

# E&E Industry from the Corporate's Perspective

Interview Conducted by Reika Kua Kee Eng

**I**n order to take a closer look at the issues highlighted by Y.Bhg. Dato' Wong Siew Hai in the previous article, "The Malaysian Electrical & Electronics (E&E) Industry – At an Inflection Point," *JURUTERA* also conducted interview sessions with Mr. Chris Kelly, the General Manager of the Malaysia Design Center (MDC), Intel Malaysia; Dr. Hari Narayanan, the Director of Engineering, Head of Penang R&D Centre, Motorola Solutions Malaysia; Dr. Kamarulzaman Mohamed Zin, Chief Executive Officer (CEO) of Silterra; and Mr. Dennis Au, Vice President of Sales, Marketing and Support for Asia, Agilent Technologies.

Electrical & Electronics (E&E) industry has experienced extremely high growth over the last two decades. Such progress has also led to various concerns in terms of sufficiency of workforce and talent, the contribution of MNCs to community and workforce, and the collaboration with institutions of higher learning for constant research and development of sustainable technology. Let's take an in-depth look at these issues from the corporate's perspective.

## THE IMPACT OF GLOBAL & REGIONAL COMPETITIONS TO E&E INDUSTRY

"Malaysia needs to continue to climb the value chain ladder and increase the capability of its workforce to support this task. Despite the growing cost of manufacturing in China and some manufacturing returning to our shores, we should not be distracted from the need to grow local R&D talents and to continue to innovate. Providing suitable incentives to cultivate and encourage MNCs, both foreign and local, as well as SMEs to develop world class technologies and products from Malaysia is vital," suggested Mr. Dennis Au, Vice President of Sales, Marketing and Support for Asia, Agilent Technologies.

He added, "To achieve these objectives, we, as an MNC, need to continue building an ecosystem of supporting suppliers and SMEs in Malaysia. This deep-rooted eco-system will allow Malaysia to not only compete regionally and globally but will also encourage investments from overseas to take advantage of the country's capability, infrastructure and incentives."

According to Dr. Hari Narayanan who is the Director of Engineering and Head of Penang R&D Centre, Motorola Solutions Malaysia, the electronic industry is rapidly changing and the ability to evolve and innovate to stay ahead of the curve is key for any technological company to become successful. It is imperative for Malaysia's electronic industry players to have a robust set of strategies focusing on not just driving efficiency in its operations and cutting costs, but also the ability to be agile and nimble to move up the value chain (e.g. in areas of design and development) to complement its manufacturing base.

## HOW WELL-READIED ARE OUR TALENTS?

As Malaysia is pushed to move up the technology value chain, how ready are our talents to weather such challenges? According to Dr. Hari Narayanan, we have a capable workforce with potentials in Malaysia. However, there is a need to create the right environment and provide the right strategic leadership to enable these talents to meet the challenges.

Meanwhile, CEO of Silterra, Dr. Kamarulzaman Mohamed Zin, also shared the same opinion with Dr. Hari Narayanan that our talents should be readied to weather such challenges. "As shared earlier, most of our talents are locals trained in local and overseas institutions; and from that base of knowledge, our company builds its intellectual capital and assets through training, exposure and serving the customers. We constantly encourage our talents to further enhance their skills and competencies through formalised programmes as well as through unstructured self-driven programmes for our team to improve themselves. The role of management here is to give the resources for it to happen. Our industry is like that – there is no sitting still".

In addition, Dr. Kamarulzaman also highlighted that integrated circuit (IC) design and fabrication actually sits at the top of the value-chain of the electronics industry. The advancements achieved in IC design and fabrication generally drive the innovations in nearly all of the activities of human endeavour.

Adding to the above, Mr. Chris Kelly, the General Manager of the Malaysia Design Center (MDC), Intel Malaysia commented, "To overcome the mismatch between industry needs and available talent, Intel has been working with education institutions to ensure that graduates are equipped with industry-relevant skills even before they enter the workforce. For example, Intel and MDeC signed a MoU in 2009 to provide industry-relevant training courses to faculty members of Malaysian universities to upgrade existing academic curriculum for graduates. Intel is also a key partner in the CREST research institution initiative".

Intel works very closely with MoHE, Northern Corridor Implementation Authority (NCIA), various government agencies and the universities to develop curricula that will advance innovation in key areas of technology in an effort to increase the technical talent in the country. Intel Malaysia, MoHE and MDeC have collaborated to introduce its VSLI and TRIZ curricula to university professors to integrate into their lessons. The curriculum development offers training for faculty members to teach graduates and enhance their technical and systematic innovative problem solving skills which will be relevant to industry requirements. In addition, Intel has also worked with NCIA to develop a programme to train unemployed graduates on analog and digital design as part of the efforts to move up the value chain through human capital development, enabling the Design and Development growth for the nation.

"At Intel, we value our employees and are always looking for the right talent for the high-technology work we carry out. We hire on a needs basis and as high-volume manufacturing is automated, the priority for us is to move Intel Malaysia up the value chain to focus on high-value activity such as design and development and R&D. Our goal is for Intel Malaysia to be innovation-driven, in line with the government's vision for the nation," added Mr. Chris Kelly.

