

COMMENTARY SERIES ON INDUSTRY TRANSFORMATION MAPS

A COLLABORATION BETWEEN CHANNEL NEWSASIA AND
MINISTRY OF TRADE AND INDUSTRY

You've heard about the Industry Transformation Maps, but not sure how you or your company can be part of the transformation journey? A series of commentary pieces penned by industry representatives will offer interesting insights on industry trends, and share experiences about how they have overcome challenges and captured opportunities to transform themselves and be future-ready.

In the fourth part of this series, Mr Melvin Yong, NTUC's supervising lead for the Electronics, Precision and Machinery Engineering Cluster and Member of Parliament for Tanjong Pagar GRC, shared on the importance of companies and workers collaborating with the Labour Movement and the Government to harness emerging technologies and accelerate transformation in the manufacturing sector. Read more below for the article.

COMMENTARY: MANUFACTURING CANNOT ADOPT A WAIT-AND-SEE APPROACH TO TRANSFORMATION

Companies and workers must be ready and committed to move ahead together with the Labour Movement and the Government to harness emerging technologies and hasten transformation in the manufacturing sector in Singapore, says Labour MP Melvin Yong.

By Melvin Yong (first published on CNA Online on 17 July 2017)

SINGAPORE: The world has seen three industrial revolutions which have shaped the course of manufacturing and dynamics in the global economy. The first industrial revolution was triggered by the creation of steam engines which helped to mechanise production, the second saw the onset of electricity and the birth of the assembly line, and the third took place in our lifetimes where manufacturing employed electronics and information technology to automate processes.

We are on the cusp of a fourth industrial revolution, or Industry 4.0. All around the world, we are witnessing the fusion of technologies that are blurring the physical and digital worlds in manufacturing – where automation and robotics are giving manufacturing greater lift, and machine learning fuelled by big data is powering this sector. While we hear the term Industry 4.0 thrown around in media reports, speeches and even conversations, we have some way to go before we can truly harness the emerging technologies and concepts that can bring manufacturing to the next level and fulfill a vision of Industry 4.0.

While great strides has been made over the past few years, Government agencies, companies and workers must all come on board to make concrete progress and accelerate Singapore's transformation in manufacturing. Failing to do may result in Singapore losing our competitive advantage in manufacturing, which is one of the major pillars of growth of Singapore's economy.



Workers at a manufacturing facility in Singapore.
(File photo: AFP/Roslan Rahman)

LABOUR MOVEMENT STARTED JOURNEY TO UNDERSTAND NEW TECHNOLOGIES

The Labour Movement has long started this journey to better understand Industry 4.0. The Metal Industries Workers' Union and Singapore Port Workers' Union, along with their union leaders, embarked on a two-year learning journey to understand smart technologies and the changes they will bring to the workplace. One such trip saw the whole group heading to Chengdu, China – which proved to be an eye-opening experience.

At the Green Point factory in Chengdu, which is part of the Jabil group of companies, robots have been introduced to handle difficult and dangerous tasks. This has helped employees better embrace change. At the Siemens factory there, an information and data analytics system is its backbone. Coupled with flexibility in its manufacturing process, the company has been able to produce new products in smaller batches.

Additionally, the system's programming abilities have also helped better sequence the manufacturing process and ensure quality control. Collectively, this has helped raise productivity to new levels in the company.

PRECISION ENGINEERING COMPANIES STILL CAUTIOUS

The Government has responded by charting out the priorities and pathways to make the Government's vision of Industry 4.0 a reality. On Oct 12, 2016, the Singapore Government launched the Precision Engineering Industry Transformation Map (ITM), one of the five ITMs under manufacturing, to tackle challenges faced by the industry. The ITM identifies new growth areas that will take Singapore into the future of manufacturing, and promises to create some 3,000 jobs by 2020.



Robots work alongside employees in the assembly line at a factory of Glory Ltd., a manufacturer of automatic change dispensers, in Kazo, Japan. (Photo: REUTERS/Issei Kato)

While it has been almost nine months since the launch, the precision engineering industry is still coping with challenges like manpower constraints in finding talent with the right skillsets, and the lack of development in technological know-how. There is also some hesitation on the industry's part. Many companies do not have the knowledge and are unfamiliar with the technology used, resulting in many adopting a wait-and-see attitude.

