

Like this article?
Follow us
@Leaderonomics
on Facebook,
Twitter, LinkedIn
and Instagram.



ARE WE READY FOR SMART MANUFACTURING?

IT'S BUSINESS AS UNUSUAL

By LAY HSUAN, LIM
layhsuan.lim@leaderonomics.com

DIGITALISATION, robotics, automation, Big Data and cloud computing in our personal and professional lives have resulted in us being connected often with our smart devices like our phones, cars, television, and other appliances.

Digitalisation isn't just affecting end users like us; it's also shaking up the world of business and manufacturing, turning it upside down and inside out.

'Upside down' because no one can really foresee what other disruptive technologies are coming our way or how we are prepared for these changes. 'Inside out' because it involves leadership from within the organisation to turn these challenges into opportunities for growth and innovation.

For the longest time, manufacturing has provided many job opportunities for non-skilled workers. It has been a critical force that has helped developing nations to become high-income ones.

Some of us still see loads of blue factory buses – the "Bas Pekerja" – on Malaysian roads every working day, as workers are picked up from designated spots to industrial sites. We wonder if this sight will be a thing of a past in the near future as automation begins to take over some of the work we do.

A GLIMPSE INTO SMART MANUFACTURING

"This is nothing less than a paradigm shift in industry: the real manufacturing world is converging with the digital manufacturing world to enable organisations to digitally plan and project the entire lifecycle of products and production facilities." – Helmut Ludwig, CEO, Siemens Industry Sector, North America

I had the rare opportunity last month to visit some of Germany's leading manufacturing sites with a group of 25 media personnel from Malaysia under the K-Pintar-ESMT programme called "Industry 4.0 and Digitalisation Programme for Media", thanks to Human Resources Development Fund and the National Press Club.

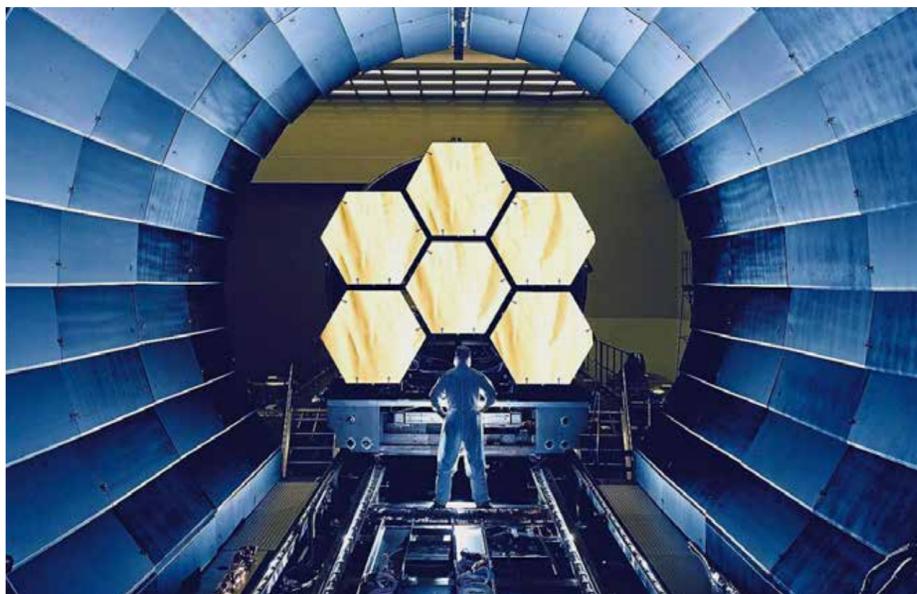
Some of the smart manufacturing trends that I observed include:

MASS CUSTOMISATION

With data integration, players in the automotive industry are able to bridge the relationships between themselves, their suppliers and their customers to offer a more modular experience of producing unique car variants.

The Mercedes-Benz manufacturing plant in Stuttgart helped us catch a glimpse of the future automotive industry, as automation and robotics came alive and worked with ultimate precision on fairly flexible production lines.

