



AEM

3Q2019 Results Presentation

AEM Holdings Ltd | 6 November 2019

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In this presentation, all \$ dollar amounts are in Singapore dollars unless otherwise specified



Corporate Profile

Global Provider of Equipment Systems Solutions and Manufacturing Services



Listed on SGX

Market Cap
~S\$440m

AEM Holdings
Limited
(AWX.SI)



Revenue

2017 : S\$221.6m

2018 : S\$262.3m

2019: Guidance of
S\$305m - S\$315m



Profit Before Tax

2017 : S\$37.5m

2018 : S\$40.0m

9M19: S\$43.5m





Market & Corporate Updates

Executive Summary

9M 2019 PBT has exceeded full year FY 2018 PBT which was in turn the best year in AEM's corporate history.

Our performance underscores the transformation in the semiconductor industry as it embraces the solutions needed to bring 5G and AI together

New testing solutions will be needed as our customers integrate complex systems spanning wafers, packages, panels and interconnects

We will continue to invest in our technology development and operational execution to support our customers' growth



AEM is benefiting from the drive towards Data-Centricity

5G and AI initiatives are catalyzing new CAPEX and the way they are tested

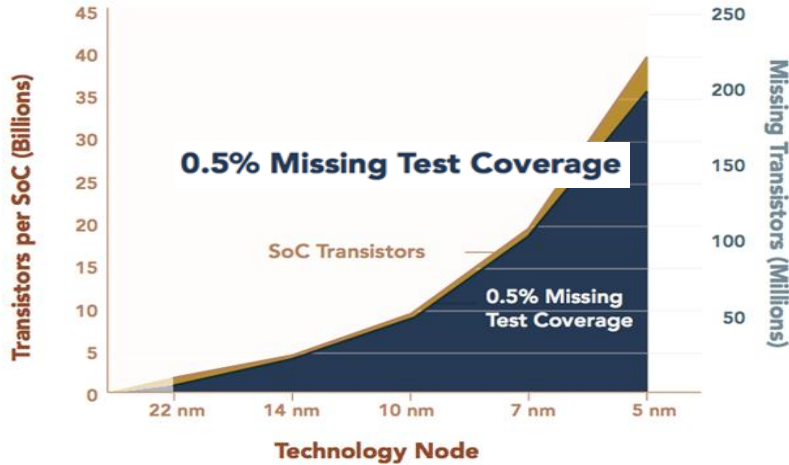
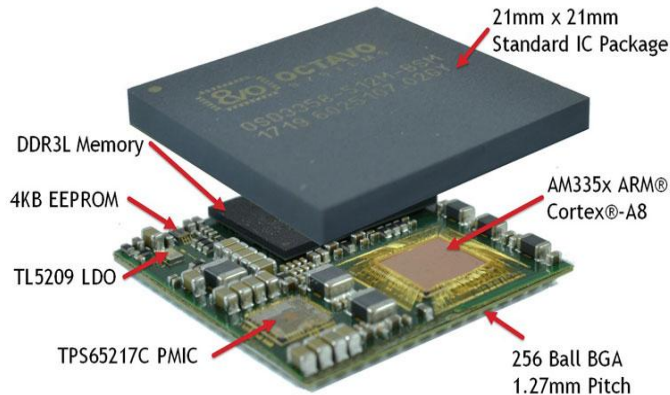
- Infrastructure spending is just beginning.
- Vertical industrial solutions will need customized edge infrastructure that will be software defined
- IoT devices that will interconnect to the 5G infrastructure will be mission critical nodes
- These systems and devices will need to be rigorously tested with software to automotive standards

Competing beyond Moore's Law into heterogeneous semiconductor packages

- Monolithic chip performance based on shrinking nodes will still be important
- However, as AI solutions get verticalized and include 5G edge servers, the need to combine IP blocks in heterogeneous wafers and packages will be the key terms of differentiation
- This will lead to a dramatic increase in customized solutions for device, server, edge solutions that include xPUs, FPGAs, memory, networking, etc.
- The knock-on impact in terms of back-end testing will be dramatic as the number of SKUs increase, DPPM requirements intensify, customer vertical ramp times decrease, test times elongate with chip complexity and product cycles shorten.



Complex SiP devices and test requirements will require System Level Test



Source: Semiconductor Engineering, "Toward System Level Test", Oct 2017

Asynchronous Modular Parallel Smart solution platform (AMPS)

- Singular Test framework that supports different testers or same testers /different-programs to coexist.
- Common, configurable test environment for both functional and system level test.
- Modular handler structure with advanced support for ATC & intelligent vision.
- Scalability that enable rapid high parallelism for fast pace environment.
- Ecosystem testers partners or custom build to lower cost.
- Customized to your specific needs.

