ASM Pacific Technology

2019
Annual Results Announcement

26 February 2020

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Awards & Accolades 2019

Forbes Asia
2019
BEST OVER
A BILLION

2019
HKMA
Quality
Award
GRAND
AWARD

SINGAPORE
QUALITY
AWARD
2019 WINNER

Winner of the
productronica
innovation award 2019

VLSIresearch
RANKED 1st
SUPPLIERS
Customer Satisfaction
2019

HKC
香港企業公民

BEST HR AWARDS 2019

ASIA'S OUTSTANDING
COMPANIES
POLL
2019
ASIAMONEY

VLSIresearch
THE BEST
SUPPLIERS
Customer Satisfaction
2019

VLSIresearch
10 BEST
SUPPLIERS
Customer Satisfaction
2019

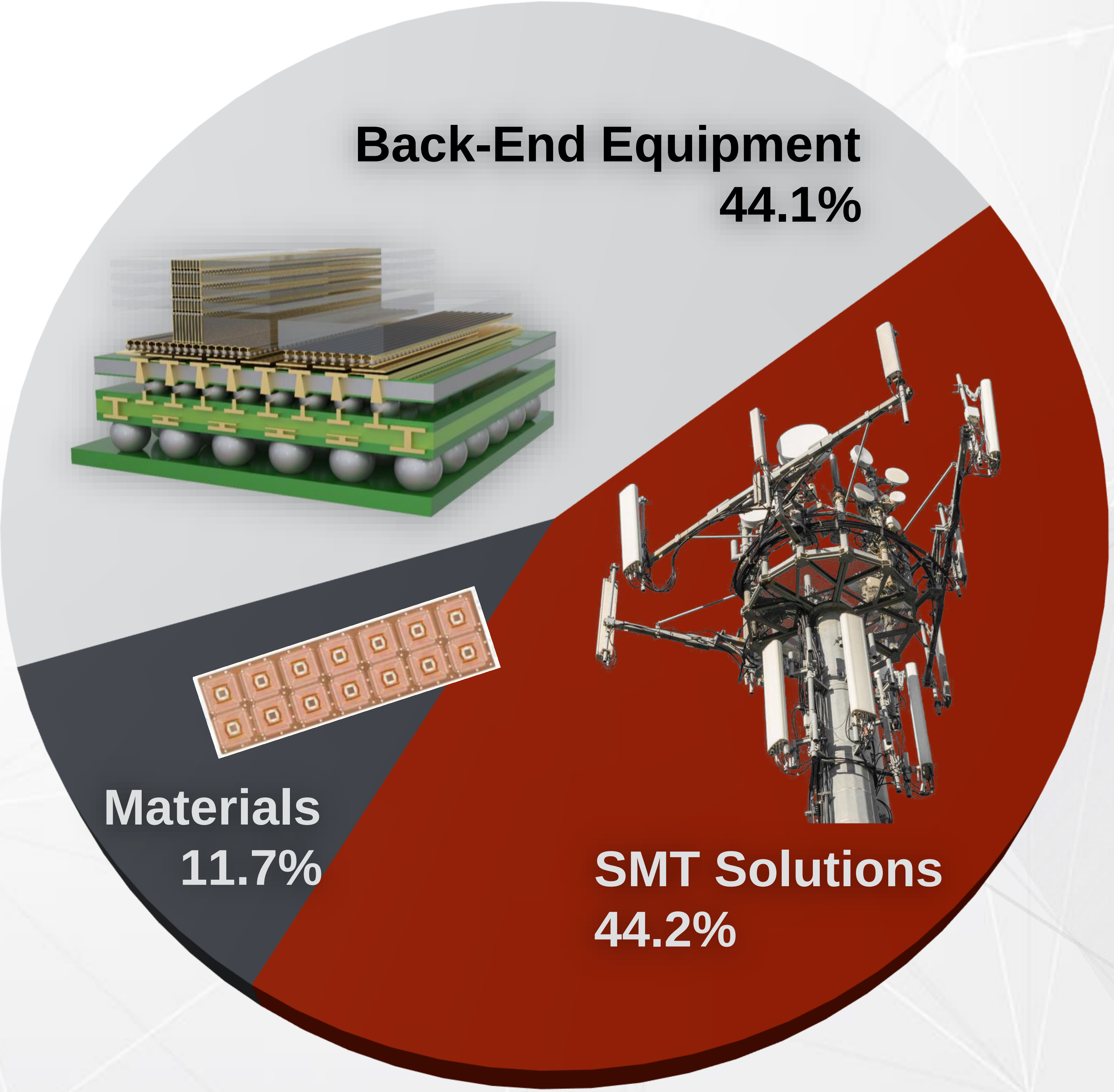
香港恒生大學
2019(第九屆) 君子企業計劃
IN PURSUIT OF THE JUNZI SPIRIT

The World's Technology & Market Leader

2019 Group Revenue:

USD 2,027m

(CAGR 2009 – 2019 12.9%)



ASMPT'S **Major Facilities** Around The World

>2,000
Global R&D staff

>1,400
Patents on leading edge technologies

10
R&D centres worldwide

12
Manufacturing facilities

Three Business Segments With

Leading Market Positions

BACK-END EQUIPMENT

#1 in Assembly & Packaging Equipment Market

Since 2002

2019 Worldwide
PAE Market Share:

~29%

SMT SOLUTIONS

#2 in SMT Equipment Market

2019 Worldwide
SMT Market Share:

~22%

MATERIALS

#3 in Leadframe Market

2018 Worldwide
Leadframe Market Share:

~9%

Sources: VLSI, SEMI and ASMPT Market Intelligence |

2019 Highlights

2019 Group Billings Highlights

Billings	FY2019		2H2019	
	USD	YoY	USD	HoH
Group	2,027m	-18.8%	1,099m	+18.3%
Back-end Equipment Segment	894m	-24.4%	491m	+22.0%
Materials Segment	236m	-17.8%	129m	+19.5%
SMT Solutions Segment	897m	-12.6%	479m	+14.5%

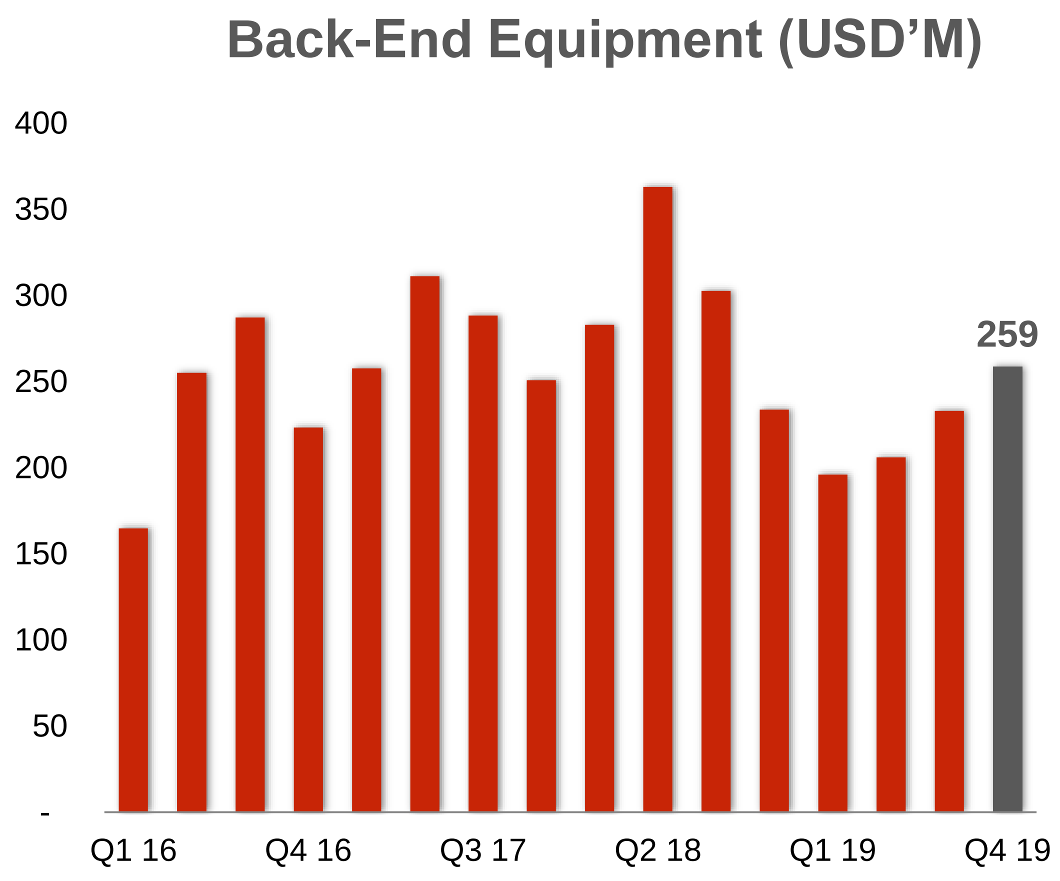
- **Group:** Market recovery started in 2H19; 18.3% HoH Billings growth
- **BE EQT:** Star performers AP + CIS + AOI
- **SMT:** Driven by 5G infrastructure + China SMT demands
- **Materials:** Four quarters of consecutive bookings growth – market clearly on track of recovery

Q4 Billings

QoQ Growth Across All Business Segments

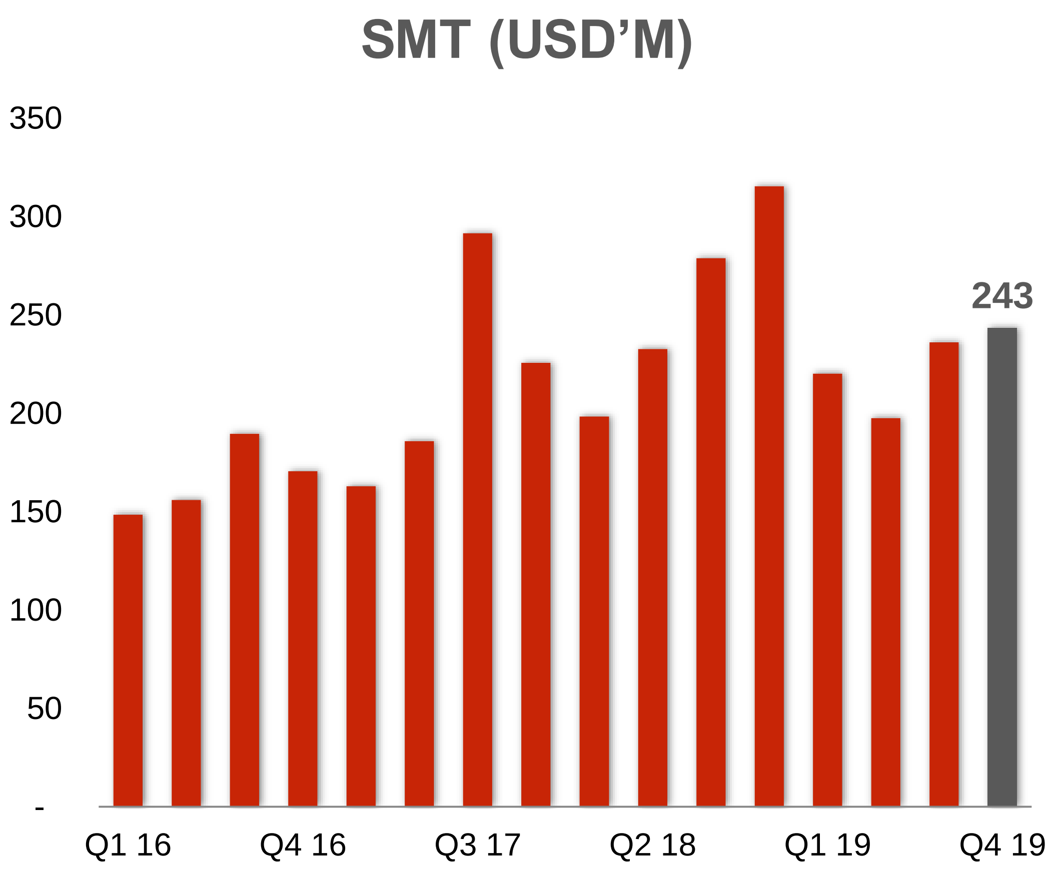
QoQ Growth:

+11.1%


Back-End Equipment (USD'M)

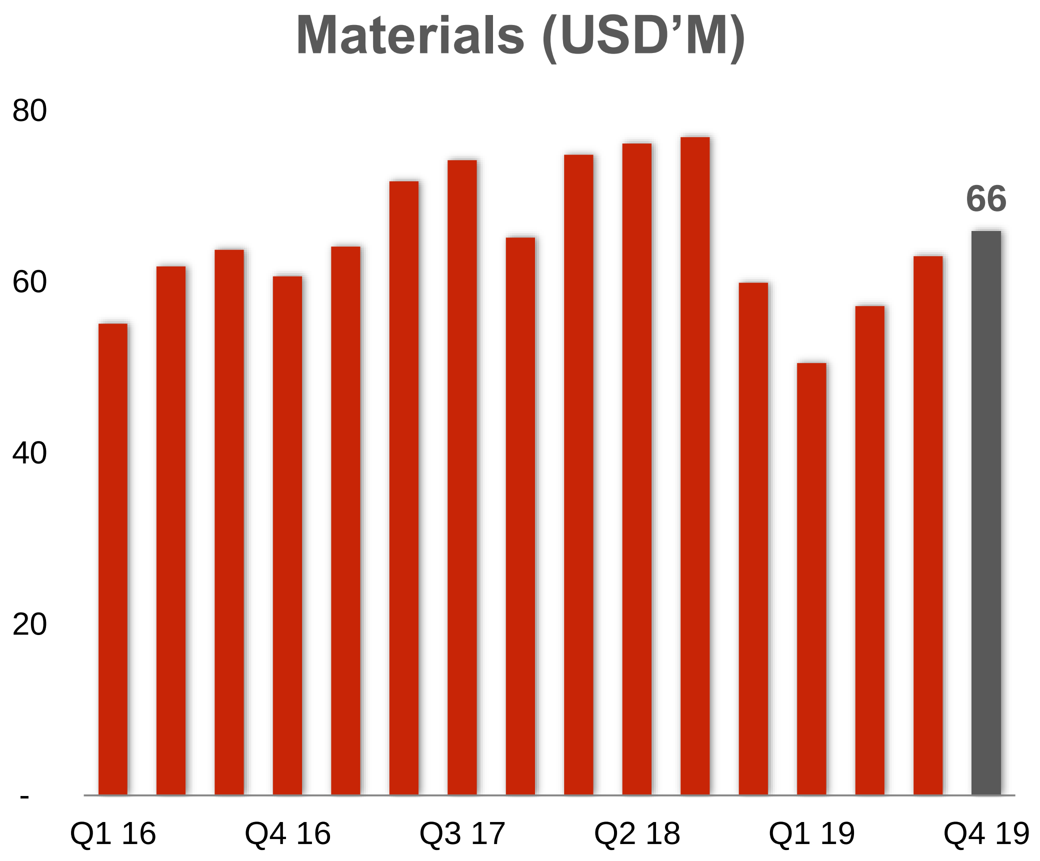
QoQ Growth:

+3.4%


SMT (USD'M)

QoQ Growth:

+5.0%


Materials (USD'M)

2019 Group Bookings

FY2019 Bookings	USD	YoY
Group	2,021m	**-21.5%**
Back-End Equipment Segment	911m	**-27.6%**
Materials Segment	238m	**-2.5%**
SMT Solutions Segment	872m	**-18.7%**

- **BE EQT: Bookings outperformed peers - led by CIS and AP**
- **SMT: Better than expected with 5G infrastructure offsetting weakness in Automotive**
- **Materials: ▲75.6% YoY for Q4 2019; ▲27.2% HoH for 2H 2019**

Q4 Bookings – Business Segments

QoQ Growth:

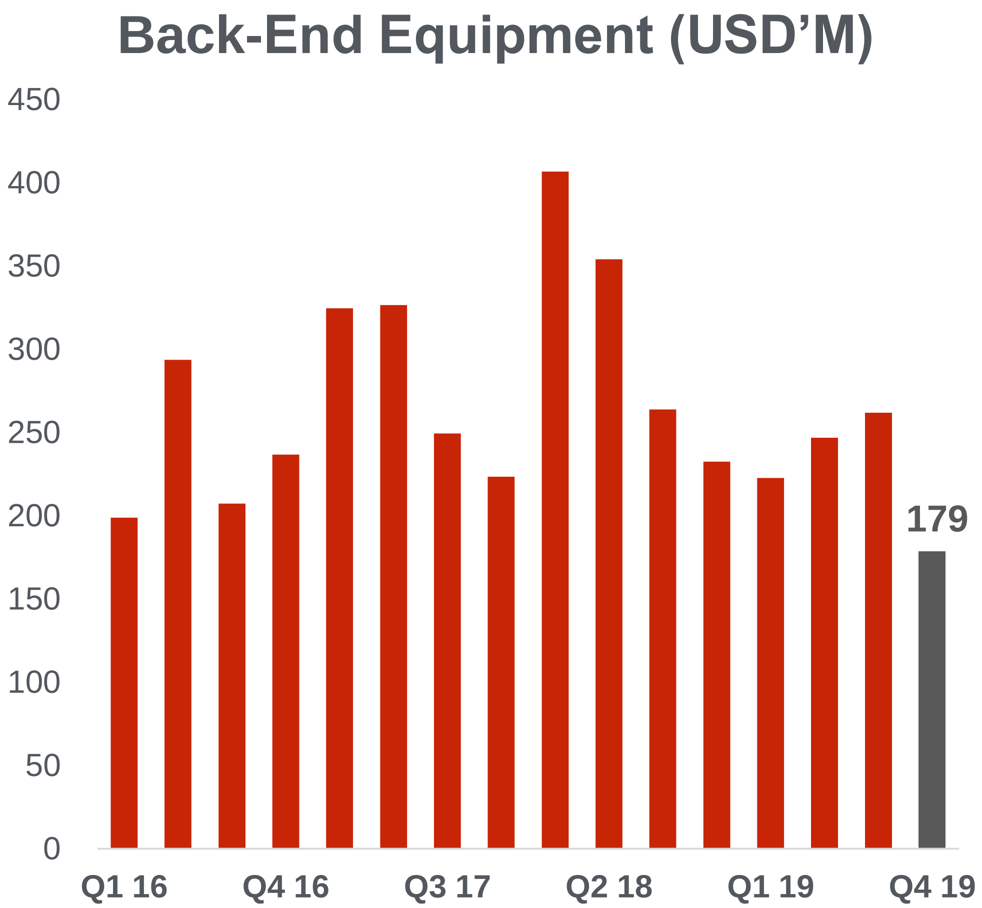
-31.9%

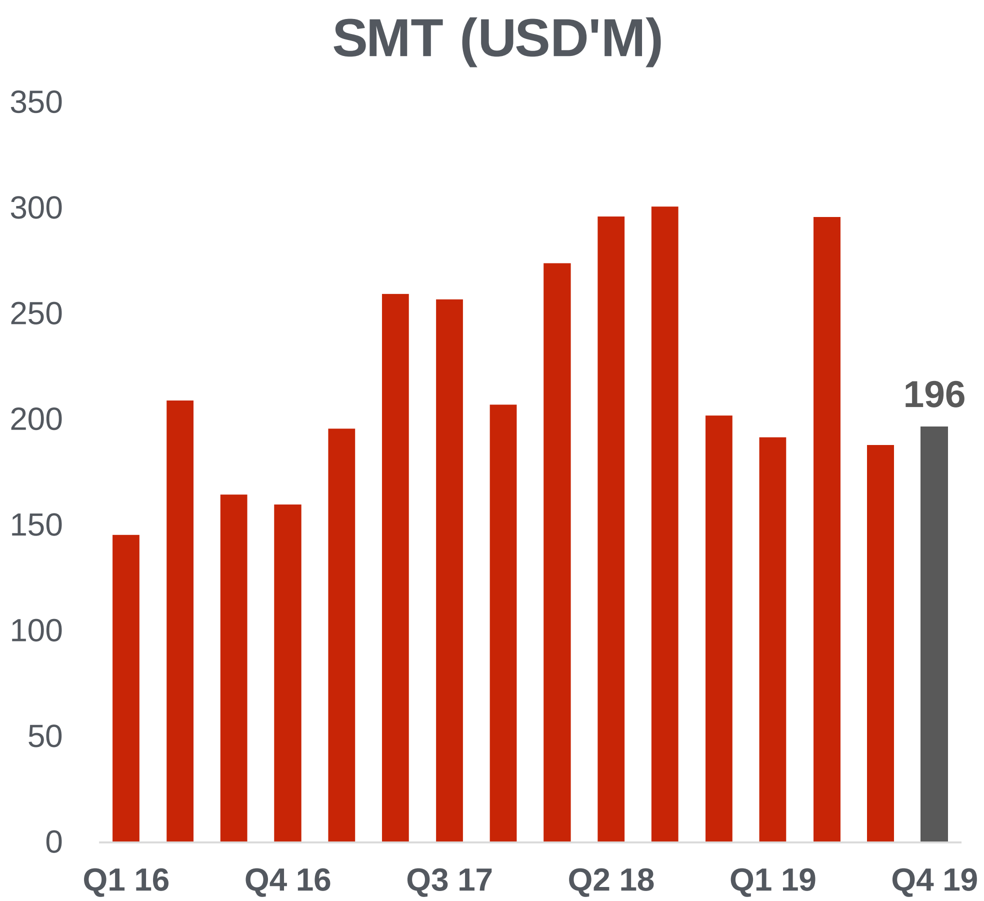
QoQ Growth:

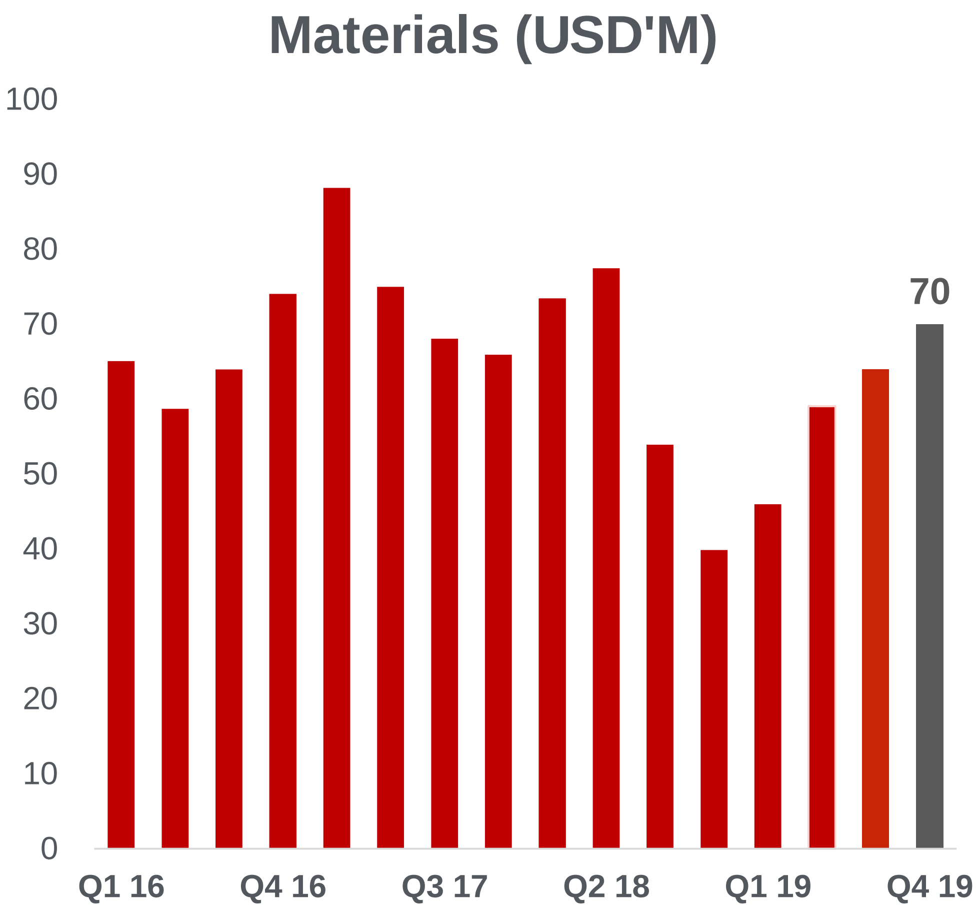
+4.6%

QoQ Growth:

+10.2%







2019 Group GM & Profitability

Gross Margin	FY2019	YoY	2H2019	HoH
Group	34.8%	-326 bps	34.8%	-5bps
Back-End Equipment Segment	41.1%	-472 bps	42.1%	+203bps
Materials Segment	10.1%	-135 bps	9.4%	-159bps
SMT Solutions Segment	34.9%	-154 bps	34.1%	-184bps
Group Billing (USD)	2,027m	-18.8%	1,099m	+18.3%
Operating Profit (HKD)	1,262m	-60.0%	769m	+56.2%
Net Profit (HKD)	622m	-71.9%	444m	+149.1%

- **Group:** Lower sales and lower production capacity utilization
- **BE EQT:** Lower sales and lower production capacity utilization
- **SMT:** Lower Automotive sales particularly in Europe as well as higher sales in China
- **Operating Expenses:** Decreased YoY - excluding recent acquisitions of AMICRA, NEXX and Critical Manufacturing
- **Headcount:** BE EQT reduced by around 3,000 since peak in 2018

Key Highlights:

QoQ Bookings Growth:

-31.9%

Back-End Equipment Segment

- Significantly outperformed market: Strong market position, higher AP, CIS and Power Management demand
- Advanced Packaging > 20% of FY19 BE EQT Revenue
  - Including CIS, collectively contributed >50% of FY19 BE EQT Revenue
- Acquired business NEXX contribution for FY19
  - First full year profitability since acquisition
  - Expanded ASMPT's customer base (i.e. High Density Substrate makers)
  - Significantly strengthened ASMPT's market position in Panel Level Packaging
- CIS momentum will continue due to higher resolution cameras, multi-camera, 3D sensing, ToF, wide FOV, and telescopic lens features
- AOI tools registered billings growth of 4 times YoY due to demand from CIS customers
- Starting to see healthy demand for Wire and Die Bonder picking up

Key Highlights:

SMT Segment

- SMT performance exceeded expectation, driven by:
  - 5G infrastructure and handsets demands
  - Data centre infrastructure in China

- Expanded market share in China smartphone supply chain

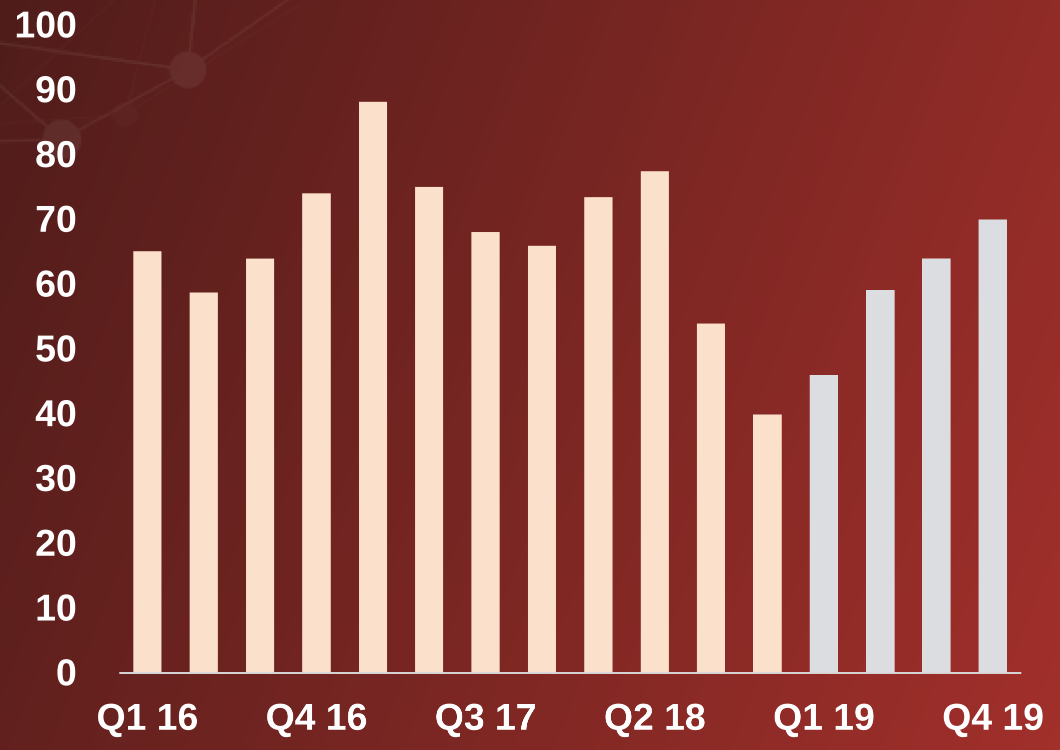
- Continued cost reduction efforts:
  - Increasing final assembly work in Malaysia
  - Satellite factory in Hungary to support Munich