"Besides developing university programmes and opportunities for graduate trainees, we also provide in-house training and development programs for our employees. In our 41 years here in Penang, Intel has employed some tens of thousands of people! We also work very



closely with the government on its strategic initiatives like Talent Corp to attract creative and bright individuals back to the local scene," said Mr. Chris Kelly.

## COLLABORATION WITH INSTITUTIONS OF HIGHER LEARNING

Both Mr. Dennis Au of Agilent Technologies and Dr Kamarulzaman of Silterra agree that universities do play a role in supporting technology innovation. However, they also pointed out that collaboration between major industrial players such the related MNCs would certainly make a difference and help bring more opportunities to existing and future talents in the E&E industry. "The semiconductor industry has always been one of the most R&D-intensive industries today with strong traditional ties with the Universities. Our collaboration with the Universities, Polytechnics and Technical Training Institutes are very extensive indeed. We start with the academic personnel themselves – we open our doors to whoever who are interested to spend their sabbaticals with us, in the hope that by making our activities transparent to them we should be able to bridge the gaps between industry and academia," said Dr Kamarulzaman.

He further elaborated that Silterra has internship programmes for graduates (locals and foreign) who want to embark on a career in the semiconductor industry, and such programmes are organised in collaboration with the different Government agencies (e.g. programmes with UNIMAP, USM, UNITEN, UTEM, UUM, NCIA and Talent Corp). Silterra has also invested and sponsored in various research projects with the academicians. Some of these projects lead to postgraduate qualification for our personnel. "We provide special and affordable services to the Universities and Academia to use our Multi Project Wafer Services (MPW) for them to convert their integrated circuit designs into actual silicon chips. Then, they would be able to discover whether the designs actually work or work reliably according to specifications. A true moment of discovery indeed," highlighted Dr Kamarulzaman.

Agilent is also actively partnering with the government and academia to cultivate and nurture academic excellence in science and engineering by supporting initiatives to set up effective laboratories with embedded educational kits that will enhance the learning experience of the students. In addition, Agilent works closely with universities to strengthen their curriculum at all levels, all the way to PhD level, including developing and delivering competency specific programmes that their engineers can leverage on to enhance their knowledge while they are working.

An example of a successful collaboration is the setting up of a Knowledge Worker's Development Center to deliver specialised knowledge transfer and technology-sharing opportunities for post-graduate students. "To do this, we have set up comprehensive programmes to equip public labs to develop hands-on competencies in the fields of E&E, biotechnology and analytical chemistry," said Mr. Dennis Au from Agilent Technologies. He continued, "Beyond education, we are also active partners in Malaysia's newly established CREST initiative. Here, we will help to identify key market orientated research projects for local universities and research institutes. For some of these projects, Agilent will also be an active research collaborator".

## KEEPING UP WITH THE EXPECTATIONS OF THE WORKFORCE AND COMMUNITY

According to Mr. Chris Kelly, Intel Corporation has a very strong commitment to the communities where they work and live in. "We have strong interest in supporting education, environment and community programmes that deliver the kind of educational and technological advancement opportunities within our communities. This builds the framework for our community programmes, but each initiative is implemented and tailored to suit the needs of each unique Intel site".

Such emphasis can be observed through its conducts which have earned Intel several recognitions. For instance, Intel has established a stellar track record of corporate citizenship in its efforts among the community. Intel Malaysia is recognized externally for its contribution in the CSR space, including winner of the inaugural Prime Minister's CSR Award in 2007, Community and Social Development Category, and in 2009 for the Environment Category, with Honorable Mentions in Education and Workplace Practices.

"We have established several annual CSR programmes for the environment and the community, such as mangrove tree planting, Back-to-School programme, annual Hari Raya and Chinese New Year Festive Cheers. The impact of our CSR efforts in the community has been encouraging and we intend to step up. The spirit of volunteerism in Intel Malaysia runs deep in the veins of our corporate culture. Over 50% of our employees volunteer in communities where they work and live," highlighted Mr. Chris Kelly.

"For Agilent, we see ourselves as one of the major players in proliferating interest in the Science, Technology, Engineering and Math (STEM) subjects in schools and universities. Interest in these fields will go a long way to encourage future generations to embrace science and engineering, and hence helping to ensure a continuous pipeline of science talents to power Malaysia today and beyond. Specifically, we actively engage the local community with a wide range of STEM-based outreach programmes that range from primary schools to universities," emphasized Mr. Dennis Au from Agilent Technologies.

According to Mr. Dennis Au, "Agilent's business model is based on global technology leadership in our areas of interest. Our continuing push to extend the technology boundaries in these fields will also be felt as we introduce these into the local community through our local workforce and technology outreach programmes".

## WORD OF ADVICE FOR BUDDING ENGINEERS

According to Dato' Wong Siew Hai, the E&E industry will continue to hire engineers for their growth and expansion in new projects and responsibilities. If a graduate's plan is to be involved in D&D, then he or she needs to ensure that he or she gets a good foundation in engineering principles including software knowledge. "Although grades may not sound important, the new engineer will likely be called for an interview if he achieves a CGPA of 3 and above. If he has an MSc or PhD, he will have an edge over others. The company now also evaluates his soft skills, attitudes and areas of interests. One of the areas they will look into is his ability to communicate especially in English. If he cannot communicate his wonderful ideas, nobody will understand him and then nothing will happen. Also, it will be good if the engineer gets industrial experience through some form of internship before he graduates," emphasized Dato' Wong. ■