New test paradigm

AEM Corporate Priorities

Grow with our key customers as they seek market share in an expanded TAM

- AEM will continue to invest in R&D to develop customized test handling solutions for our key customers for their wafer, package, panel and interconnect system level test needs.
- AEM will continue to invest in operational scalability and supply chain flexibility as our customers respond to an increasingly dynamic end-market demand.
- AEM will continue to upgrade our internal operations from supply chain management to field service engineering to improve the total cost of ownership to our customers.

Expand our offering in System Level Test and its value chain

- Increase investment in new business development and application engineering
- Expand development capabilities for quick-turn design for kits and pans
- Continue to grow our consumables business across the supply chain
- Continue to grow our capabilities in tester development/ integration with our eco-system partners
- Invest in R&D to extend capabilities in thermal controls, vision, package handling, motion control, and machine learning
- Expand our factory automation capabilities with software integration and data analytics
- Continue M&A program





Business Unit Updates

Near term updates for SBUs

Our business is on a solid footing as our investments continue to pay off

1 Key customer – introduces new products with advanced semicon nodes for data-centric needs

- Continue to see demand for AEM high density handlers for testing complex and sophisticated chips
- Expect more test, longer test-time and system level test
- Successfully installed the Beta unit of the hybrid solution for customer
- Continued requirement for pans, kits and spares over the lifetime of our tools

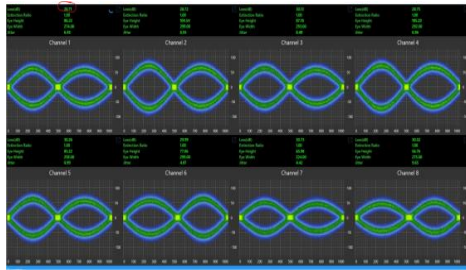
2 Growth through new account wins at SLT-I, Test & Measurement SBU and Afore

- Initial systems have been shipped and accepted by a key customer. Looking to expand the fiber cable test solutions with global customers and their suppliers
- Secure new customers at Afore
- Continue to expand technical capabilities and business solutions



TMS Business Updates

- Looking to expand the fiber cable test solutions with global customers and their suppliers of 5G connectivity, electric vehicle, autonomous driving and data centre.
- Granted 2 patents for (MMVNA) Mixed Mode Vector Network Analyser and the method and system for measuring a propagation delay and transmittance of a device.



TESTPRO 100

CERTIFICATION

INSTALLATION

VALIDATION

SERVICE DEPLOYMENT

TROUBLESHOOTING

MOVES, ADDS & CHANGES



THE ONLY TESTER YOU WILL EVER NEED



MEMS (Afore) Business Updates

- Expected delivery in 4Q2019 for the order from a major German sensor supplier in the automotive and consumer industries for an AIOLOS system. In the midst of discussing other orders from this customer.
- In discussion to get orders for CRYOGENIC PROBER systems . For testing quantum computing wafer in temperature below 2K.

AIOLOS

Wafer level test handler
for environment sensors



 Pressure >

 Humidity >

 Temperature >

 Combo >



SLT-i Business Updates

- Initial systems have been shipped to 1st AMPS customer, and expecting more orders from this customer
- Building up eco-system partners and support structure, targeting market in North America and China
- Scaling up in their product and technological capabilities
- Engaging new semiconductor and memory customers for System Level Test and Intelligent Final Test