Key Highlights:

Materials Segment

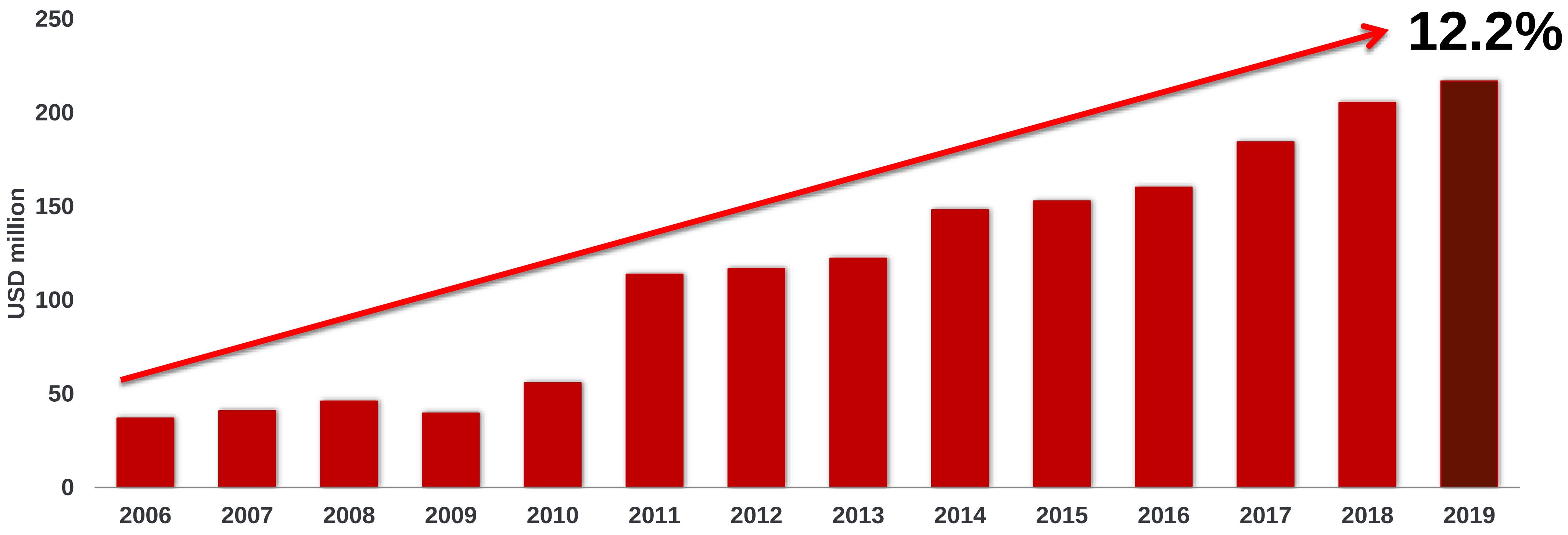
QoQ Bookings Growth:

+10.2%


Quarterly Materials Bookings (USD'M)

- Consecutive 4 quarters of Quarterly Bookings growth; a recovery in the semiconductor cycle
- GM and profitability expected to improve due to following restructuring initiatives:
  - Shifting of Leadframe operations from Singapore to Malaysia – completion expected Mid-2021
  - Discontinuation of MIS business

R&D Commitment Makes Us a Preferred Partner of Choice

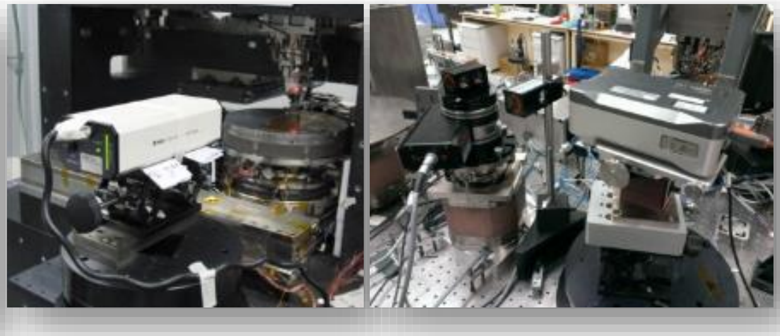


USD1,641 million invested in R&D

2019 R&D expenditure

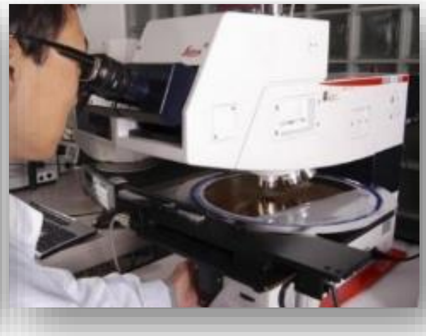
- US$ 218 million
- 12.2% of Equipment Sales

Package Interconnection



Optics precision engineering

Vibration control

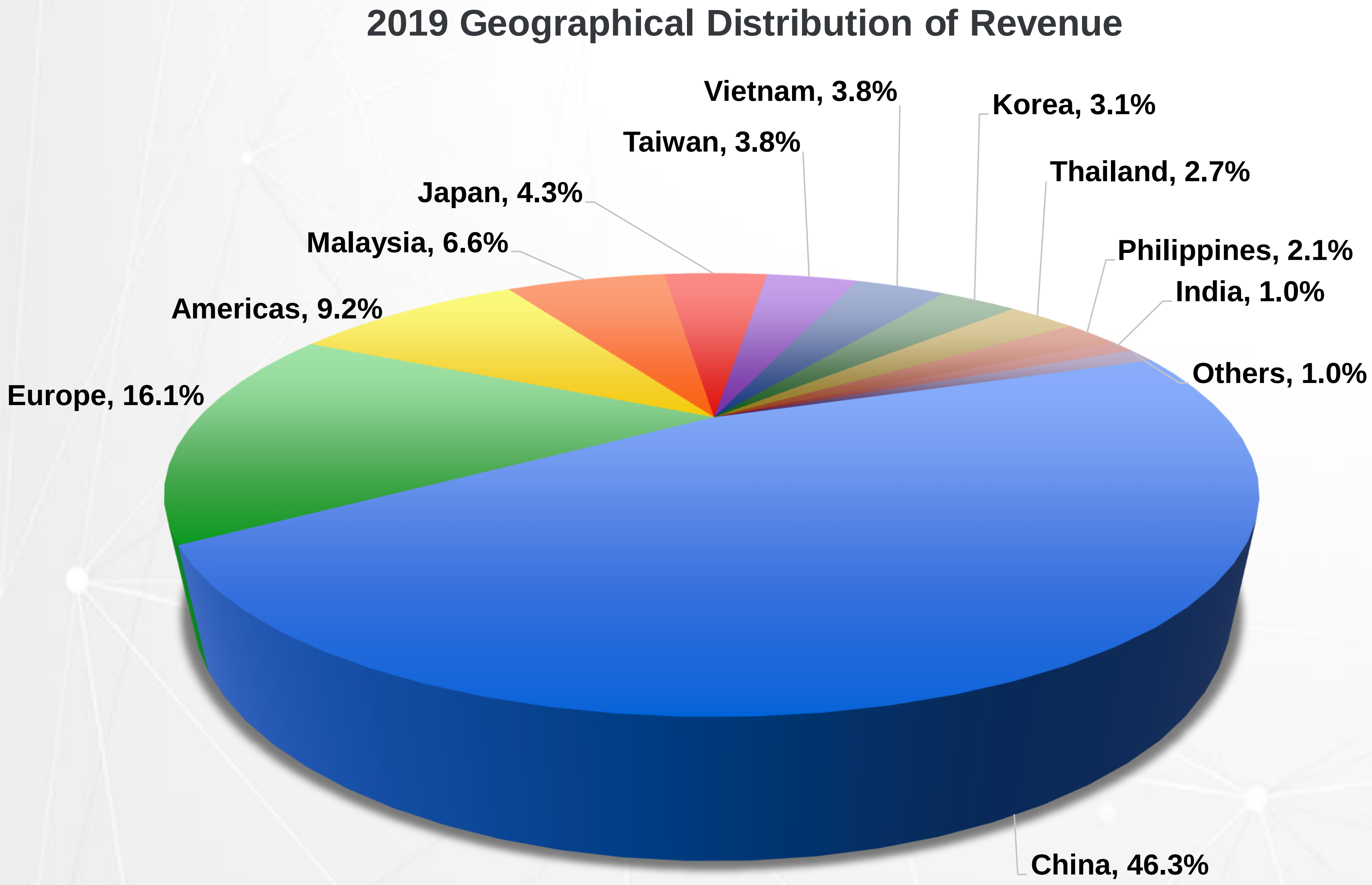


Laser dicing & grooving

SMT

2018 THOMSON REUTERS
TOP100
GLOBAL TECH LEADER

An Extensive Customer Base



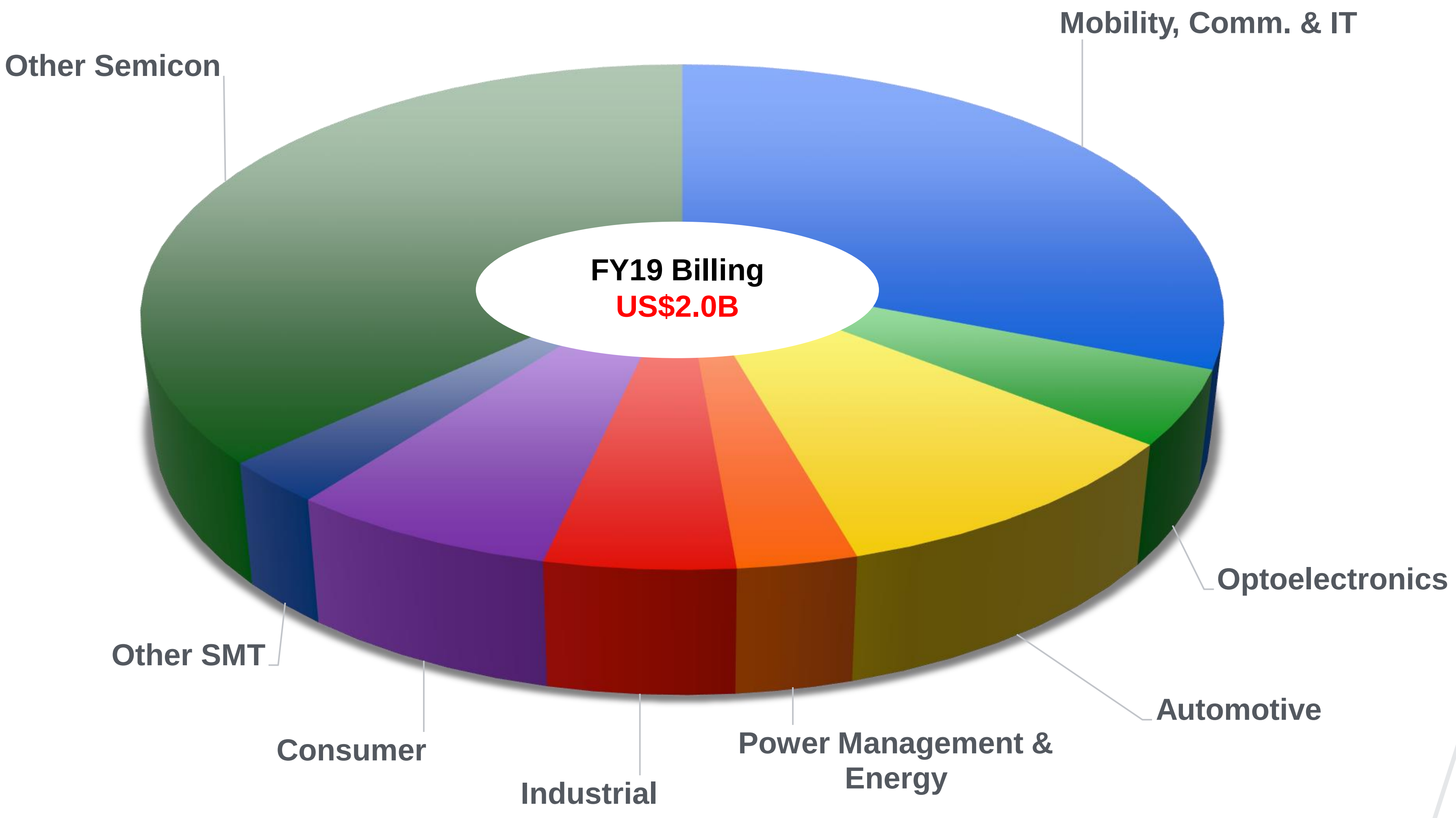
China Leads Market Recovery

- No single customer accounted for more than 10% of Group revenue
- Top 5 customers accounted for 15% of Group's 2019 revenue
- Top 20 customers include:
  - World's leading ICT Infrastructure & Smart Devices provider
  - Leading High-Density Substrate makers
  - World's leading IDMs
  - Tier 1 OSATs, major OSATs in China
  - Major camera module makers
  - Top EMS providers
  - Leading automotive component suppliers
- Among Top 20 customers of Group:
  - 5 from SMT Solutions segment
  - 4 from both Back-End Equipment & SMT Solutions segment