Many small- and medium-sized enterprises (SMEs) are also cautious of taking the next step forward and are waiting to model after the larger multinational corporations. As SMEs comprise 99 per cent of businesses in Singapore, there is an urgent need to encourage more companies to adopt advanced technology to build smart factories.

Government agencies can and need to do more to provide greater support to companies, particularly our SMEs, to harness technology, redesign work and improve overall productivity.

Beyond giving grants and subsidies, this requires measures that offer expertise to help SMEs understand, adopt and integrate specific technologies. Being unfamiliar with such new technologies, some form of hand-holding would be necessary to see through such projects from start to finish.

LABOUR MOVEMENT IS COLLABORATING TO EQUIP COMPANIES AND UPSKILL WORKERS

Meanwhile, as the manufacturing sector takes time to effect the business transformation, the Labour Movement has been quietly making headway in aiding workers in gaining the necessary skills. NTUC's Electronics and Precision and Machinery Engineering (EPME) cluster has been working closely with NTUC's Employment and Employability Institute (e2i) and the Economic Development Board to equip companies and workers with more knowledge on emerging technology, enabling them to better understand and incorporate these into their work.



Singapore Polytechnic is exploring the possibility of offering courses on Industry 4.0 and advanced manufacturing.

In 2016, to better understand and discuss the changes in the precision engineering industry, forums targeted at companies were organised by the cluster. To upskill and reskill our working people, the unions worked with e2i to engage the Robotics Application Centre of Excellence to develop a novice course on robotics and automation.

The Labour Movement is also just as serious about training younger Singaporeans before they enter the workforce, so that they are ready for Industry 4.0. Temasek Polytechnic and e2i collaborated previously to provide a one-year, part-time specialist diploma for robotics and automation.

The EPME cluster is currently exploring courses on Industry 4.0 and advanced manufacturing with Singapore Polytechnic, and a specialist diploma in the Internet of Things with Temasek Polytechnic. Moving ahead, the cluster will definitely continue to work with e2i, institutes of higher learning and relevant partners to expand outreach and create suitable training programmes on advanced manufacturing technology.

With concerted effort from all stakeholders, such collaboration can increase the speed-to-market of such training to help launch working people into new areas of growth in the industry. This would help build a pool of skilled workforce that can support the growth of advanced manufacturing in Singapore.

STAKEHOLDERS MUST TAKE OWNERSHIP FOR TRANSFORMATION

Singapore's ability to transform the manufacturing sector lies in our ability to implement the precision engineering ITM. This in turn will depend not just on the Government's efforts, but also workers, companies and the industry who must be ready to move with the times. The Labour Movement faces a challenge of helping our workers reskill and upskill fast enough for the industry, yet there may not be suitable jobs for them if the companies do not adopt the new technologies and transform their operations.

Transformation must be led by leaders in companies. To transform and move from low value-added to high value-added manufacturing, company management must take ownership and transform their organisation from the inside out. This involves a change in mindset and a willingness to learn. Companies must examine the core of their business, rethink manpower plans, and leverage technology to move together with their workers.



The precision engineering sector employed 94,000 workers and contributed S\$8.8 billion to the economy in 2014.
(Photo: Mediapro)

Like our unions, companies should consider going abroad to learn from best practices overseas as this may shed light on and provide insights to their companies' restructuring process. Other stakeholders like suppliers and companies of other adjacent services must also be ready to level up to collectively support the evolving industry.

All in all, as the economy gets more complex, the Labour Movement is evolving alongside to meet the changing needs of our workers. With change happening at an even faster rate than before, the whole ecosystem needs to be ready and committed to move ahead, together.

If the different stakeholders like the Government, companies, workers and adjacent services are able to take one small step forward, cumulatively, this will be a big step forward for Singapore's manufacturing industry. And only through working together can we make concrete progress in this journey and future-proof ourselves to ride the waves of Industry 4.0.

Melvin Yong is NTUC's supervising lead for the Electronics, Precision and Machinery Engineering Cluster. He is also Member of Parliament for Tanjong Pagar GRC.