Note:- AMPS means Asynchronous Modular Parallel Smart platform

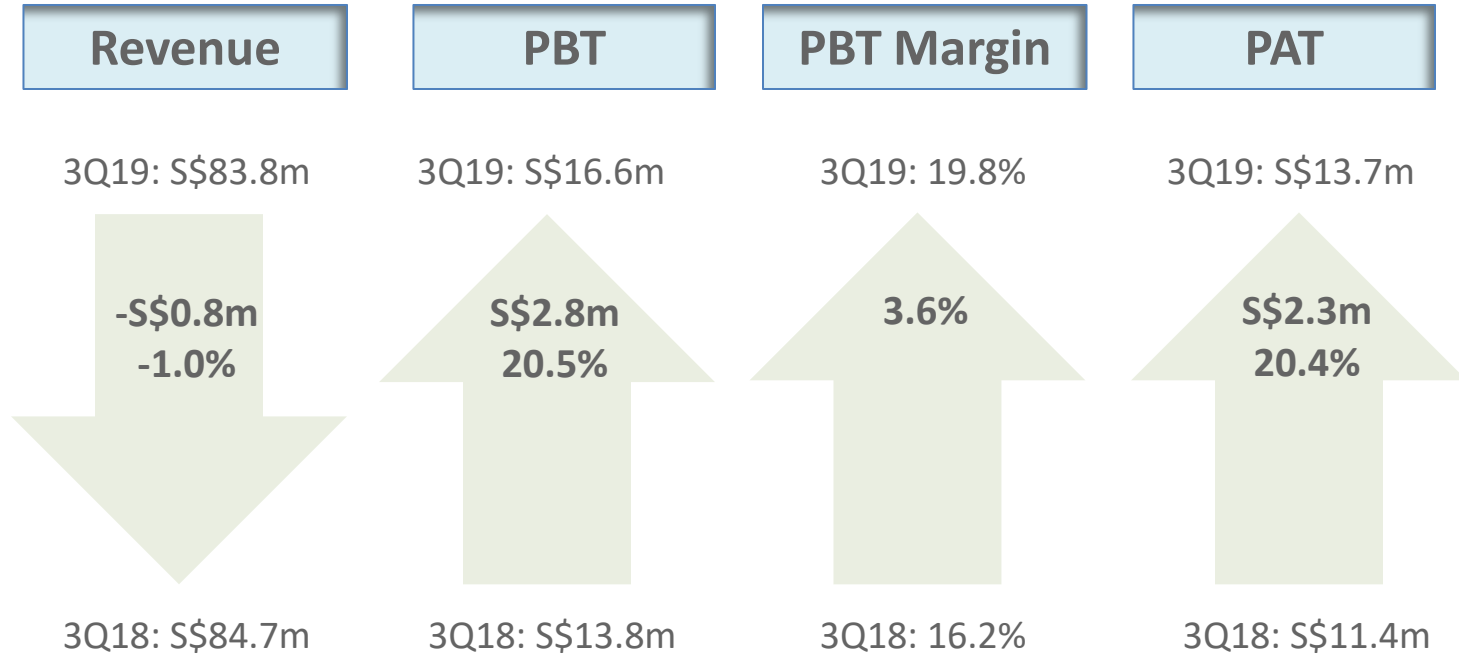




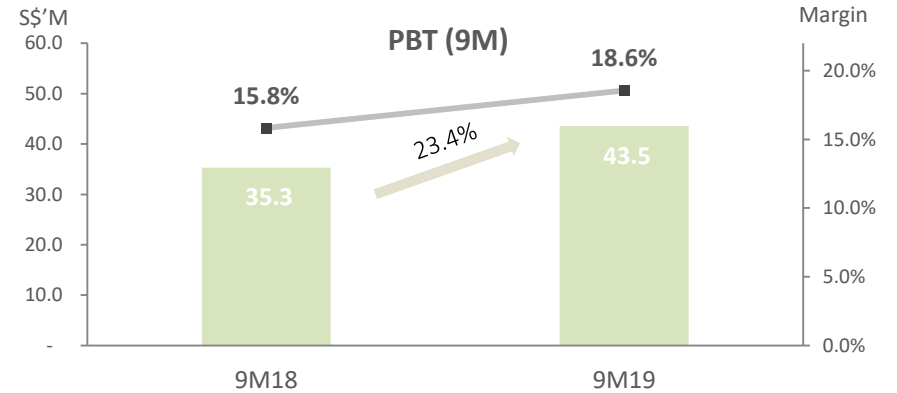
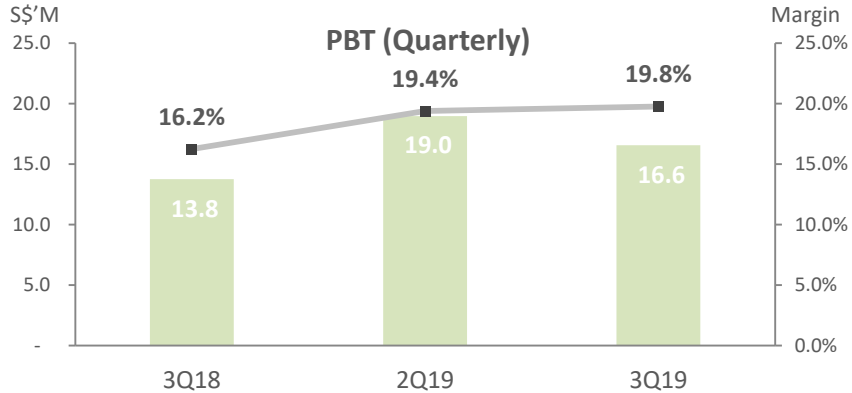
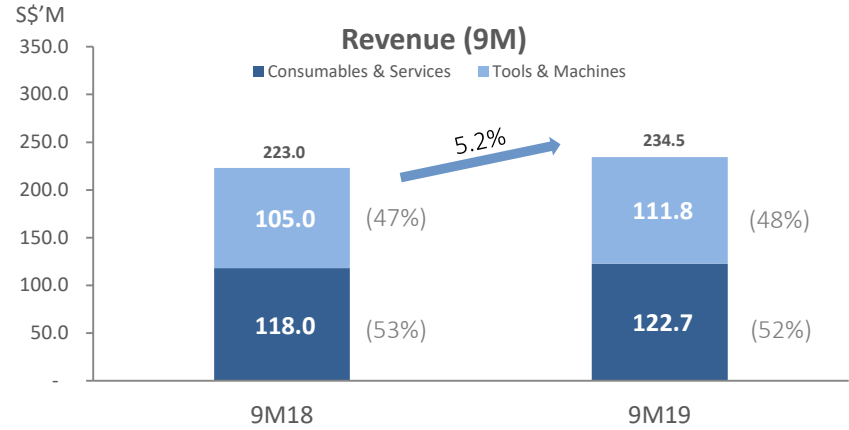
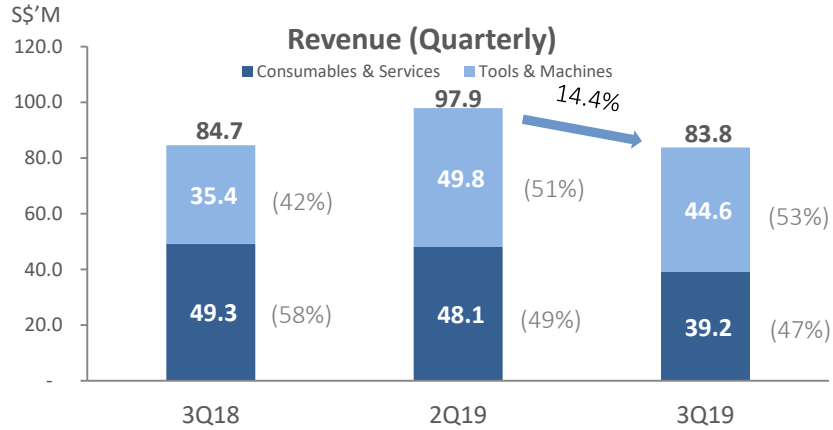
Financial Updates

3Q2019 Financial Highlights

Heading towards a record year



3Q2019 Financial Performance



Profit & Loss Highlights

	Qtr year-on-year			Qtr sequential		YTD year-on-year			FY19
(\$'000)	3Q2019	3Q2018	Change %	2Q2019	Change %	9M2019	9M2018	Change %	Guidance
Revenue	83,848	84,668	-1.0%	97,919	-14.4%	234,483	222,976	5.2%	305M - 315M
Material margin	31,681	27,216	16.4%	35,147	-9.9%	86,985	72,527	19.9%	
Staff cost	10,627	8,748	21.5%	11,311	-6.0%	30,211	25,225	19.8%	
Depreciation & amortisation	1,643	848	93.8%	1,390	18.2%	4,545	1,533	196.5%	
Sales and marketing expenses	2,162	995	117.3%	2,695	-19.8%	6,415	3,441	86.4%	
Profit before tax	16,574	13,754	20.5%	18,984	-12.7%	43,539	35,286	23.4%	
Profit after tax	13,718	11,389	20.4%	15,708	-12.7%	36,022	29,104	23.8%	

- Staff cost was higher in 3Q19 and 9M19 mainly due to higher provision of bonus, higher headcount for business development, engineering, and accounting of Afore Oy.
- Higher depreciation and amortisation was mainly due to additional depreciation charge incurred upon the recognition of ROU (“Right-of-use”) assets and higher carrying value from renovation, equipment and intangible assets (for acquired entities).
- Sales and marketing expenses was higher in 3Q19 and 9M19 mainly due to higher warranty, exhibition and packing expenses.