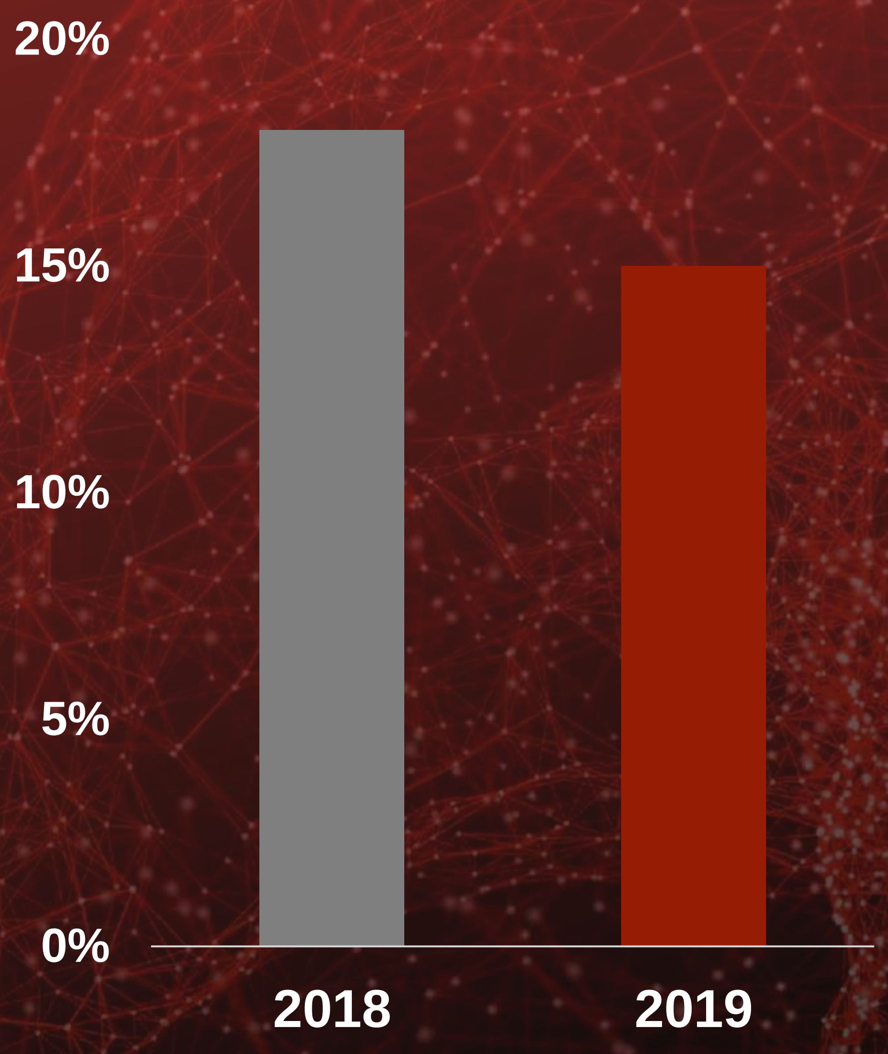
2018 THOMSON REUTERS TOP100 GLOBAL TECH LEADER

FY2019 Revenue Breakdown by Application Markets

FY 2019 Billing by Market Application

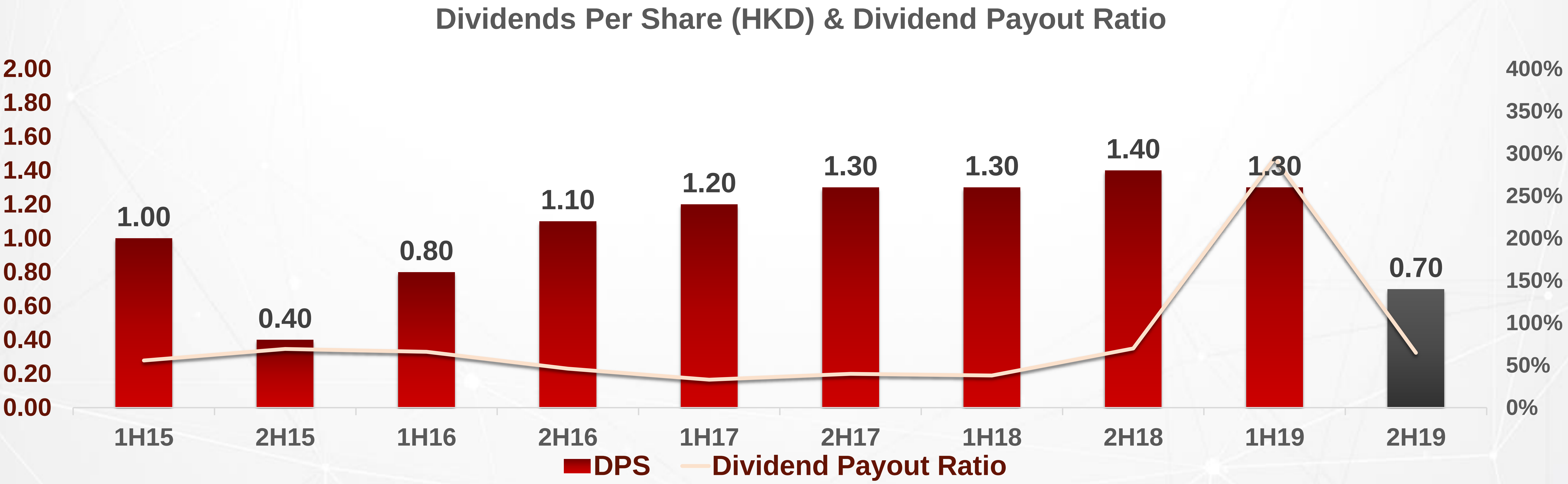


Top 5 Customers Revenue Contribution



More Resilient in a Downturn with Multiple Application Markets Strategy

Sustainable and Gradually Increasing Dividends



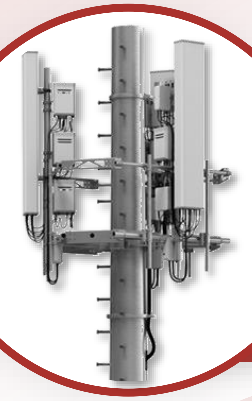
- Dividend of HKD 0.70 for 2H19, representing a full year payout ratio of 132% for 2019
- Adopting a prudent stance in light of COVID-19 outbreak situation
- Consider paying a higher dividend when economic condition improves
- Not to be perceived as a departure to the Dividend Policy

Data-Centric Era will **spur Semiconductor Demand**

	Collect	**Transmit**	**Store**	**Analyse**	**Visualise**
	Camera, 3D Sensing, Industry IoT, Sensor, LIDAR	*5G, WiFi, LiFi*	*Big Data Centre, Cloud Computing, Memory*	*AI, TPU, Data Analytics, HPC*	*AR, VR, Micro LED, Mini LED*
ASMPT's Enabling Solutions	• CMOS Imaging Sensors • Active Alignment • Precision Die Attach	• Silicon Photonics • RF Filters • Wire Bonding • SAW Filters • BAW Filters • SMT Solutions • PVD	• Silicon Photonics • TCB • Wire Bonding • PLFO • Laser Dicing	• WLFO • PLFO • Pick & Place • Laser Grooving • TCB • PVD/ECD • Precision Die Attach • Heterogeneous Integration	• High Precision Die Attach • Mini/Micro LED Displays

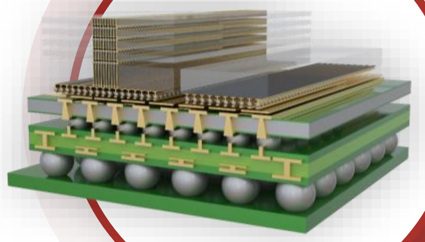
2019 & 2020 Growth Drivers For ASMPT

China Supply Chain Localization



5G

CMOS Imaging Sensor



Advanced Packaging

5G Will Transform the World Beyond Our Imagination

Infrastructure

2019-2025: 25-30mil
New 5G
Base Stations
Source: Topology Research Institute 2019

Big Data
Cloud Servers

"Power" Up
All Industries

Terminal

2023: 417mil
New 5G
Handsets
Source: IDC, 2019

Smart Consumer

50 MEMS & Sensors
per car
Automotive
Source: Bosch, 2019

5G

ASMPT Solutions for 5G:

Photonics Solutions

IC & Discrete Solutions

Image Sensor Solutions

Advanced Packaging

SMT Solutions

Power Solutions

Wafer Separation

Broad-Based Applications In CIS Market

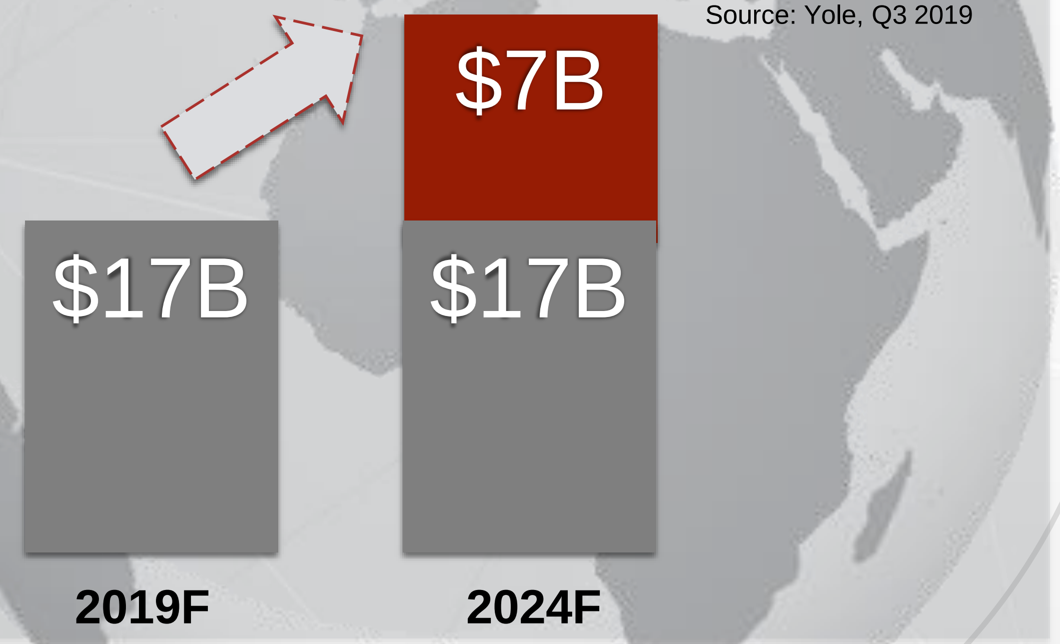
Worldwide CIS Unit Shipment CAGR (2020 – 2023)

Source: Yole, Sep 2019

13%

CIS Market to Reach US$24B by 2024

Source: Yole, Q3 2019



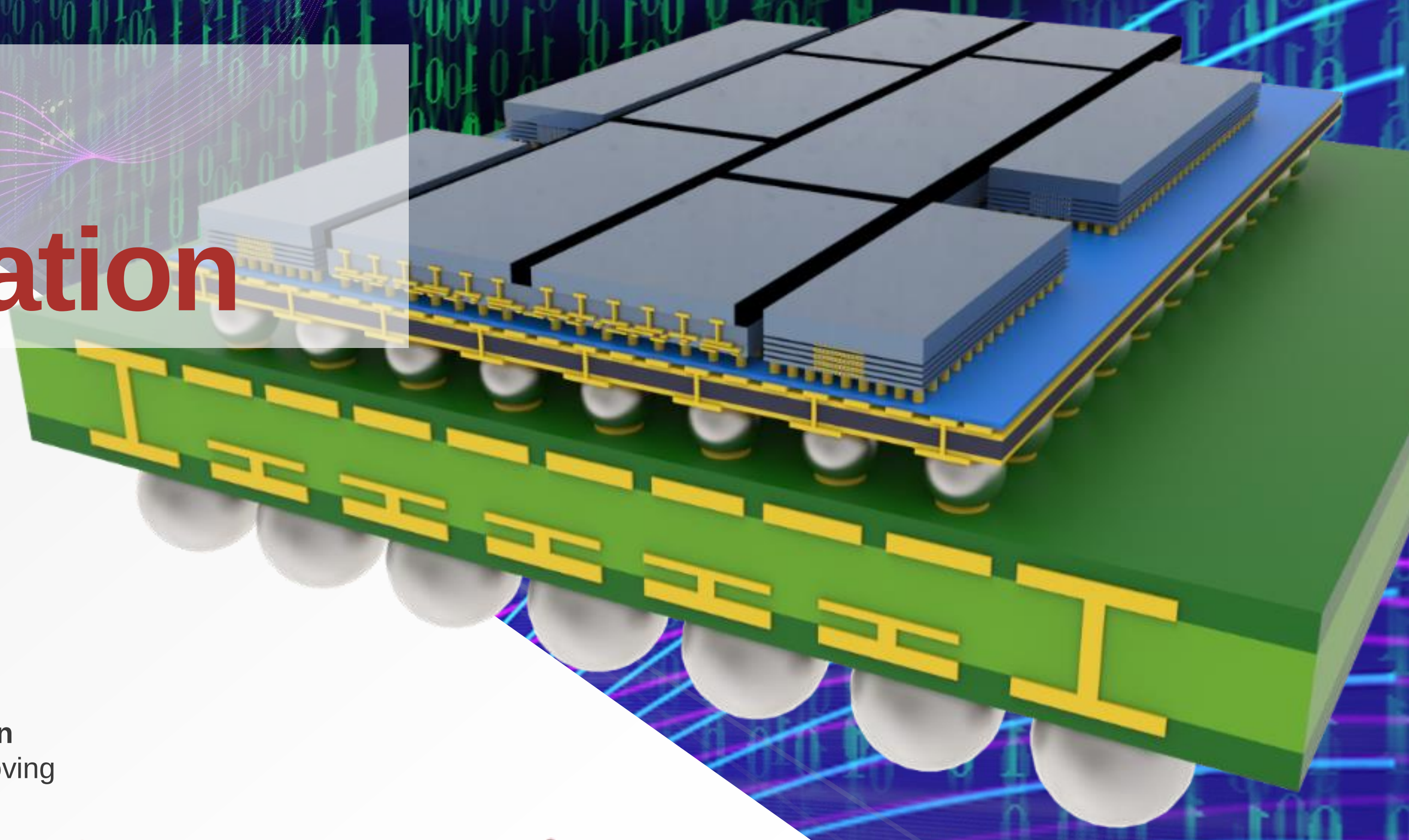

Smart Homes & Cities


Autonomous Vehicles


Security with Facial Recognition

Advanced CIS Comparable to DSLR

Advanced Packaging
Enables Heterogeneous Integration



SIPLACE CA
Die Attach & SMT
Wafer & Panel Recon
IPD tool

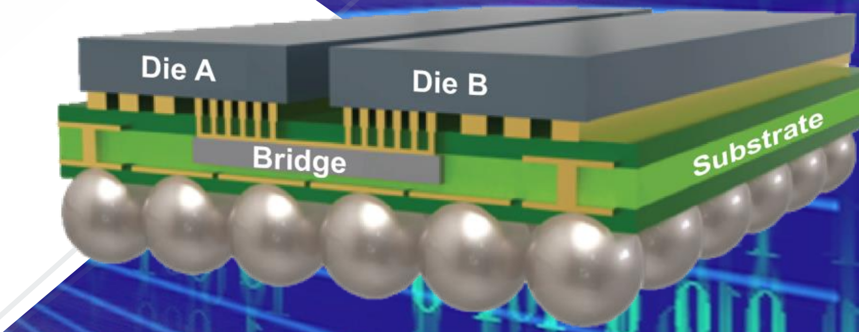
NEXX
PVD | ECD
Bumping, TSV & RDL

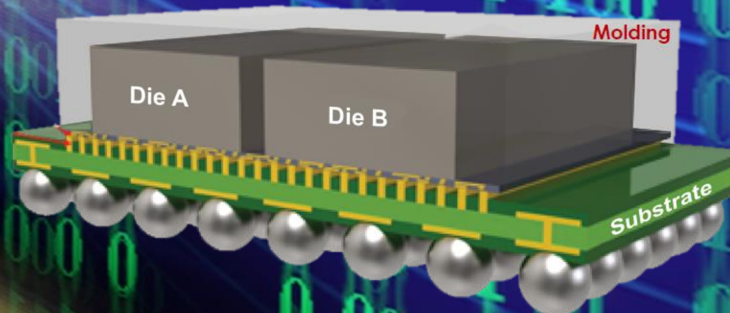
LASER 1205
Laser Separation
Wafer Dicing & Grooving

