Investor Day 2017

Bill Chang

CEO, Group Enterprise

09 Jun 17

FY17 Group Enterprise Highlights

Operating Revenue

$6.6b +3.2%

Cyber Security

Revenue $473m

FY18 revenue guidance: $550m - 650m

#1 Market Leadership

APAC

Enterprise Data Services

Cloud

TELCO CLOUD AWARDS

Telco Cloud of the Year

4th ANNUAL CLOUD & DEVOPS WORLD AWARDS

Best Cloud Computing Adoption Project – G-Cloud

ICT Revenue

$2.9b +11%

45% of FY17 revenue mix

FY18 ICT revenue guidance: To grow mid-single digit %

Smart & Safe City

| Smart Urban Habitat | Launch of IntelliSURF™ Sentinel |

Continued growth & momentum

1. IDC Asia/Pacific Semiannual Telecom Services Tracker, 1H 2016. Fixed Networks refers to Leased lines, ELine, IPVPN, EVPN

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Resilient core business performance

Market Leadership

#1 International IPVPN in APeJ

#1 EVPN and Eline in APeJ

1 IPLC in Singapore[1]

1 Domestic Data in Singapore[2]

Source: IDC Asia/Pacific Semiannual Telecom Services Tracker, 1H 2016

Leader in APAC Telco services

IDC ITMarketScape:
Asia/Pacific Next-Generation Telcos: Telecom Services 2016–2017

Source: IDC, 2016

1. Leased line + Eline market revenue for Local Singapore
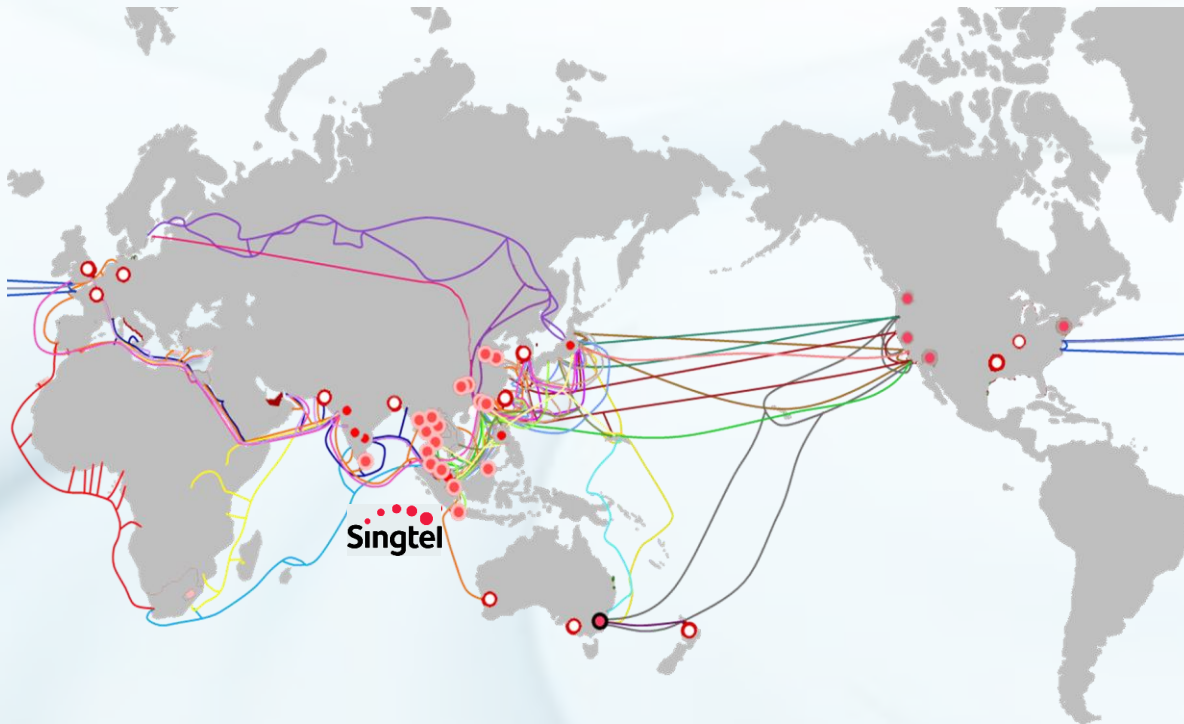2. Leased Line+ Eline+ MPLS+ EVPN for Local Singapore
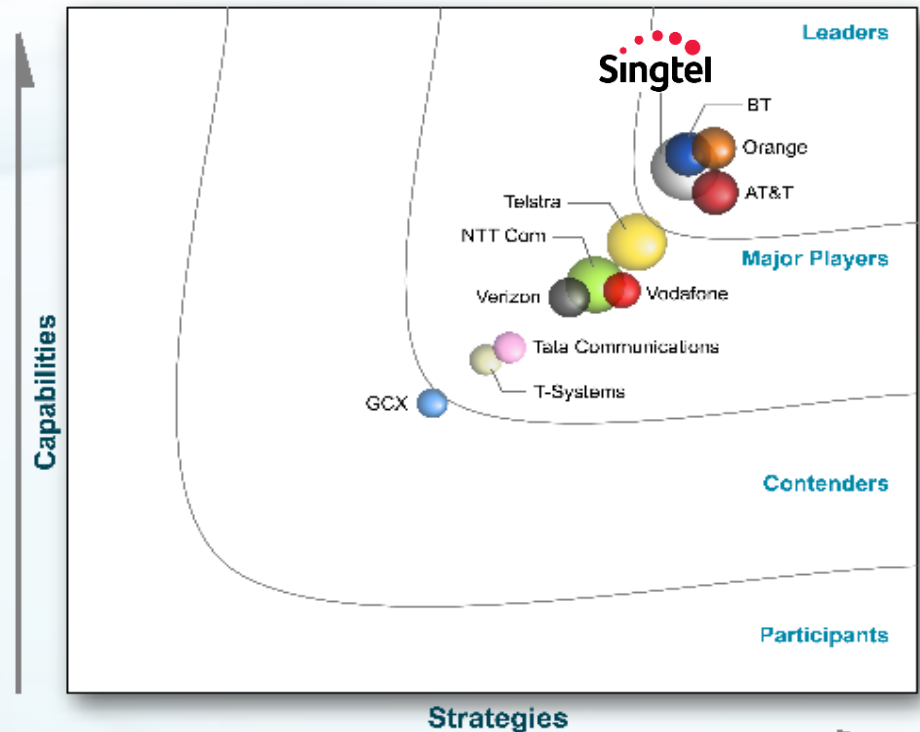
Source: IDC ITMarketScape: Asia/Pacific Next-Generation Telcos: Telecom Services 2016-2017 Vendor Assessment, by Nikhil Batra, Hugh Ujhazy, Sandra Ng and Shiv Putcha, February 2017, IDC #AP42353917

