

Engage

APRIL 14 - APRIL 27, 2018



SEMI sets the bar in E&E industry

A non-profit body has provided stewardship for the regions electronics industry for almost half a century. SEMI Southeast Asia president Ng Kai Fai discusses the industry outlook with *MALAYSIA SME*®

Getting to know SEMI

SEMI sets the bar in E&E industry

A non-profit body has provided stewardship for the regions electronics industry for almost half a century. SEMI Southeast Asia president Ng Kai Fai discusses the industry outlook with *MALAYSIA SME*[®]

By **Susanna Lim** Pics by **Brandon Eu**



SEMI provides industry stewardship and engages our members to advance the interests of the global electronics supply chain. We set standards in the semiconductor manufacturing environment which many companies in the semiconductor industry adhere to. In fact, any electronics manufacturing supply chain that manufactures semiconductors uses SEMI standards.

Because of our not-for-profit nature, we are also governed by our members. We now have around 2500 members. We also help our members in the region to internationalise their businesses.

MSME: Who is eligible to be a member of SEMI?

Ng: Anyone in the semiconductor industry is eligible to be a member. Any company in the manufacturing supply chain would qualify but there are certain criteria which we screen through. Any of these players who would like to take a role in developing the industry are welcome to join SEMI.

MSME: How can SMEs benefit when they become members of SEMI?

Ng: When we talk about supply chains, the manufacturing environment is pretty diverse. One supply chain could be an OEM for instance who has to build equipment that complies with SEMI standards which the industry adheres to when manufacturing equipment. Being a member would give the individual company access to these standards. Much more than that, they would have an influence on what kind of new standards need to be created. So in some sense, I think being a SEMI member as an SME allows them to participate and build certain criteria to their competitive advantage. They basically influence and are part of a community which build standards which improve productivity of the industry.

MSME: What are the main challenges currently in the E&E sector?

Ng: Talent is a big issue right now. One thing really important in the scope of SEMI right now is that we continuously develop talent, especially (Science, Technology, Engineering and Mathematics) STEM talents. We're giving that an even more significant push right now given the fact that STEM enrolment in schools and universities are dropping worldwide.

In fact, we just had an article by our CEO saying that there are more than 10,000 jobs in Silicon Valley that are vacant due to a lack of the right talent. It's a global problem.

So right now, we're doing our part and working with the Ministry of Education to put together some programmes that can excite secondary school students about Science, Technology and Maths.

But in terms of talent for SMEs, one of the big things is that SMEs need to look into more adoption of Industrie 4.0 rather than just counting on manpower to do the things the way we used to. And this adoption of smart manufacturing is more than just for SMEs, but also for big companies. But the trouble is with the difference in adoption levels. Even in Singapore, SMEs are slow in the adoption of Industrie 4.0, because it's so diverse – what exactly does Industrie 4.0 mean? Most SMEs don't know.

SEMI Southeast Asia president Ng Kai Fai speaks to us about the outlook of the E&E industry in Malaysia, Industrie 4.0 creating a greater demand for talent, and SEMICON 2018

MALAYSIA SME[®]: Tell us about SEMI Southeast Asia and the role it plays in the semiconductor industry.

Ng: SEMI Southeast Asia, a non-profit association, has been around for more than 47 years now. What we do is foster and facilitate the development of the electronics and manufacturing supply chain globally. We do this through many different areas, including advocacy.

The second perception SMEs have is that they don't have the deep pockets to invest in Industrie 4.0. Some of the SMEs that we visited in the electronics industry are still using Excel files to keep track of inventories. This can easily be automated and is an element of Industry 4.0, the automation of data. Automation, digitalisation and ERP systems can all help SMEs be more productive.

MSME: What are the main barriers SMEs face when implementing Industrie 4.0?

Ng: Given the fact that SMEs are always sensitive about cash investment, I don't want to understate that cost is a big problem. But Industrie 4.0 adoption has many levels. The adoption of automatic systems to generate your customer databases, for instance. A small adoption like that doesn't cost a lot of money but it saves a lot of manpower. We exchange name cards so frequently, but for someone to key all that data in is cumbersome. For someone to track customers' purchases over time is also very tedious. So automation could help in these aspects. These kinds of changes aren't too costly.