NUCLEUS XPM
HBM Bonder

NUCLEUS
Pick & Place
Wafer & Panel Level

ORCAS
Compression mold
Wafer & Panel Level





FIREBIRD
TCB, FLI

End Applications:

DATACENTERS
for HPC, Machine Learning

IoT ERA
Smart Wearables & Smart Machines (Factories)

AUTOMOTIVE
Sensors, Camera, Body Electronics, Safety Systems, Infotainment

GPU
for VR/AR & AI

Future Growth Drivers for OPTO Business

MiniLED

Medium to Large RGB / BLU Display

Market Size CAGR (2019 – 2025)

~ 35%

MicroLED

Small Gadget & Transparent Display

Market Size CAGR (2019 – 2025)

~ 131%

Fast Growing Applications

Source: LEDInside, Sep 2019

63% Automotive Display CAGR (2019 – 2025)

35% Digital Display CAGR (2019 – 2025)

31% Large Display CAGR (2019 – 2025)

118% Smartphone Display CAGR (2022 – 2025)

91% Wearable Display CAGR (2020 – 2025)

75% VR Display CAGR (2021 – 2025)

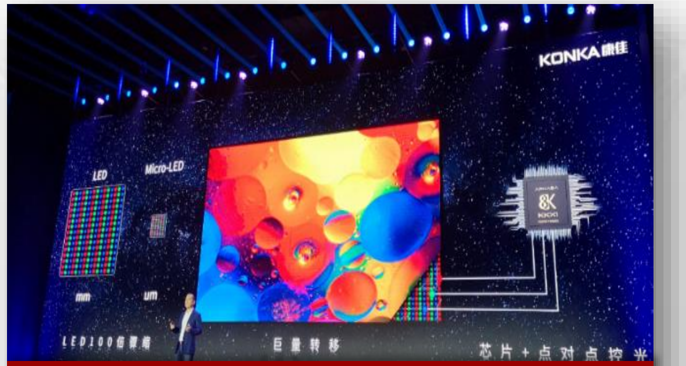
TCL
(TCL Conference - 2019)

LEYARD
(InfoComm - 2019)

RitDisplay + PlayNitride
(Touch Taiwan - 2019)

TIANMA
(SID - 2019)

CEDAR ELECTRONICS
(InfoComm - 2019)



KONKA
(KONKA Conference - 2019)

AUO
(Touch Taiwan - 2019)

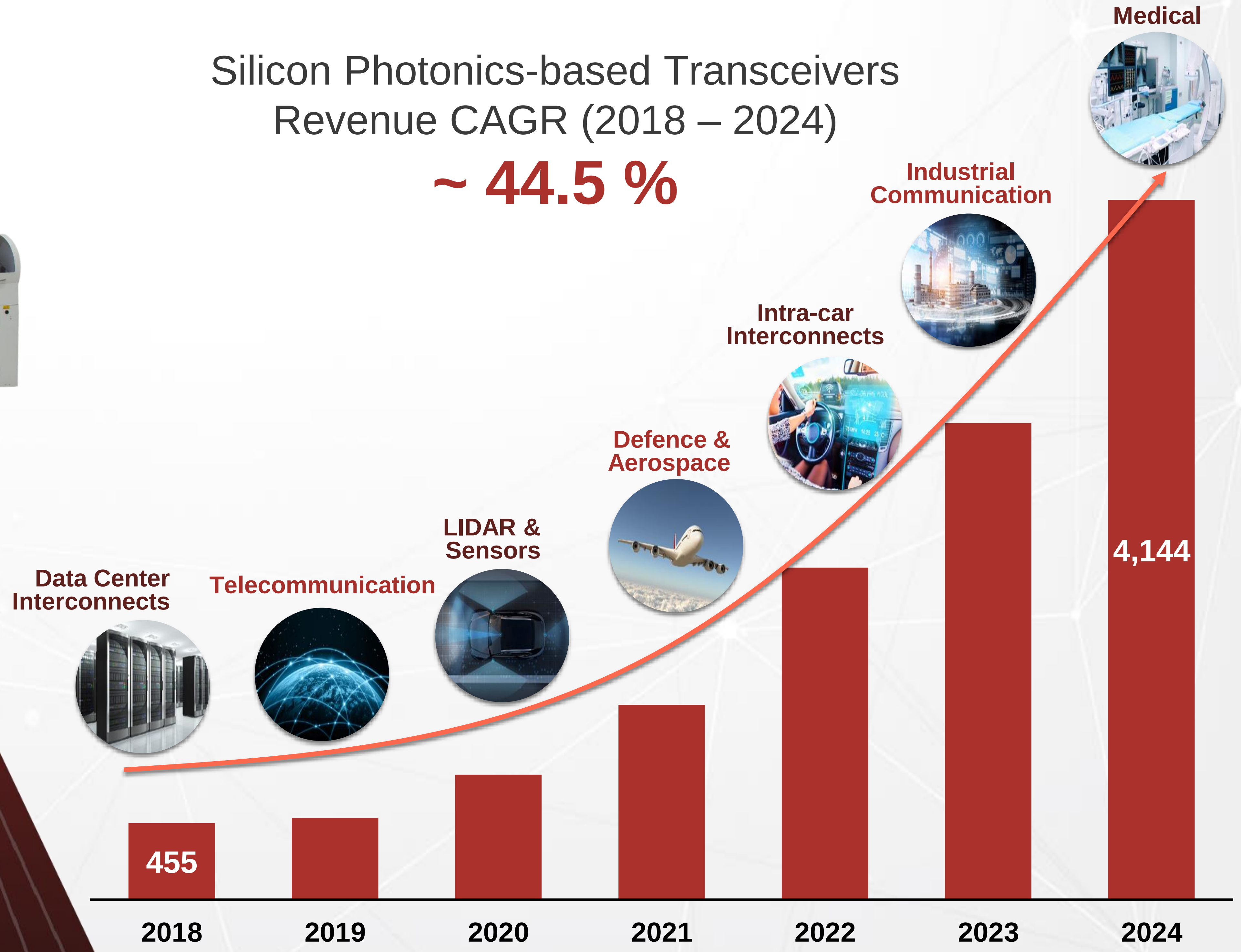
Samsung
(CES - 2019)

Source: Photos of displays from various conferences

Booming Applications in Photonics Market

Silicon Photonics-based Transceivers
Revenue CAGR (2018 – 2024)

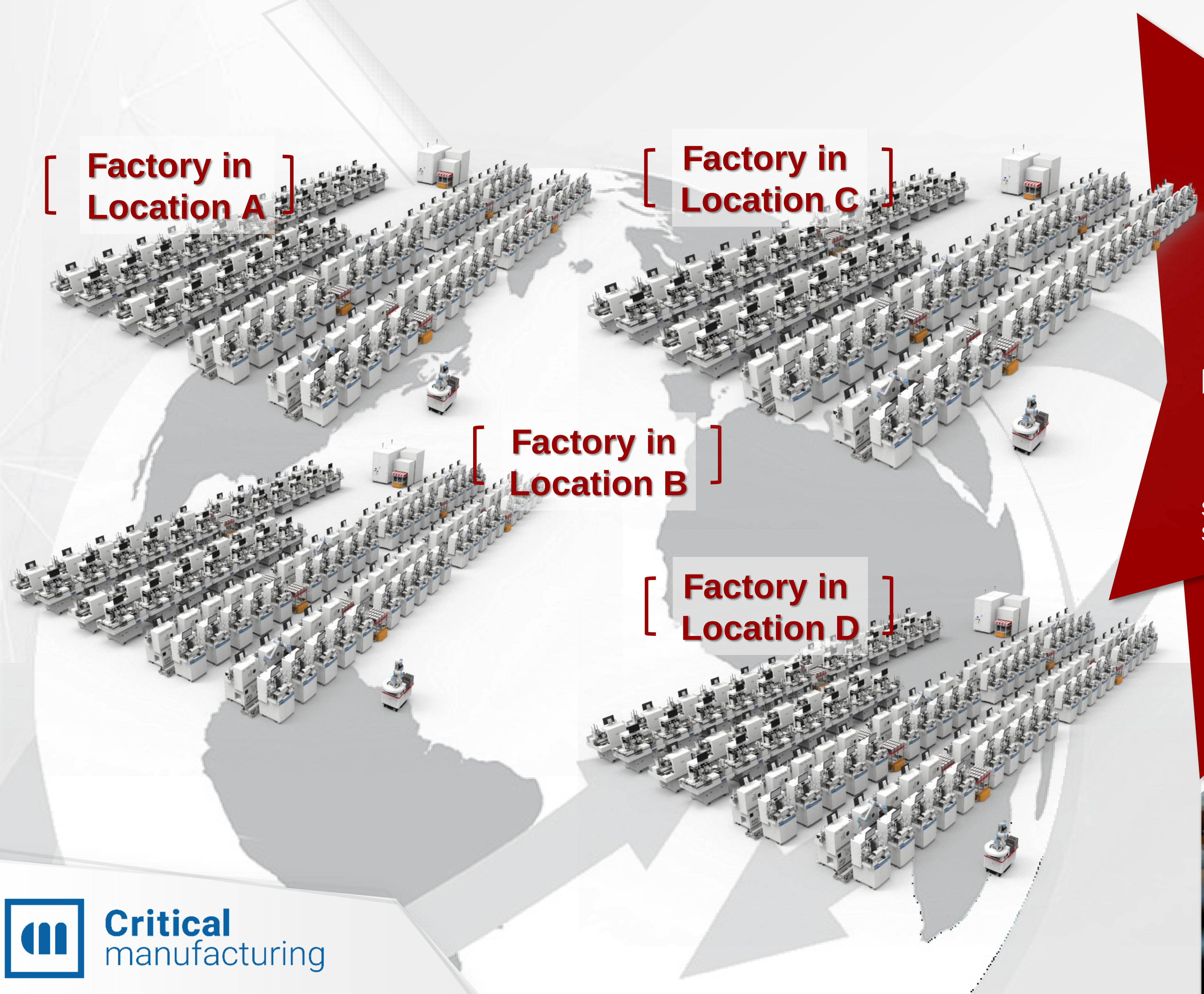
~ 44.5 %



Si Photonics Market Size (USD'M)

Source: Yole, Apr 2019

IIoT & Smart Manufacturing
Powered Up by 5G Network



[Factory in Location A]

[Factory in Location C]

[Factory in Location B]

[Factory in Location D]

Industrial IoT

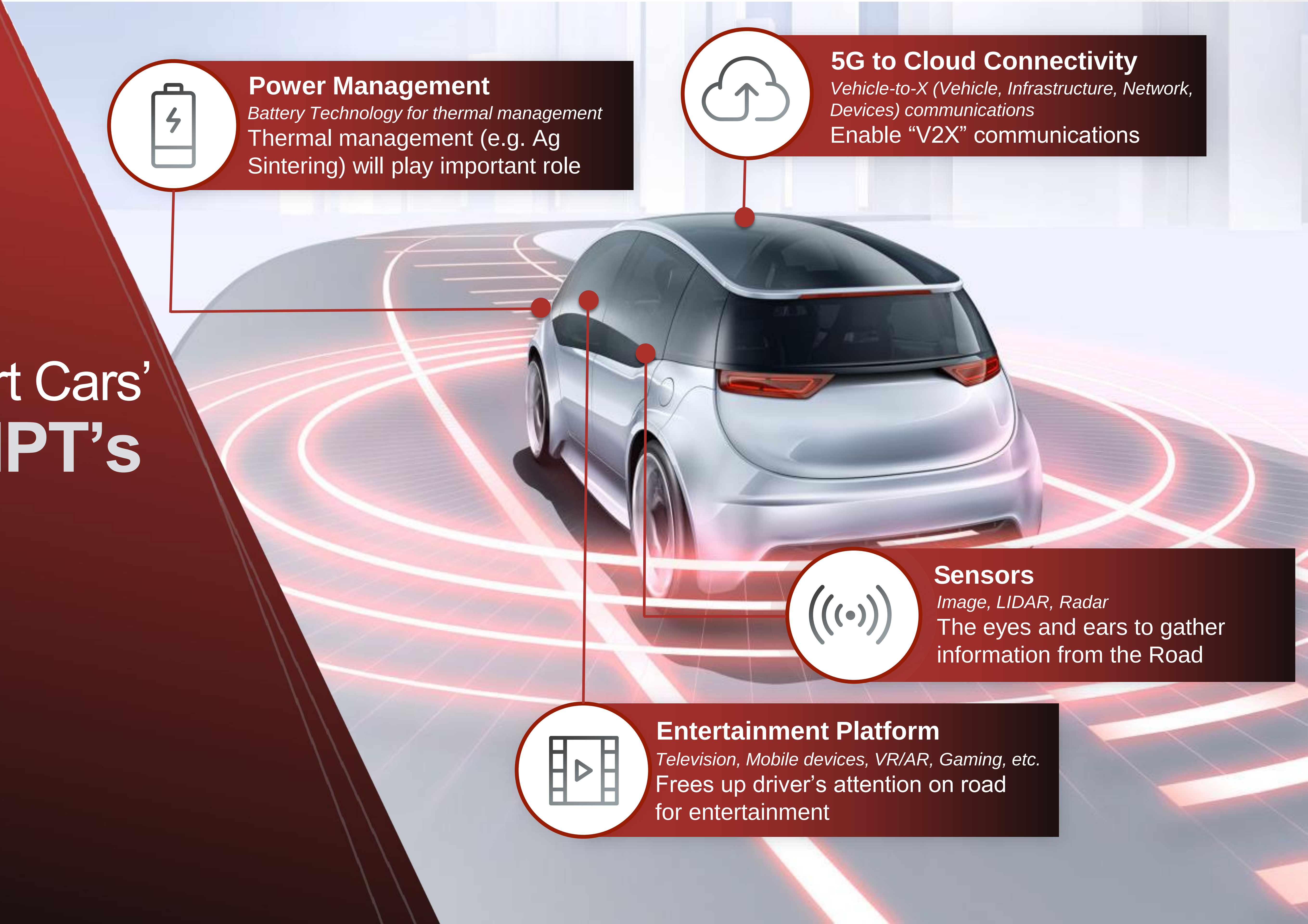
~ 24%

CAGR (2019 – 2023)

Source: Marketwatch, Sep 2019

Critical manufacturing

How will ‘Smart Cars’ **Drive ASMPT’s Growth?**



Power Management

Battery Technology for thermal management

Thermal management (e.g. Ag Sintering) will play important role

5G to Cloud Connectivity

Vehicle-to-X (Vehicle, Infrastructure, Network, Devices) communications

Enable “V2X” communications

Sensors

Image, LIDAR, Radar

The eyes and ears to gather information from the Road

Entertainment Platform

Television, Mobile devices, VR/AR, Gaming, etc.