Extending our core carriage leadership

Most extensive sub sea cable operator in APAC

High concentration of MPLS POPs in key business cities

With **325 cities** and **370 POPs**

Leading SD WAN provider in APAC

Unifying disparate networks via **Singtel SD Wan**

Accelerate our growth engines

Cyber Security

To be a leading global managed security services provider

Enterprise Cloud

To be a leading trusted enterprise cloud service provider in Asia Pacific
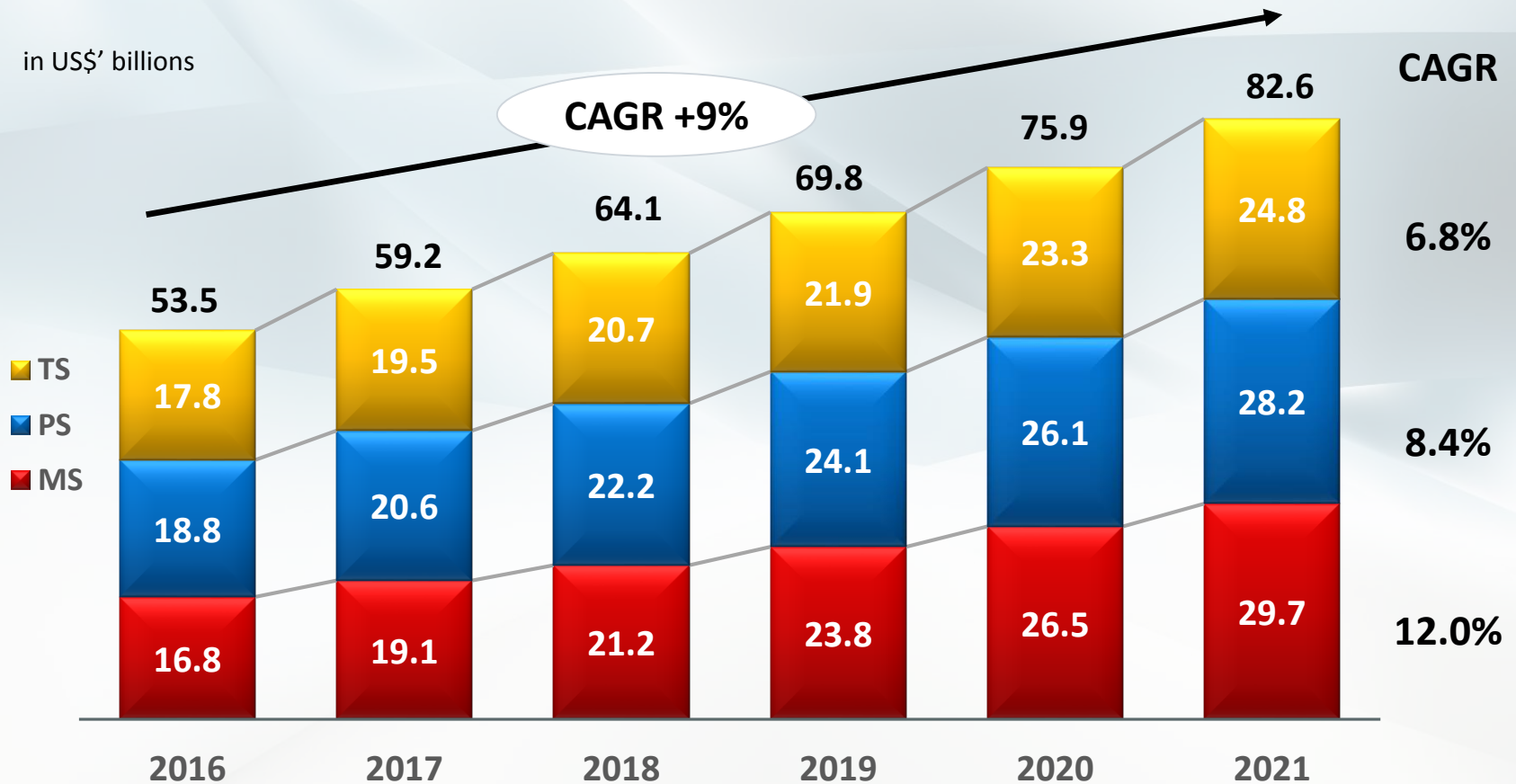
Smart & Safe Cities

To be the lead partner for Singapore's Smart Nation program and leverage it to address Smart Cities program in the region

Large and growing Cyber Security services market opportunity

in US$' billions

CAGR +9%

CAGR

Year	MS	PS	TS	Total
2016	16.8	18.8	17.8	53.5
2017	19.1	20.6	19.5	59.2
2018	21.2	22.2	20.7	64.1
2019	23.8	24.1	21.9	69.8
2020	26.5	26.1	23.3	75.9
2021	29.7	28.2	24.8	82.6

- TS — 6.8%
- PS — 8.4%
- MS — 12.0%

Managed Security Services market is competitive & fragmented

4 types of players compete in MSS

CSPs/ Carriers	AT&T, verizon, at&t, orange Business Services, BT, NTT, Deutsche Telekom, Singtel
System Integrators	WIPRO Applying Thought, CSS CORP Wired to SUPPORT, HCL, accenture
Product Vendors	IBM, hp, NETWORK BOX, Akamai, Symantec, FireEye, Check Point SOFTWARE TECHNOLOGIES LTD.
Pure-Play MSSPs	Trustwave Security begins with Trust, Symantec, DELL SecureWorks

Singtel's vision to be a leading global MSSP

Services

Global ASOC footprint and threat telemetry

Singtel SOC footprint
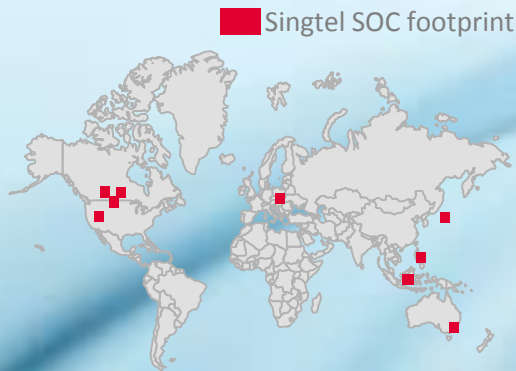
Industry leading and comprehensive Managed Security Services capabilities through world class partnerships

paloalto NETWORKS

Akamai

FireEye

Check Point SOFTWARE TECHNOLOGIES LTD.