Right now, SMEs are most of the time still dependant on hard talent, but the adoption of robotics would save them in the long run. The question for the SME is not about investment right now; it's about what the payback period is. They would soon realise that the payback period is significantly shorter because robots can work 24/7, unlike human beings. So those are the areas where SMEs really need to consider moving in tandem with what the world is moving towards.

The second thing SMEs lack is an understanding of market momentum in the industry. It seems to me that most of the time SMEs aren't very sure about trends and aren't exposed enough to them. In the electronics industry where things are moving so fast, if they are unsure about the trends and the market, they might not capture these trends or market demands in their own business.

While the government grants are a good start, there needs to be a greater awareness of these programmes that help them, and most times they aren't. Maybe it's down to both sides - the government isn't promoting and dispensing the information through the right channels and also maybe the SMEs aren't keeping abreast of what the government is doing.

MSME: How does Malaysia's E&E sector compare to the rest of the SEA region?

Ng: I think Malaysia has a very significant contribution to the electronics scene globally. SEA contributes to more than 27% of the global electronics footprint for packaging and testing, Malaysia itself takes up more than 13% of the 27%, which is huge. So Malaysia has a strong ecosystem. The entire electronics supply chain ecosystem. The only thing that's lacking is design, which SMEs can improve on. One of the things SMEs can take advantage of is IoT. We went through the IBM, mainframe computers, then we went to desktop, and then laptop, then to the mobile phone.

Throughout this journey, from mainframe to desktop computer to laptops, the technology has played an important role. With mainframe, maybe the technology was bigger, but then it's getting smaller and smaller and smaller. So now you can have the entire mainframe in a mobile phone, because the ICs are getting smaller.

MSME: Are there areas that SMEs can capitalise on to compete with their larger counterparts?

Ng: E&E has always been dominated by the big boys. Why? This is because the big boys (larger companies) always have the capital to invest in technology and R&D. But we are now entering the phase of the Internet of Things (IoT), where almost everything will be electronic. The beauty about IoT is that the technology now needed is different.

Traditionally, the technology was from mainframe to computer - you needed speed and miniaturisation. For IoT, the technology needed is different and speed is not the only factor, so the IoT market is no longer limited to the big boys. When we talk about speed, the big boys have the capital to invest into technology and R&D and understand how to improve the speed of electronics, but with IoT, since speed is not the only determining factor, SMEs have a good chance to go into the market right now. Rather than speed, they can focus on design.

IoT for internal circuits (IC) are so diverse for different applications, some for phone connections, some for cloud and data churning. Some of them turn images around when your phone turns, some of them are for robotics to move and sense things. So IoT requirements of IC chips are so diverse that SMEs could actually carve a niche from this transition.

The big boys know this, so I think the market is going to be able to accommodate more and more SMEs. In Singapore, we are encouraging SMEs to go into value creation for application in IoT.

In Malaysia we have a very strong backbone in the E&E sector. We have everything from manufacturing of the semiconductors which is the IC, in Kulim. In Sarawak, we have Infineon Technologies, Silterra Malaysia, X-Fab Sarawak Sdn Bhd. For packaging and testing there is in Penang

ASE, in KL we have Renesas Semiconductor KL, then after packing we have EMS players like Flextronics Ind. Malaysia Sdn Bhd. What we really need to now work on is the design of the semiconductor device, be it for connection or data capture, etc.

This is where SMEs can play a role, and the barrier to entry is not as great as manufacturing where you have to invest a lot of money into building equipment. The barrier to entry is instead talent - engineering talent to design devices. So most SMEs have a fair chance to play. It's almost a level playing field because IoT is still at a nascent stage. There are huge opportunities for SMEs here.