Financial Position Highlights

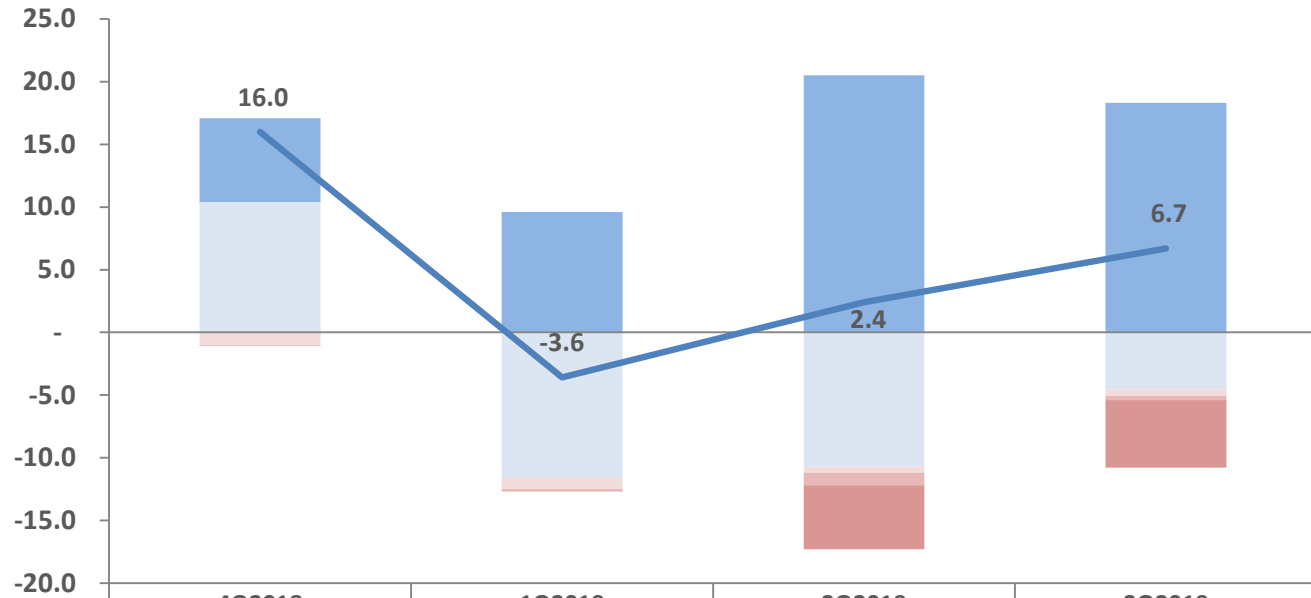
(\$'000)	30-Sep-19	31-Dec-18	30-Sep-18
Property, plant and equipment	5,316	5,725	6,249
Right of use assets	2,449	-	-
Intangible assets and goodwill	17,297	17,717	16,324
Cash and cash equivalents	64,813	58,890	42,539
Current assets less current liabilities	88,710	65,112	59,487
Financial liabilities	-	259	243
Total equity	115,353	89,504	85,105
Net asset value per share (SG cents)	42.8	33.3	31.6

- Recognition of ROU assets (S\$2.4m) representing the rights of use of the underlying asset from lease.
- No financial liabilities as of 30 September 19.
- Cash increased due to operating profit of S\$48.4m more than offset by dividend payment (S\$10.5m), increased in working capital (S\$19.7m), and tax, lease and other payments (S\$9.4m).
- Current assets less current liabilities was higher due to higher sales in 3Q2019 and higher inventory builds for the fulfilment of sales orders.



Cash and Cash Flow

S\$'M



	4Q2018	1Q2019	2Q2019	3Q2019	9M2019
Dividends	-	-	-5.1	-5.4	-10.5
Share buy back	-0.1	-0.2	-1.0	-0.3	-1.5
Capex	-1.0	-0.9	-0.5	-0.5	-1.9
Operating profit	6.7	9.6	20.5	18.3	48.4
Changes in working capital and tax	10.4	-11.6	-10.7	-4.6	-26.9
Net cash generated	16.0	-3.6	2.4	6.7	5.5

Summary

Proven ability to innovate and deliver solutions on the global stage

Strategic relationship with one of the world's largest semiconductor companies for >18 years in developing and manufacturing leading –edge test handlers and consumables

Strong financial position

No debt and low capital expenditure requirement, and generating positive cash from operations. Strongest balance sheet position in AEM's history

Strategic expansion through M&A and in-house technology development

- Follow-on development projects with our key customer.
- TMS group has established itself within the last 2 years as a niche leader globally in 5G and EV cable test. Opportunities to expand into communications modules, etc.
- Afore team's landmark delivery of the world's first quantum computing prober solution, and advance pilots for its wafer level test solutions in MEMS
- Continued investment in our execution capabilities and technology development





Thank You

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