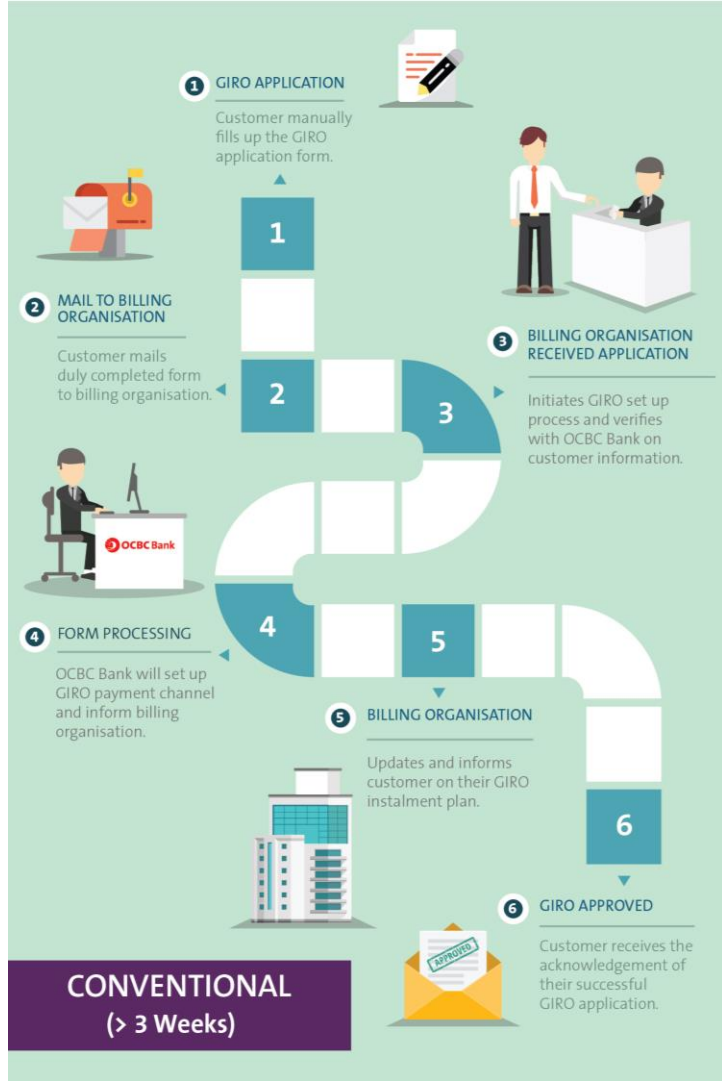


1ST Instant Giro set-up for tax payments



Senoko energy Instant Giro set-up for bill payments **1ST**

OCBC's GIRO sign-up API - Seamless, Paperless, Instant & Hassle-Free



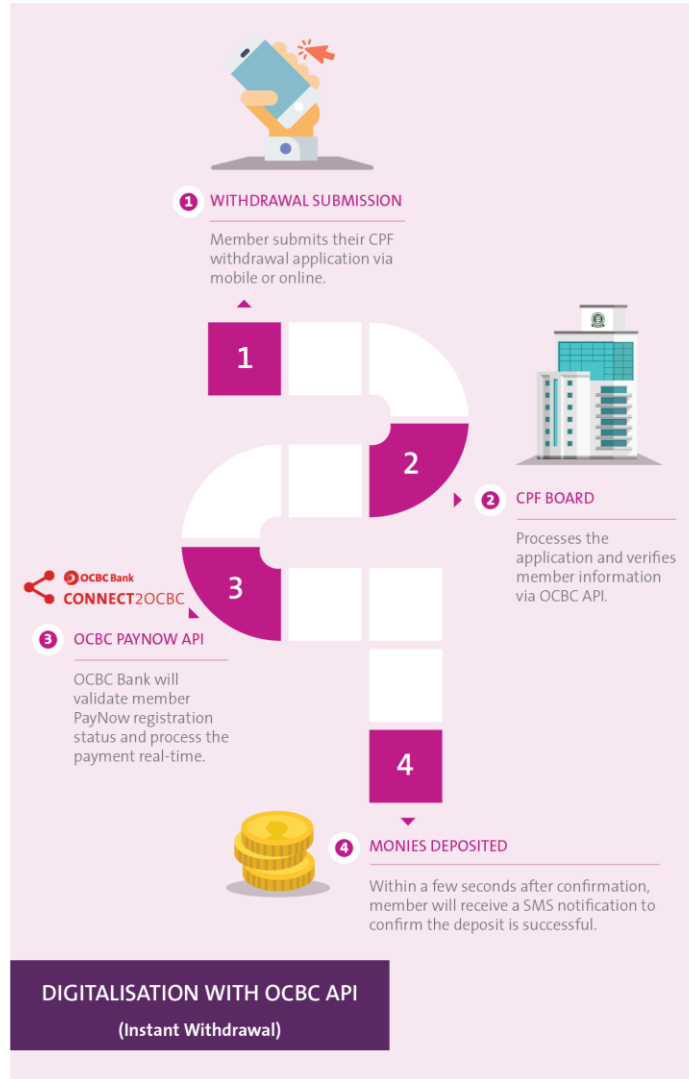
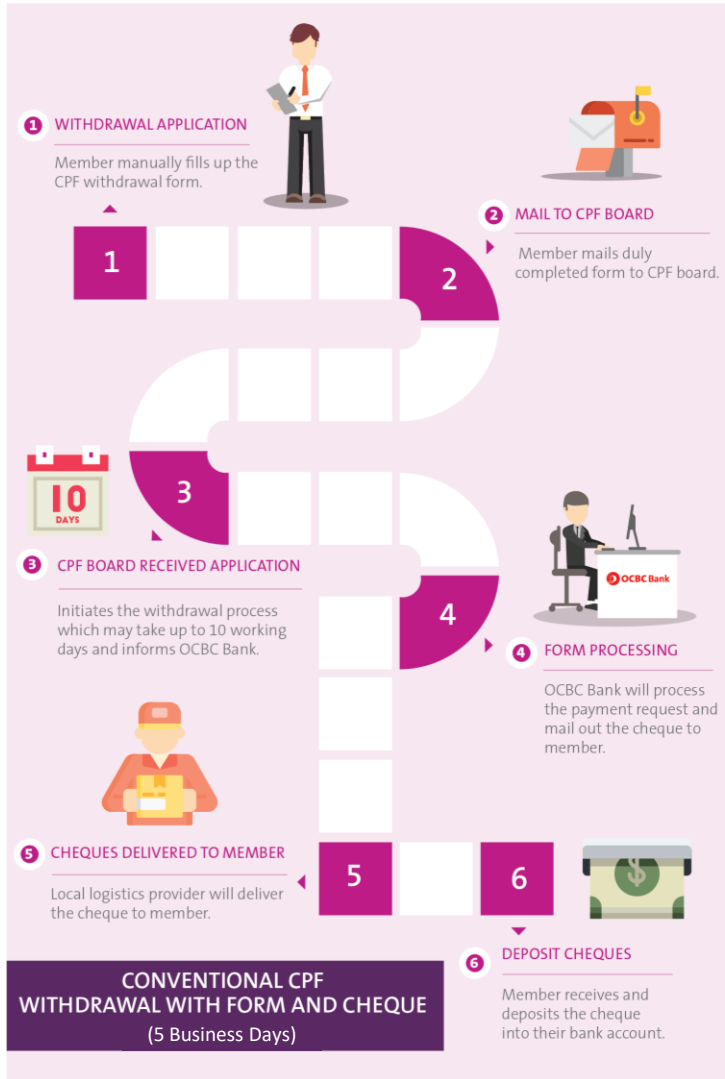
From 3 weeks to **instant approval**

Paperless GIRO application makes up **60% of total applications**

20% increase in new business

Launched: Nov 2017

OCBC's CPF withdrawal API - Seamless, Paperless, Instant & Hassle-Free



From 5 business days to **same day withdrawal**

\$S150M+
payment made via API

20% reduction
in cheque volume

Launched: Mar 2018

Multi-cloud strategy as a key pillar

Scalability to deliver business capability

Agility to explore new technology solution

Accelerated infrastructure provisioning

Risk Mitigation from single vendor



35%

applications on cloud
(2018)