Basic MSSP with managed SOC to provide L1/L2/L3 analyses for threat assessment

End-to-end Managed services across the protection stack and security operations

Developing our deep capabilities

R&D for Next Gen Security offerings

NEXTGEN

Cloud Security

Trustwave® TrustKeeper®

Spiderlabs capabilities

Trustwave® SpiderLabs®

Singtel

Expanding our Cyber Security capabilities globally

Globe ASOC launched in the Philippines

Partnership with TIS in Japan

Optus Advanced Security Operations Centre

Launch of NUS-Singtel Cyber Security R&D Laboratory in Singapore

Enterprise clients are increasingly looking at cloud options

Customer benefits

- **Cost Efficiency**
  - Reduce capital expenditure and labour costs
  - Pay-per-use billing model

- **Agility**
  - Greater convenience and control

- **Scalability**
  - Able to address dynamic requirements

- **Security & Reliability**
  - Peace of mind with enhanced security and service level guarantees

Different cloud deployment models

Deployment model	Location
Private cloud	Customer data center
Managed private cloud	Service provider data center
Virtual private cloud	Service provider data center
Public cloud	Service provider data center
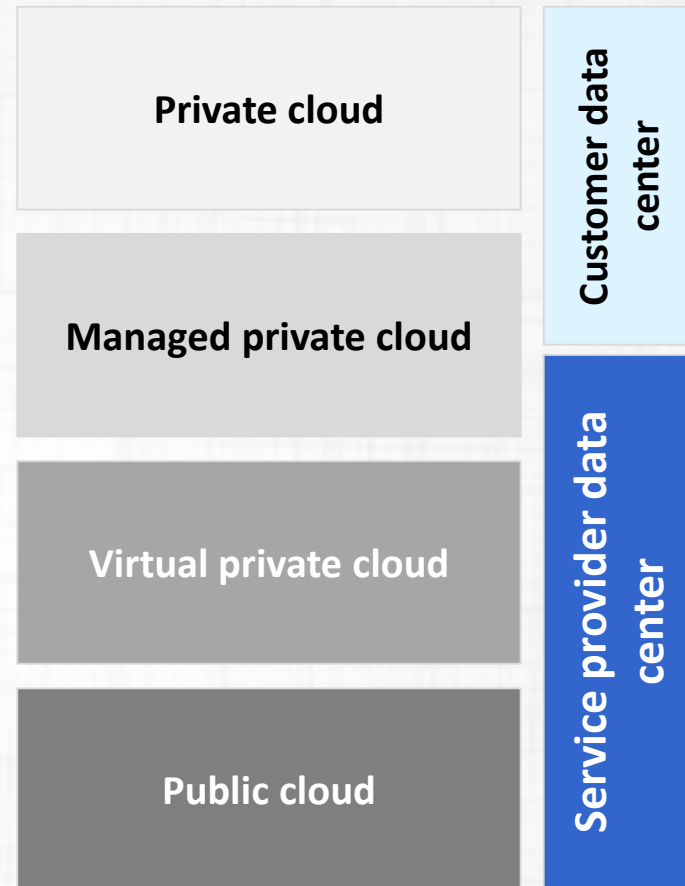
Singtel

Singtel aims to be a leading cloud service provider with differentiated cloud platforms & service offerings

A **trusted partner** to **meet every need** from **start to end** of customers' cloud journey…

Consult & Advise

- Understand the unique **business and IT needs** of customers' organization
- Offer **expert advice** on cloud adoption

Implement & Transform

Migration implementation services : cloud security services, app migration, software optimisation and hybrid infrastructure management

Manage & Operate

Cloud asset management platform - Liquid Sky, security monitoring, cloud infrastructure monitoring and management

Developing repeatable, differentiated and efficient Hybrid Cloud solutions

| Security | Interoperability | Manageability |

Gaining momentum for Cloud in our core markets

Extend leadership in the Government & Enterprise Cloud Business

Drive Cloud Automation & Orchestration

Help SMEs to seize digital opportunities

myBusiness
Apps, Insights and Opportunities for your business

I need email and office collaboration tools

I want to build a website

I need to set up my domain and email hosting service

Accelerate Customer Digital Transformation

Cloud Operating Model

Cloud Operating Model to standardize in the areas of Policies, Governance and Service operations