Frees up driver’s attention on road for entertainment

Outlook

Outlook

Q1 Group Bookings

- Booking momentum prior to CNY very strong for all 3 segments with SMT Bookings achieving new record for the month of January
- Booking momentum tempered by COVID-19; still cautiously optimistic Q1 Group Bookings would achieve YoY growth
- Difficult to forecast as COVID-19 epidemic is evolving

Q1 Group Billings

- US$370m – US$450m

Q1 Profitability

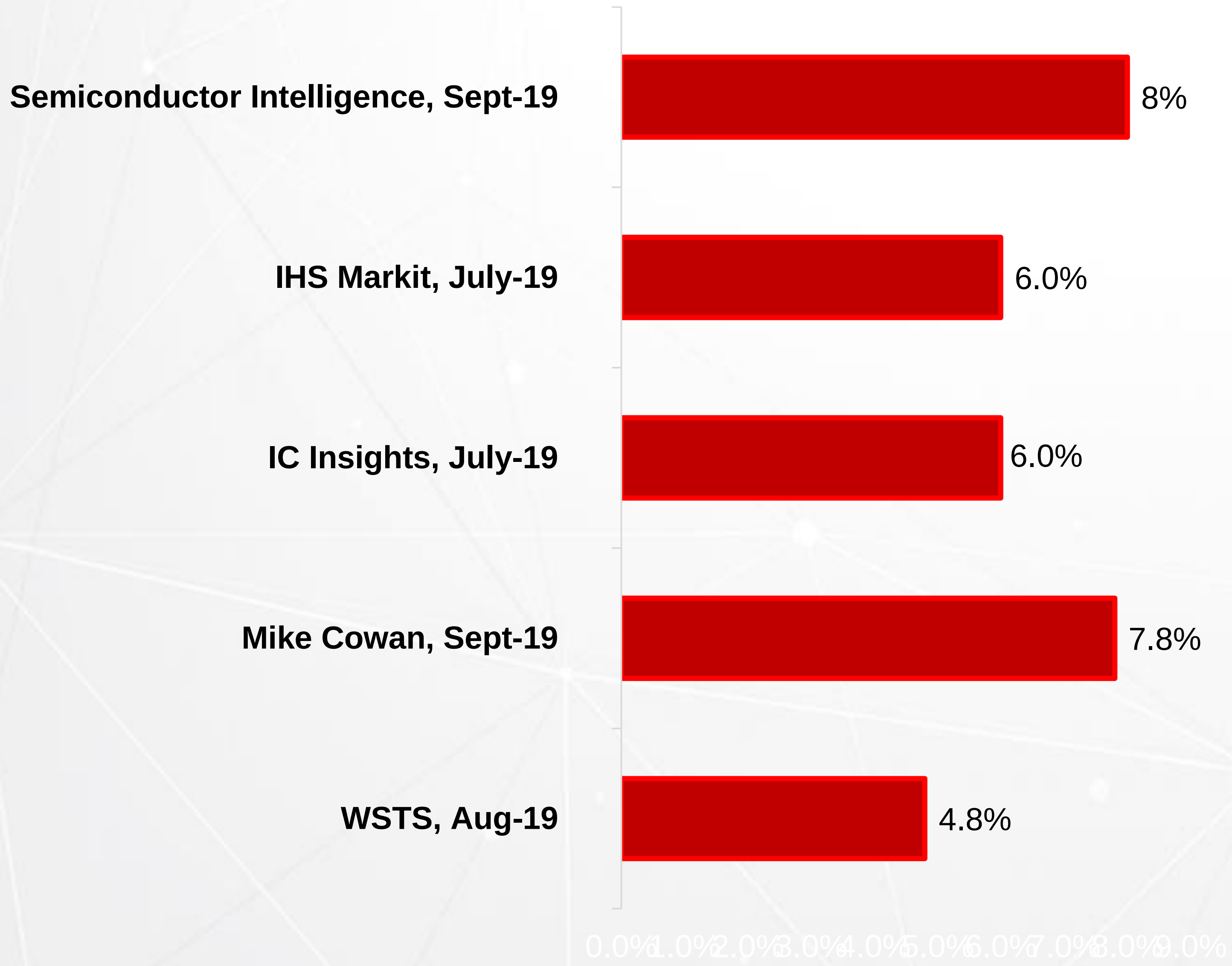
- More than likely record a loss for Q1 2020

A Myriad of Growth Drivers for 2020 & Beyond

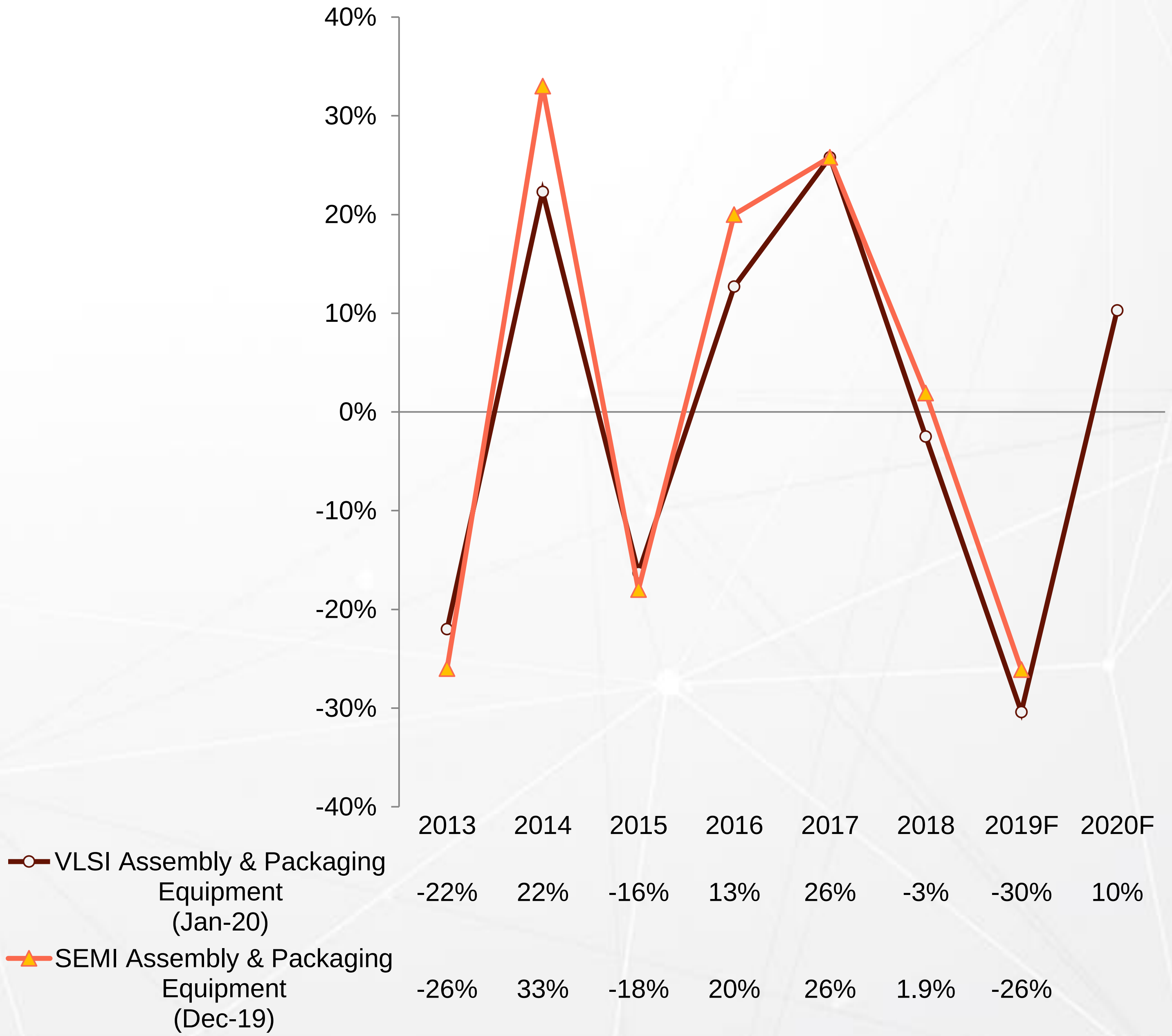
- 5G infrastructure and handsets: multi-year / multi-country driver
- Strong pick-up in demand from Chinese manufacturers to localize supply chains
- New market opportunities for Advanced Packaging, Silicon Photonics, Industrial IOT, mini and micro LED solutions
- ASMPT is well positioned to take advantage of this unique window of opportunity

Industry Growth Forecast (2020)

Semiconductor Industry



Forecast Global Assembly & Packaging Equipment Market



	2013	2014	2015	2016	2017	2018	2019F	2020F
VLSI Assembly & Packaging Equipment (Jan-20)	-22%	22%	-16%	13%	26%	-3%	-30%	10%
SEMI Assembly & Packaging Equipment (Dec-19)	-26%	33%	-18%	20%	26%	1.9%	-26%	

2018 THOMSON REUTERS TOP100 GLOBAL TECH LEADER

Recent Awards & Recognition

Latest

VLSIresearch 10 BEST SUPPLIERS Customer Satisfaction 2019

10 BEST Segment	Rank	10 BEST CHIP MAKING EQUIPMENT SUPPLIERS OF 2019	Rating	Stars
LARGE	1	TERADYNE	9.44	★★★★★
	2	ADVANTEST	9.23	★★★★★
	3	ASML	9.18	★★★★★
	4	ASM Pacific Technology	8.79	★★★★½
	5	KLA Keep Looking Ahead	8.03	★★★★
	6	TEL TOKYO ELECTRON	7.83	★★★½
	7	KE KOKUSAI ELECTRIC	7.75	★★★½
	8	Lam RESEARCH	7.61	★★★½
	9	APPLIED MATERIALS	7.36	★★★
	10	Hitachi High-Tech	7.29	★★★
FOCUSED	1	Plasma-Therm	9.39	★★★★★
	2	AMEC	9.01	★★★★★
	3	FORMFACTOR™	8.89	★★★★½
	4	EVG	8.51	★★★★½
	5	SPTS	7.46	★★★
	6	Cohu	7.09	★★★

Source: VLSIresearch css 10BEST v19.05

VLSIresearch THE BEST SUPPLIERS Customer Satisfaction 2019

WHAT THE BEST SUPPLIERS OF 2019 ARE BEST AT

ADVANTEST	Partnering Technical Leadership	AMEC	Partnering Commitment
APPLIED MATERIALS	Technical Leadership Software	ASM Pacific Technology	Partnering Trust in Supplier
ASML	Technical Leadership Partnering	Cohu	Trust in Supplier Partnering
EVG	Partnering Recommend Supplier	FORMFACTOR™	Field Engineering Support Technical Leadership
Hitachi High-Tech	Uptime Product Performance	JEM JAPAN ELECTRONIC MATERIALS	Product Performance Support After Sales
KLA Keep Looking Ahead	Technical Leadership Application Support	KE KOKUSAI ELECTRIC	Partnering Support After Sales
Lam RESEARCH	Field Engineering Support Recommend Supplier	Nidec SV TCL	Commitment Support After Sales
Nikon	Partnering Trust in Supplier	Plasma-Therm	Recommend Supplier Support After Sales
SPTS	Recommend Supplier Field Engineering Support	TECHNOPROBE Wafer Probing Technologies	Commitment Partnering and Recommend Supplier
TERADYNE	Recommend Supplier Technical Leadership	TEL TOKYO ELECTRON	Technical Leadership Uptime