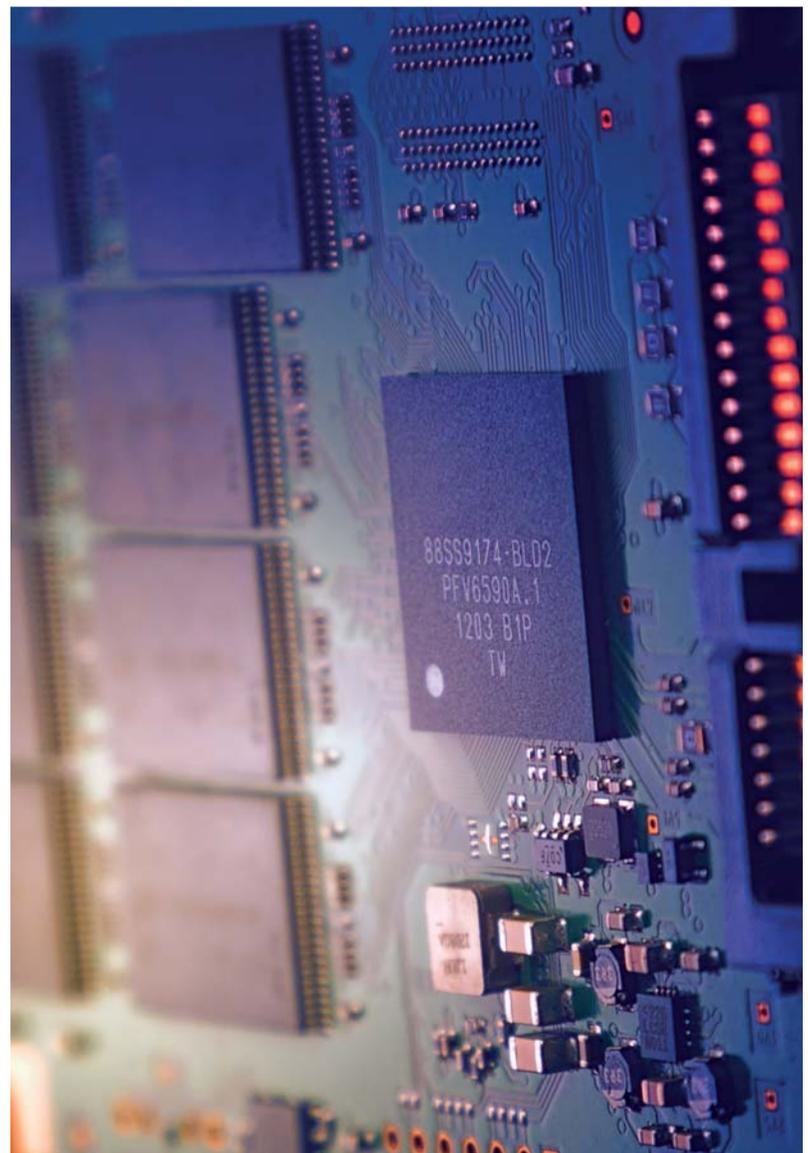
Talent is a big issue right now. One thing really important in the scope of SEMI right now is that we continuously develop talent, especially (Science, Technology, Engineering and Mathematics) STEM talents.

MSME: How can SMEs in the E&E industry go global with their business?

Ng: Most SMEs find it difficult to internationalise because they don't know which the best channels are to reach out to and the collaborative partners to connect with. This is where SEMICON can help (an annual exhibition SEMI organises). It's a platform that exposes SMEs to other SMEs and to even bigger companies to seek an understanding of whether there is any partnership to be made. We have more than 250 companies there, and we expect more than 8500 people there, all in the same electronics, manufacturing trade. Conversations will be made.

Rather than just being an exhibition, SEMICON is an enabler for SMEs to internationalise their business through networking, exploring collaborative opportunities amongst the 8500 people in attendance and expanding their network within their peers. It's a global event with international delegates coming in from around the world and is an opportunity not to be missed for SMEs.

SEMICON 2018 is set to happen on May 8th this year at MITEC, with a sterling list of speakers lined up to speak about the electronics market sector.



Getting to know SEMI

By Susanna Lim



About SEMI

SEMI is the global industry association serving the manufacturing supply chain for the micro- and nano-electronics industries, including:

- Semiconductors
- Photovoltaics (PV)
- High-Brightness LED
- Flat Panel Display (FPD)
- Micro-electromechanical systems (MEMS)
- Printed and flexible electronics

- Related micro- and nano-electronics

The industries, companies, and people SEMI represents are the architects of the electronics revolution. SEMI members are responsible for the innovations and technologies that enable smarter, faster, more powerful, and more affordable electronic products and devices that bring the power of the digital age to more people every day.

For more than 40 years, SEMI has served its members and the industries it represents through programs, initiatives, and actions designed to advance business and market growth worldwide. SEMI supports its members through a global network of offices, activities, and events in every major electronics manufacturing region around the world.