85%

applications on cloud
(Future state)

▼ **90%**

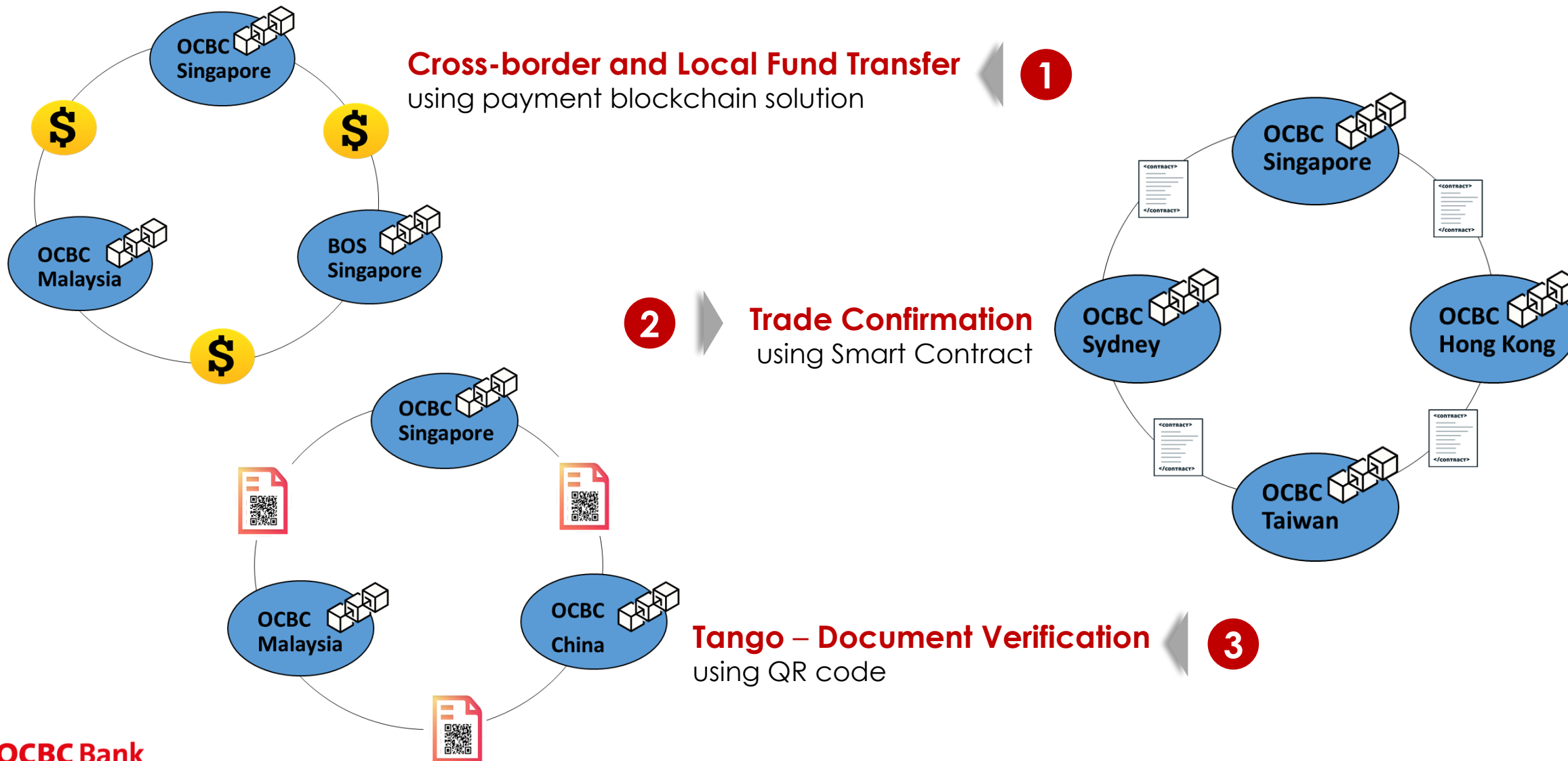
reduction in time to set up infrastructure