Source: VLSIresearch Doc: css_THEBEST_v19.05

2018 THOMSON REUTERS TOP100 GLOBAL TECH LEADER

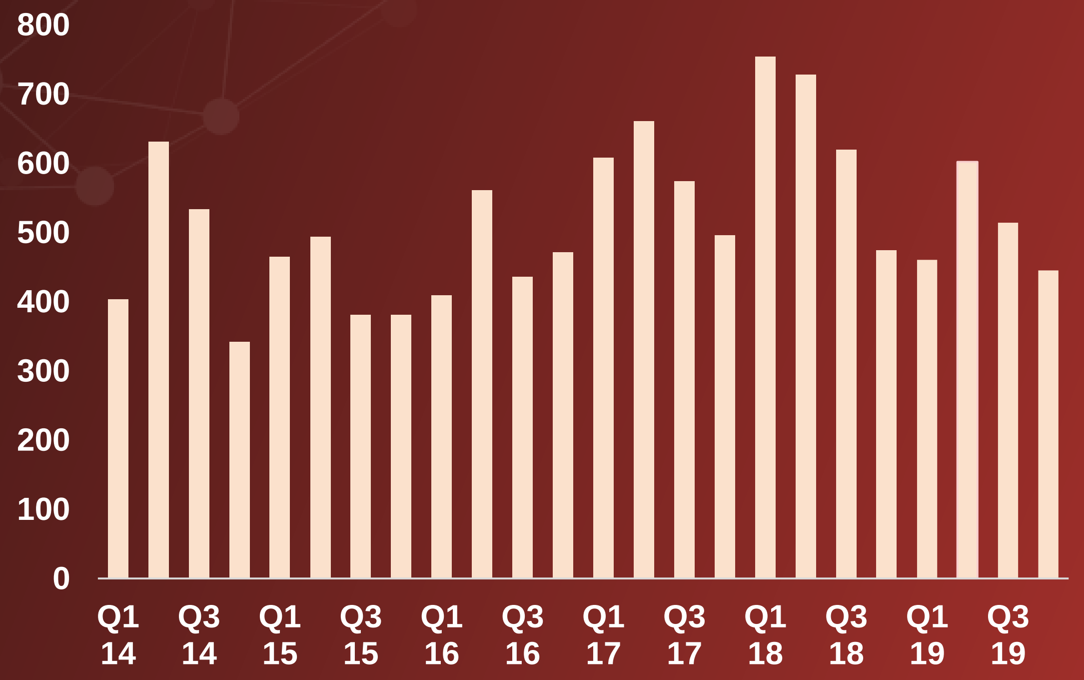
2019
Financial Highlights

ASM Pacific Technology

2018 THOMSON REUTERS TOP 100 GLOBAL TECH LEADER

2019 Group Bookings

QoQ Growth:
-13.3%

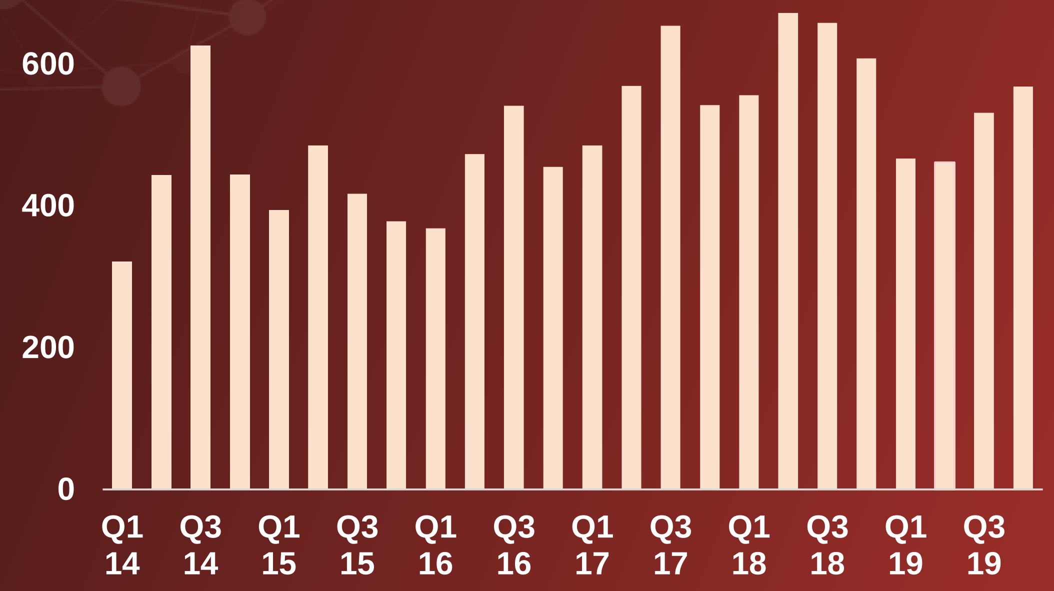


Quarterly Group Bookings (USD‘M)

	Q4 2019 Bookings			*2H 2019 Bookings*		
	USD	**YoY**	**QoQ**	**USD**	**YoY**	**HoH**
Group	445m	-6.1%	-13.3%	959m	-12.2%	-9.7%
Back-End EQT Segment	179m	-23.2%	-31.9%	441m	-11.2%	-6.1%
Materials Segment	70m	+75.6%	+10.2%	134m	+42.4%	+27.2%
SMT Solutions Segment	196m	-2.7%	+4.6%	384m	-23.5%	-21.1%

2019 Group Billings

QoQ Growth:
+7.0%



Quarterly Group Billings (USD'M)

	Q4 2019 Billings			*2H 2019 Billings*		
	USD	**YoY**	**QoQ**	**USD**	**YoY**	**HoH**
Group	568m	-6.7%	+7.0%	1,099m	-13.3%	+18.3%
Back-End EQT Segment	259m	+10.8%	+11.1%	491m	-8.4%	+22.0%
Materials Segment	66m	+10.2%	+5.0%	129m	-5.9%	+19.5%
SMT Solutions Segment	243m	-22.8%	+3.4%	479m	-19.5%	+14.5%

2019 Group Financial Highlights

	FY 2019	FY 2019	2H 2019		Q4 2019	
		YoY	HoH	YoY	QoQ	YoY
Bookings (USD)	2,021m	-21.5%	-9.7%	-12.2%	-13.3%	-6.1%
Revenue (USD)	2,027m	-18.8%	+18.3%	-13.3%	+7.0%	-6.7%
Gross Margin	34.8%	-326 bps	-5 bps	-73 bps	+3 bps	+181 bps
EBIT (HKD)	1,191m	-62.2%	+39.9%	-43.8%	-20.6%	-24.8%
Net Profit (HKD)	622m	-71.9%	+149.1%	-45.5%	-0.2%	+4.5%
Net Profit Margin	3.9%	-739 bps	+271 bps	-304 bps	-36 bps	+54 bps

2019 Segment Results – Back-End EQT

	FY 2019	FY2019	2H 2019		Q4 2019	
		YoY	HoH	YoY	QoQ	YoY
Bookings (USD)	911m	-27.6%	-6.1%	-11.2%	-31.9%	-23.2%
Billings (USD)	894m	-24.4%	+22.0%	-8.4%	+11.1%	+10.8%
Gross Margin	41.1%	-472 bps	+203 bps	-128 bps	-263 bps	-226 bps
Segment Profit (HKD)	477m	-76.3%	+199.1%	-44.8%	-0.5%	+8.0%
Segment Profit Margin	6.8%	-1,491 bps	+549 bps	-611 bps	-102 bps	-23 bps

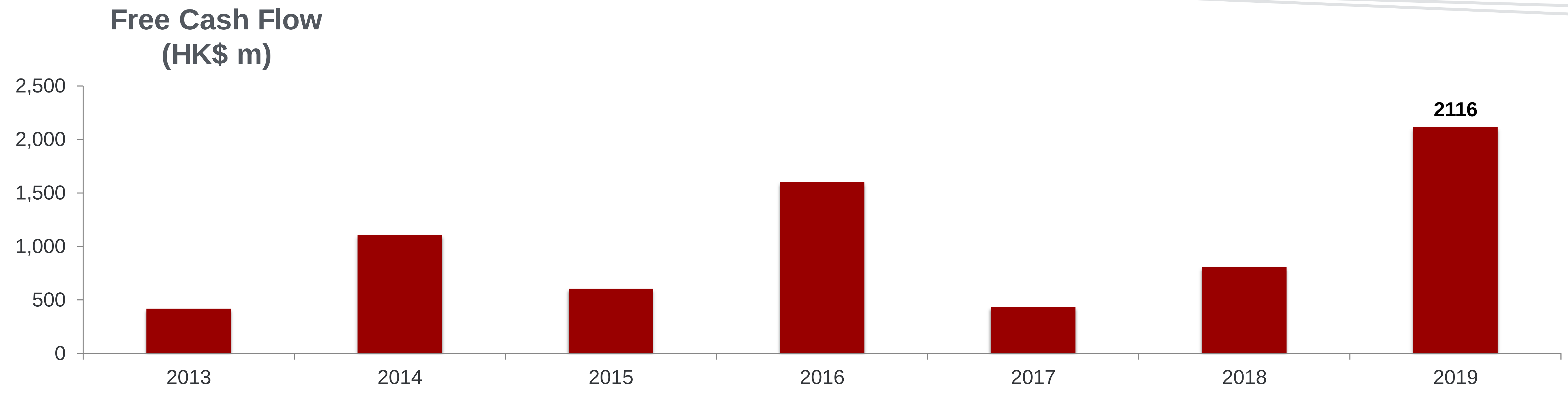
2019 Segment Results – Materials

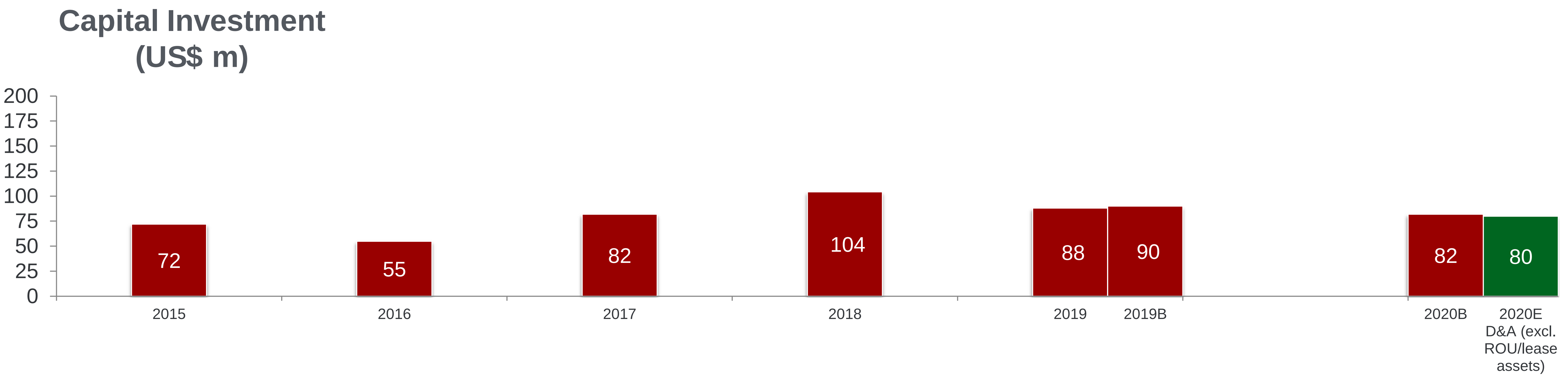
	FY 2019	FY2019	2H 2019		Q4 2019	
		YoY	HoH	YoY	QoQ	YoY
Bookings (USD)	238m	-2.5%	+27.2%	+42.4%	+10.2%	+75.6%
Billings (USD)	236m	-17.8%	+19.5%	-5.9%	+5.0%	+10.2%
Gross Margin	10.1%	-135 bps	-159 bps	-15 bps	-187 bps	+79 bps
Segment Profit (HKD)	58m	-48.7%	-7.2%	-5.3%	-46.2%	+194.5%
Segment Profit Margin	3.1%	-190 bps	-80 bps	+2 bps	-181 bps	+119 bps

2019 Segment Results – SMT Solutions

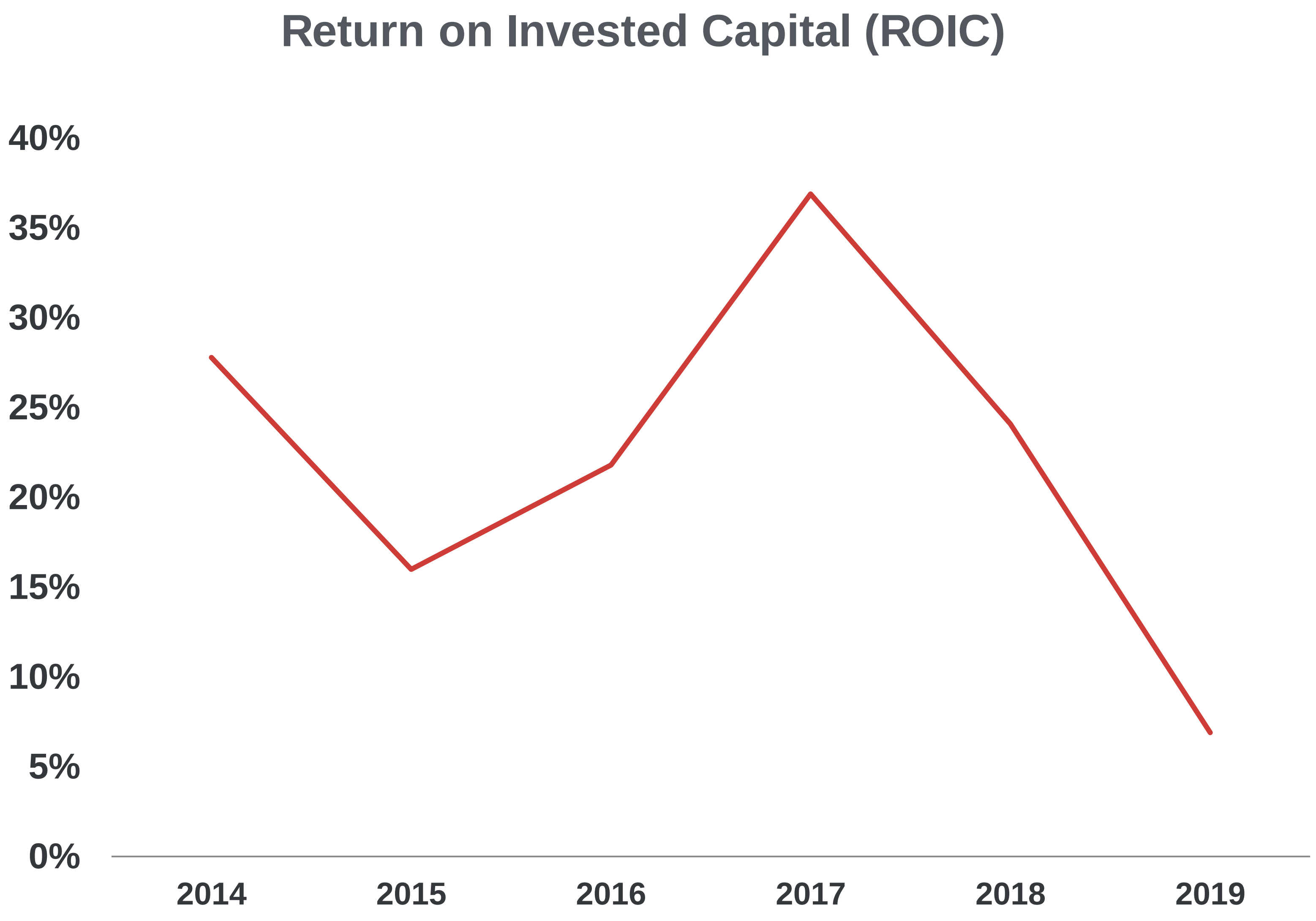
	FY 2019	*FY2019*	*2H 2019*		*Q4 2019*	
		YoY	**HoH**	**YoY**	**QoQ**	**YoY**
Bookings (USD)	872m	**-18.7%**	**-21.1%**	**-23.5%**	**+4.6%**	**-2.7%**
Billings (USD)	897m	**-12.6%**	**+14.5%**	**-19.5%**	**+3.4%**	**-22.8%**
Gross Margin	34.9%	**-154 bps**	**-184 bps**	**-28 bps**	**+282 bps**	**+521 bps**
Segment Profit (HKD)	927m	**-27.3%**	**+19.5%**	**-31.3%**	**+22.8%**	**-6.9%**
Segment Profit Margin	13.2%	**-267 bps**	**+56 bps**	**-231 bps**	**+231 bps**	**+250 bps**