SEMI's purpose

The industries that comprise the microelectronics supply chain are increasingly complex, capital intensive, and interdependent. Delivering cutting-edge electronics to the marketplace requires:

- Construction of new manufacturing facilities (fabs)

- Development of new processes, tools, materials, and manufacturing standards
- Advocacy and action on policies and regulations that encourage business growth
- Investment in organizational and financial resources
- Integration across all segments of the industry around the world
- Addressing these needs and challenges requires organized and collective action on a global scale.

SEMI facilitates the development and growth of our industries and manufacturing regions by organizing regional trade events (expositions), trade missions, and conferences; by engaging local and national governments and policy makers; through fostering collaboration; by conducting industry research and reporting market data; and by supporting other initiatives that encourage investment, trade, and technology innovation.

In addition to supporting access to regional markets, SEMI helps its members explore diversified business opportunities and contributes to the growth and advance of emerging and adjacent technology markets.



with other organizations and coalitions, SEMI promotes.

Membership

As a SEMI member, you, your company, and your employees have access to a world of opportunities that connect you to new markets, new customers, and new business. Learn how SEMI membership connects you to:

- Global markets and business opportunities
- Communities and Special Interest Groups
- Information and market research
- Advocacy and action
- Exclusive member benefits

Board of directors

Chairman: Tetsuo (Tom) Tsuneishi
Chairman of the Board
Tokyo Electron Limited

Vice Chairman: Bertrand Loy
President and CEO
Entegris

Secretary/Treasurer: Mary G. Puma
President and CEO
Axcelis Technologies, Inc.

Past Chairman: Yong Han (YH) Lee
Chairman
Wonik

Board of directors:

Mike Allison
President, Semiconductor Division
Edwards

Stephen S. Schwartz
Chief Executive Officer
Brooks Automation

Martin Anstice
President
Lam Research

Kevin Crofton
President, SPTS Technologies
Corporate VP, Orbotech

Kyu Dong Sung
Chief Executive Officer

EO Technics

Jon D. Kemp

President

Dupont Electronics & Communications

Xinchao Wang

Chairman

JCET

Nobu Koshiba

President & Representative Director

JSR Corporation

Tien Wu

Director

Chief Operating Officer

ASE Group, Inc

Sue Lin

Vice Chairman

Hermes Epitek Corp.

Natsunosuke Yago

Chairman

Ebara Corporation

Ajit Manocha

President & CEO

SEMI

Guoming Zhang

Executive Vice President

Naura

Daisuke Murata

President & CEO

Murata Machinery

Collaborations

Special interest groups

SEMI Special Interest Groups (SIGs) connect SEMI members to discuss and advance specific issues - mostly technical issues - that are important to SEMI Member's business development interests. These SEMI communities provide members a collaborative platform and a collective voice within the electronic industry globally; allow SEMI members access to information on parts of the extended electronic supply chain; and, the SEMI standards and requirements platform to develop the community's worldwide capability. Special Interest

Groups are structured according to their individual charter and bylaws.

Committees

Executive Committees (Board of Directors, Regional Advisory Boards)

Executive Committees consists of executive leaders from SEMI Member companies, the SEMI Board of Directors provide guidance to SEMI Leadership. SEMI Regional Advisory Boards help guide SEMI services and programs in all major manufacturing regions of the world.

Standards Technical Committees

SEMI brings together industry experts through a number of committees to develop globally accepted technical standards. These Standards Technical Committees provide the forum for the essential collaborations that must be achieved to move new and existing markets forward efficiently and profitably. What to know more? Click here for the benefit of participating SEMI Standards Program.

MALAYSIA SME[®]'s Engage is a monthly pull-out aimed at giving business councils, chambers of commerce and trade associations a platform to Engage with SMEs.

If your association wishes to be featured, please contact the Editor Rupinder Singh at: rupinder@malaysiasme.com.my

Mission

SEMI provides industry stewardship and engages our members to advance the interests of the global electronics supply chain.

Vision

SEMI promotes the development of the global electronics supply chain and positively influences the growth and prosperity of its members. SEMI advances the mutual business interests of its membership and promotes a free and open global marketplace.

Benefits

SEMI exhibitions, including SEMICON[®], are recognized around the world as the premier forums for showcasing new products and technologies.

SEMI is driven to serve member needs by an international Board of Directors, regional advisory boards, numerous advisory committees and more.

The SEMI Industry Research and Statistics program collects and reports critical data on the global microelectronics industry.

Working directly with governmental and regulatory authorities, and in association