▼ **50%**

reduction in manpower

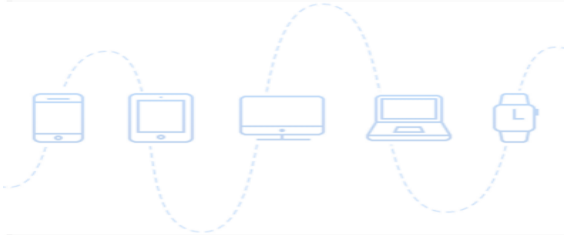
Pioneering in Blockchain technology

Applications of Blockchain within the Group:



Digital Transformation – Foundation

Seamless Experience



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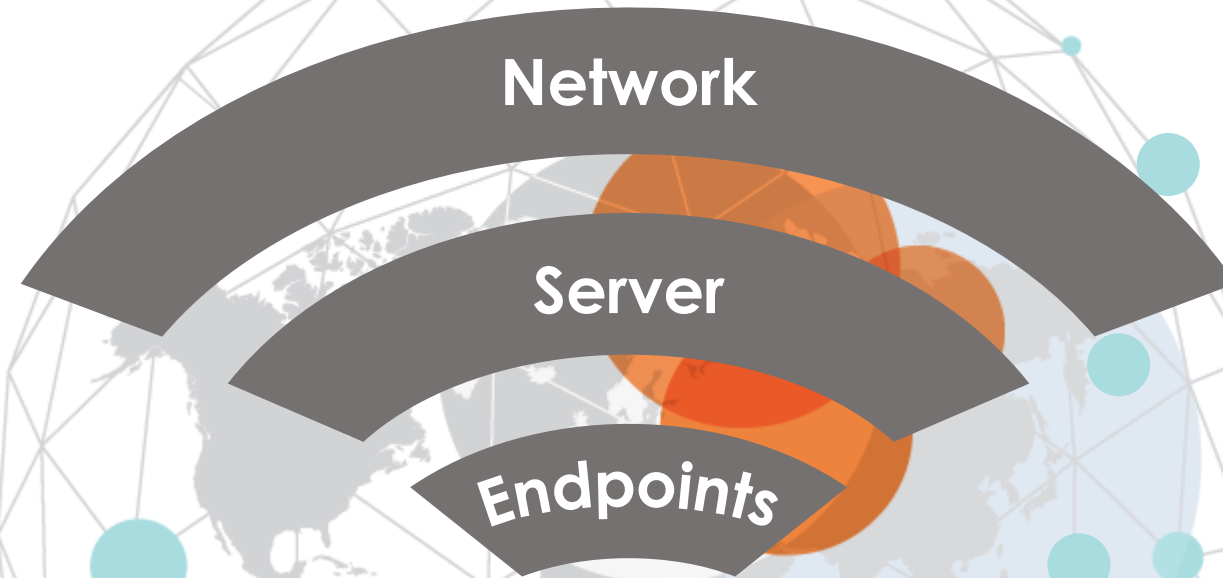
Networks of partnerships across a consortium of FinTechs and Industries through **open architecture**

Enhanced Security



Detect financial fraud and ensure every personal and business transaction is **safe and secure**

Multi-layered Cyber Defence strategy



Centred on people, processes and technology



CyberQUE™ partnership with start-ups to harness new cybersecurity solutions



Unified authentication engine to provide **secure and frictionless** banking

CyberQUE™ partnership with start-ups to harness new and emerging cybersecurity solutions