Cloud Lifecycle Services

Standardize the definition and delivery of Cloud Advisory, Transformation and Operations Services

Data Centre West

**Tier 3+ standard
BCA-IMDA Green Mark Platinum**

Singtel Cloud Connect

Enables a secured & low latency access to public cloud providers in the region

Building a Safe and Smart Nation

Government tenders worth an estimated S$2.4 billion to be given out

Today 25 May 17

Singapore

Government to call for S$2.4b of ICT tenders this year for Smart Nation projects

Channel NewsAsia
24 May 17

Up for grabs: S$2.4b of government tenders in Smart Nation drive

Infocom technology projects will see NLB, MOE, MPA investing in digital and data, cyber-security and Smart Nation applications

Thursday, May 25, 2017 - 05:50

by
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The Business Times
25 May 17

Singapore government to spend S$2.4bn on technology initiatives

ComputerWeekly.com 24 May 17

Funding will go towards building a national sensor platform, boosting the government's cyber security capabilities and driving the use of robots

We are creating a strong portfolio of Smart City capabilities

Smart City Applications	Suite of Smart City solutions	
Command & Control	NCS IntelliSURF™ improves situational awareness	**IntelliSURF™ - Intelligent Smart Nation Operating Platform**
Data Fusion & Analytics	Strong capabilities in an array of analytics	**Geo Analytics** · **Advanced Analytics** · **Brand Intelligence** · **Machine Learning/ AI**
IOT Application Platform	Integrate with various IOT management systems	**Sensor Management Platform** · **Video Management System** · **Sensor Application System**
Cloud	Supported by efficient Hybrid Cloud solutions	**Security** · **Interoperability** · **Manageability**
Networks	Network agnostic	WiFi · 4G · LoRa · Bluetooth
Devices with Embedded software	Sensors to monitor environment and operation	

Security

- Cloud security
- Data security
- Cyber Security
- NW Security
- OT Security
- Physical Security

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Leadership in building a Safe and Smart Nation

Iconic Smart Nation projects

Outdoor Surveillance

Automated Robotic Dispensing System

Next-Generation Electronic Road Pricing System

Smart Estate

Public Safety (Road Safety)