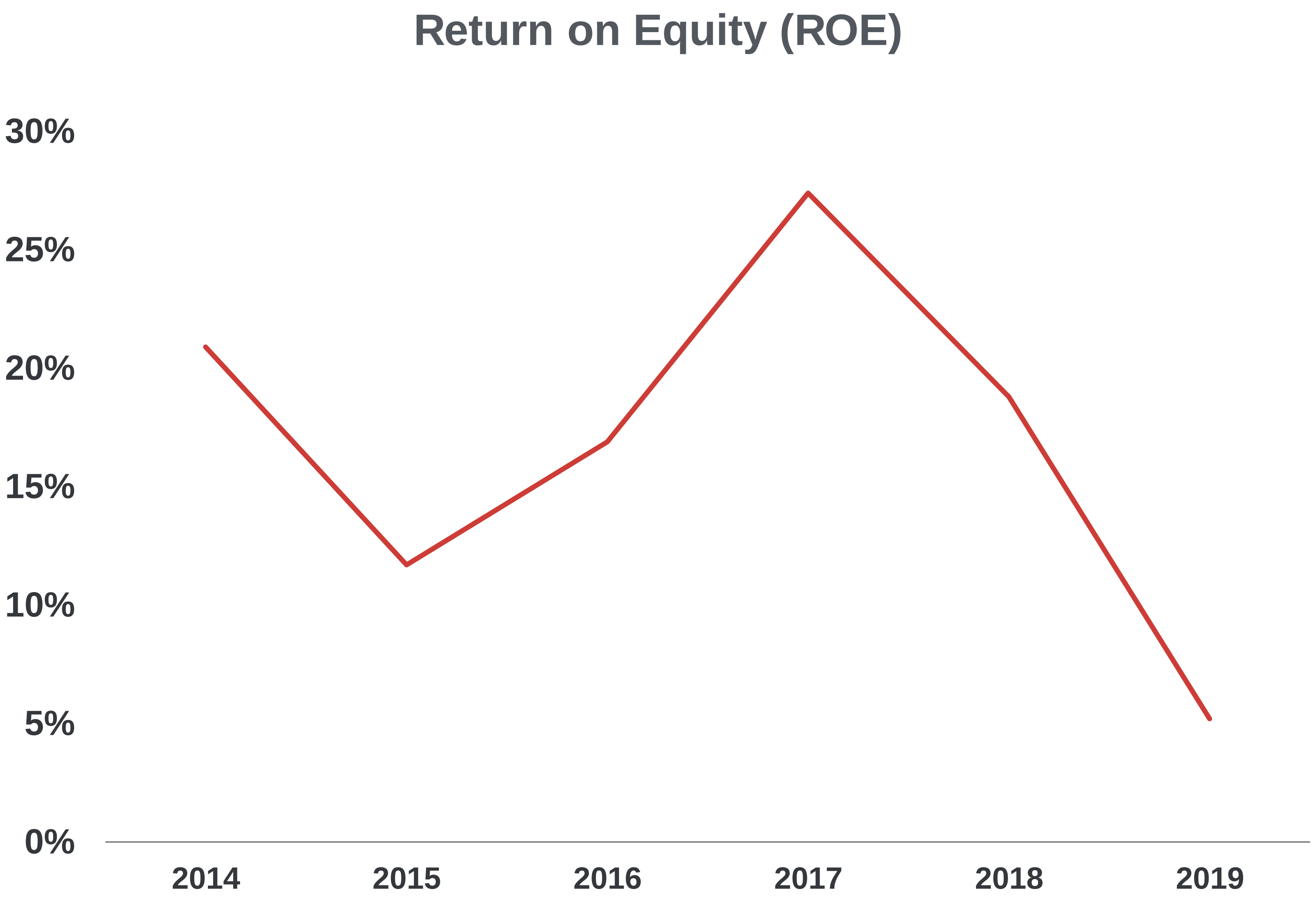
Free Cash Flow and Capital Investment



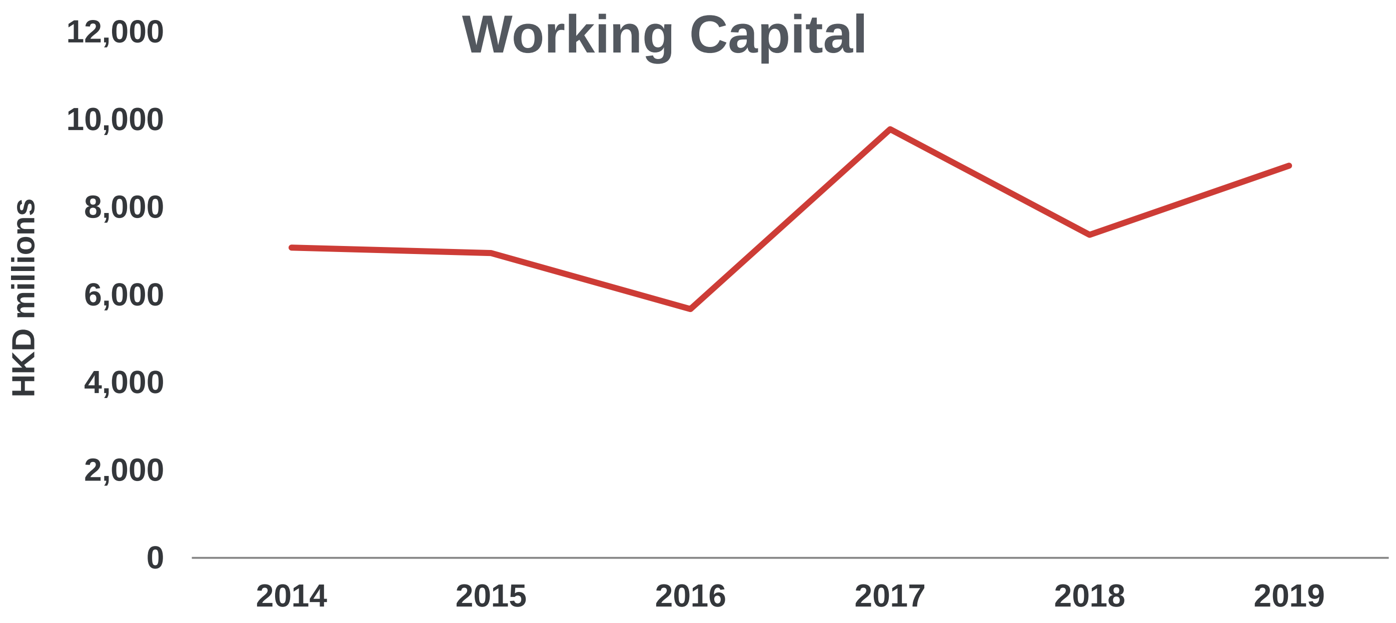


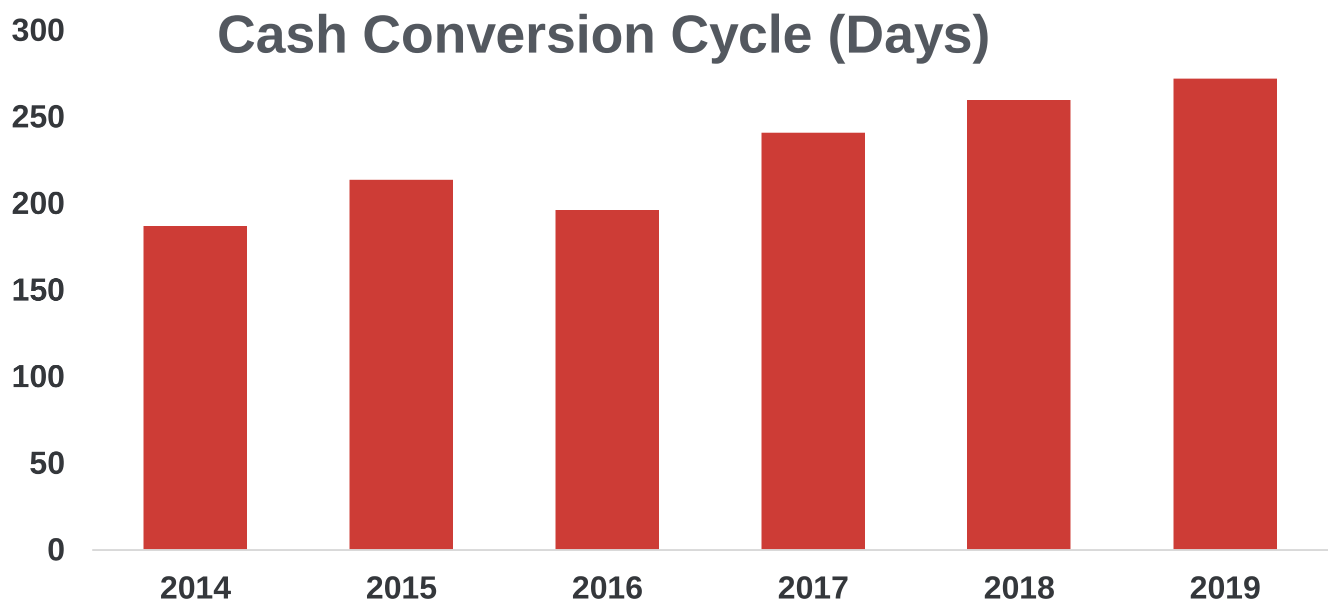
Financial Metrics

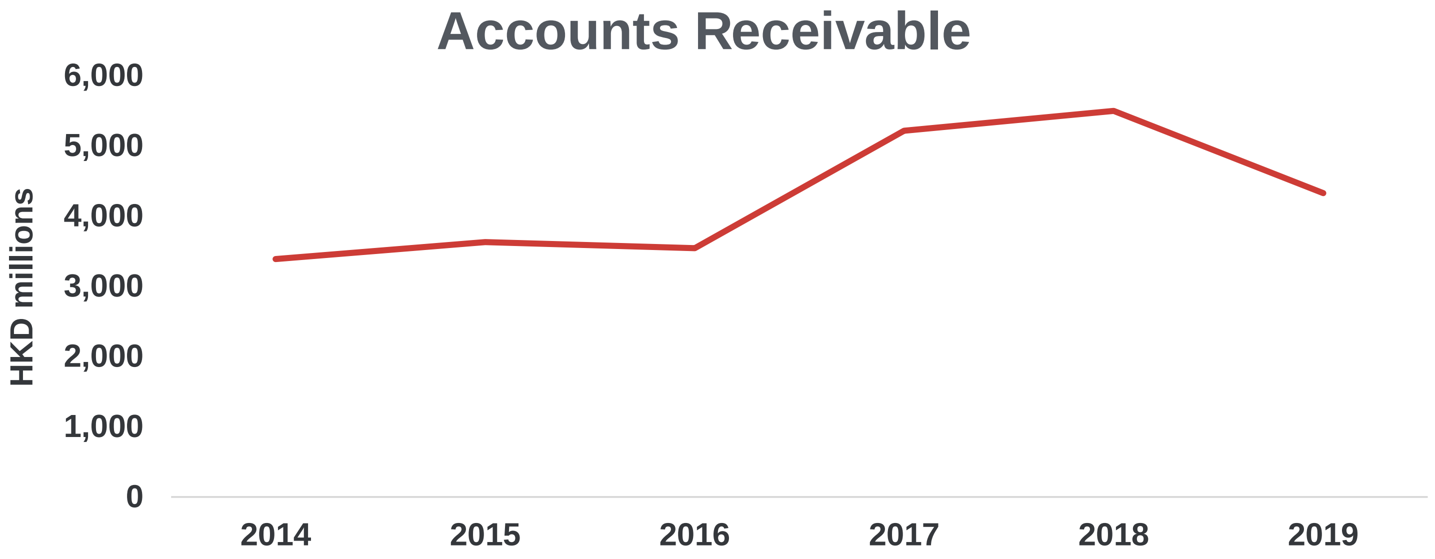


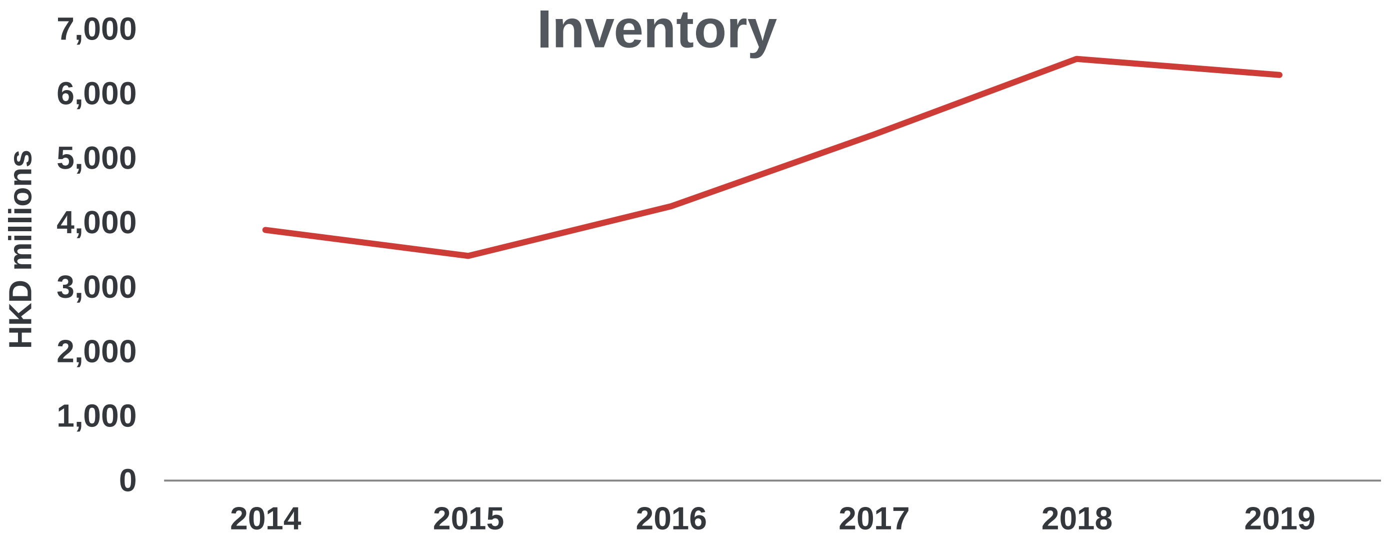


Working Capital Management









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