Innovate and bring
diverse expertise to fast
track capability building

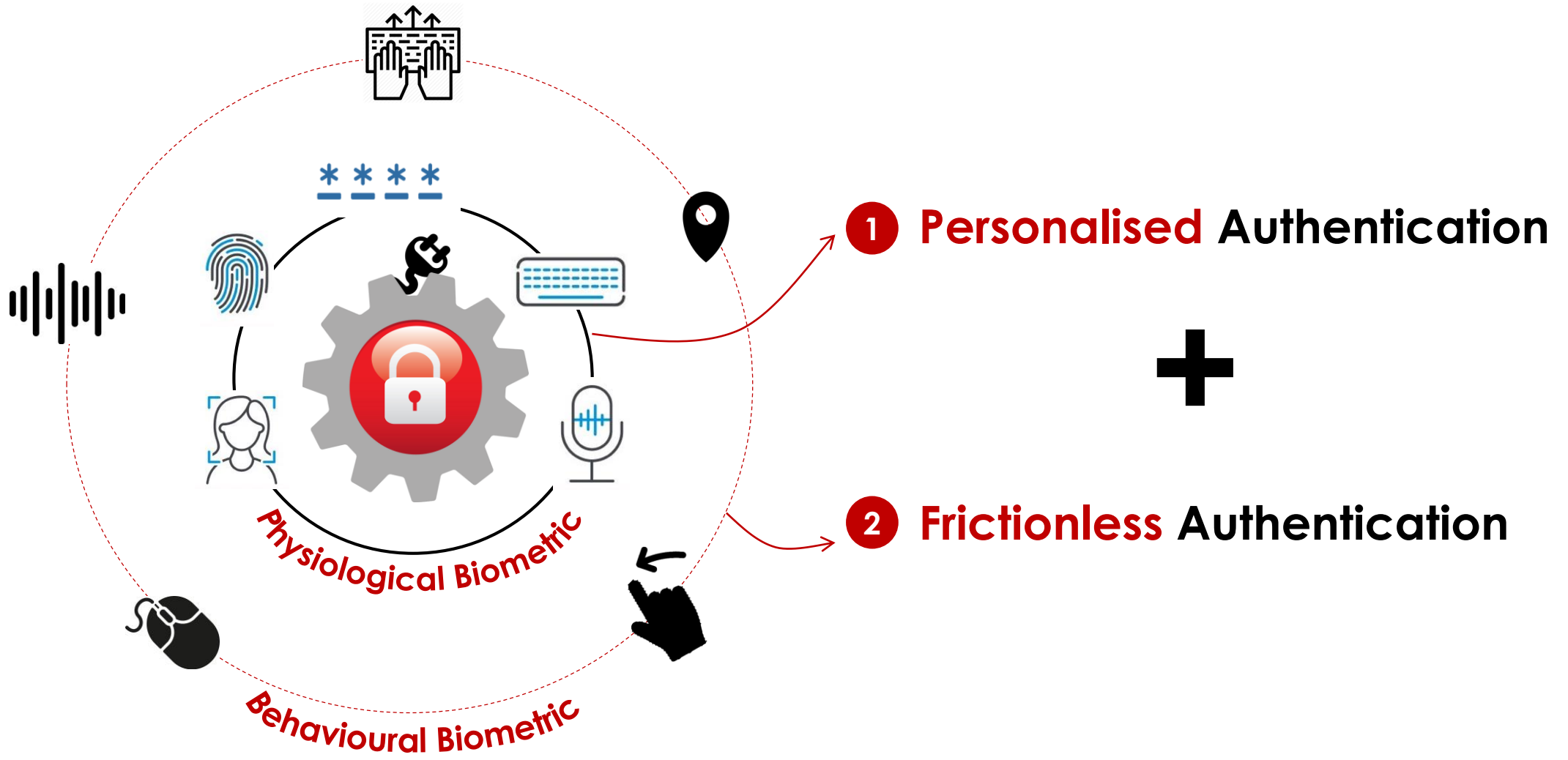
Search for niche
cybersecurity solutions



Partner with homegrown
and overseas start-ups

CyberQUE™

Unified authentication engine to provide secure and frictionless banking





**Never forgetting our people at the heart of the digital transformation –
A Digital Culture & Empowered Workforce**

An agile workforce and a collaborative environment has enabled us to innovate in the right direction



Open workspace to fuel greater collaboration and improve productivity



Modern infrastructure & paperless environment to enable



Close partnership with Business partners



1,000 Digital sessions held

90% + O&T staff involved in Digital sessions

16 awards

20 First-in-Market

389 ideas implemented

5,518 ideas generated

Continue to cultivate our digital culture and empower our workforce to accelerate innovation

Move towards
BUILD STRATEGY

60%
Agile projects

GROW DIGITAL SKILLSETS



Deepen core skillsets and upskill in emerging technology



Target for all Project Managers to be trained in Scrum (currently >70%)

INCREASE TECHNOLOGY WORKFORCE



LEVERAGE ON GLOBAL IT TALENT



Our Digital Transformation journey