Continuous Care Management

MyTransport.SG

Smart Campus

Core capabilities

Sensors & IOT Management

Mobile, Wifi, Video, Social & Customer Data Analytics

Intelligent Command & Control

Cyber Security & OT Security

Building IP and deepening our capabilities

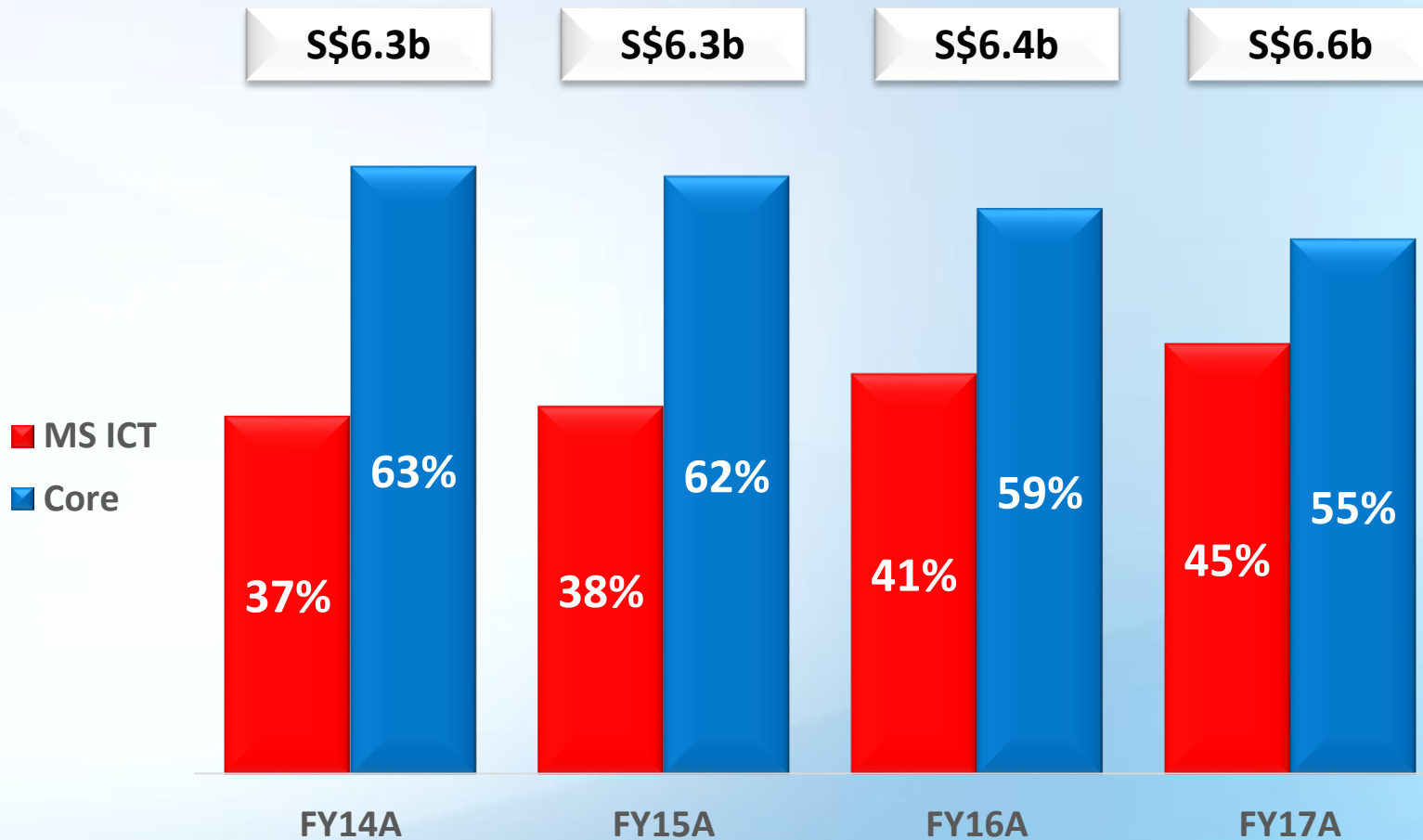| Analytics/ Artificial Intelligence	Intelligent Command & Control	Cyber-Physical Security	Internet of Things (IOT)	Agile Computing

Industry wins and recognition in 2016

Telco

Frost & Sullivan Asia Pacific ICT Awards 2016
- Telecom Group Of The Year
- Telco Cloud Service Provider of the Year

NetworkWorld Asia Readers' Choice Awards
Best in Managed Infrastructure Services (2012-2016)

World Communication Awards 2016
Best Enterprise Service - ConnectPlus SD-WAN

Asia Communications Awards 2016
- Best Customer Care : Business
- Satellite Operator of the Year

TMT Technology Awards 2016
Best Telecommunications Company – Asia Pacific

Singapore Media Awards 2016
Best Business to Business Campaign - 99% SME

ComputerWorld Singapore Customer Care Awards
- Telecommunications Services (2008-2016)
- VOIP/ IP Telephony Systems (2015-2016)
- System Integrator (2014-2016)

ComputerWorld Hong Kong Awards
Global WAN Connectivity Service Provider of the Year (2015 – 2016)

Global Carrier Awards 2016
Project of the Year – Subsea award (SEA-ME-WE 5)

VSAT Stellar Awards 2016
Service Provider of the Year

HWM+HardwareZone.com Tech Awards: Readers' Choice
- Best Telco (2010-2016)
- Best Fibre Broadband Service (2010-2016)

Telco Cloud Forum Awards 2017
Best Telco Cloud SDN/NFV Project

IDC Fixed Line Tracker 2H2015*
- Market Leadership for International IPVPN and E-LAN Service APEJ
- Market Leadership for International E-Line and Dedicated Leased Line Services APEJ

Cloud

Telco Cloud Forum Awards 2016
Telco Cloud of the Year

Cloud & DevOps World Awards 2016
Best Cloud Computing Adoption Project – G-Cloud

Cyber

Frost & Sullivan Singapore Excellence Awards 2016
Managed Security Service Provider of the Year

NetworkWorld Asia Information Management Awards
- Best in Security as a Service (2012-2016)
- Best in Disaster Recovery & Business Continuity (2014-2016)

SC Awards 2016
Best Managed Security Service (Trustwave)

Forrester Wave
Global Leader in MSSP (Trustwave)