The machines worked seamlessly with humans to transform metal and various components into a complete body of artwork as a Mercedes car, custom-made for customers from around the world.



'SERVICIFICATION' OF MANUFACTURING

EOS, an e-manufacturing solutions company in Munich, further wowed us as we witnessed first-hand how Additive Manufacturing technology is used to build complex components for heavy industries using 3D printers, providing ideal business-to-business solutions.

In this digitalised facility, the machines worked autonomously, until you observe what is truly happening inside each working unit.

One of the 3D printers, which uses Direct Metal Laser Sintering, showed us how a laser beam dissolves the metal powder and how it is solidified into a cross-section of the component. According to our site coordinator, these machines 'communicate' with each other through cloud technology and industrial Internet of Things (IIoT).

As a solutions provider, EOS technology is simplifying the design and production of complex parts for use in aerospace, medical and other fields. It also enables its customers to benefit from its integrated services comprising consulting, training, research and development.

HOW READY ARE WE?

Across the globe, Industry 4.0 seems to promise increased efficiency, reduced costs and greater customer satisfaction. In Asean, Singapore is ranked at the top of the World Economic Forum's 2016 Networked Readiness Index, a key indicator of how countries are keeping up with the digital world.

Meanwhile, a 2016 survey conducted by the Federation of Malaysian Manufacturers and Malaysian Institute of Economic Research shows that only 12% of the respondents were fully aware of the Industry 4.0 wave. About 41% were somewhat aware, 28% need more information and 19% were not aware at all.

ARE WE IN DANGER OF BEING LEFT BEHIND?

Malaysia's low awareness and adoption of Industry 4.0 aren't

necessarily due to ignorance, but a real business decision on whether the market size or production is big enough for them to embark on these changes, according to Second Minister of International Trade and Industry (MITI) Datuk Seri Ong Ka Chuan.

Other industry experts have opined that our slow uptake could be due to industry players grappling with funding challenges, mindset shift and low expertise. We are, essentially, still at the 2.0 level (mass production, assembly line) although the global manufacturing in the electrical and electronic sector, for example, is fast evolving with Big Data, IIoT and cloud computing.

What can we do to drive a digital mindset in the industry?

1 IT STARTS WITH LEADERSHIP

Interestingly, in Singapore, it's the government that is driving digital innovation with initiatives such as Future Ready Singapore blueprint, Smart Nation programme and its e-Government Action Plan. In many other countries, it's mostly driven by the private sector.

Their integrated approach from the government, private and public sectors in a central committee aligns them towards various digitalisation efforts, and that includes participation from digital early adopters like Siemens and General Electric.

In a seminar on smart manufacturing and automation organised by the Malaysian Investment Development Authority (MIDA), Minister Datuk Seri Mustapa Mohamed said that MITI is consciously taking several strategic moves to spearhead the adoption of smart manufacturing and Industry 4.0 in Malaysia.

For example, the government is currently working with industry players on our very own National Industry 4.0 Blueprint, expected to be ready by the end of this year.

2 INFRASTRUCTURAL SUPPORT SYSTEM

As both the manufacturing and services sector contribute to almost 80% of Malaysia's gross domestic product, we need to build partnerships with international industry experts from Germany, Japan, Korea, China and Singapore to equip us with the technical know-how, and to collaborate on research and development.

MIDA, for one, is working with Rockwell Automation, a US-based industrial automation and smart technology provider to increase our competitive advantage.

Besides that, the Automation Capital Allowance, which was introduced in the 2015 budget through MIDA has helped various industry players optimise its automation initiatives. A case in point is a local clothing manufacturer which successfully increased its production volume by over 300%, while reducing defect rate by 80–90%.

MITI had also pushed for the inclusion of an incentive in the national budget to spur growth of the automation ecosystem among local manufacturers and accelerate the Industry 4.0 transformation in the country.

BRINGING IT TOGETHER

Smart manufacturing is a different ball game which requires deeper analytical thinking, partnerships, knowledge-sharing, communication and creative problem-solving. Not jumping on the bandwagon of Industry 4.0 means the end of our manufacturing's growth opportunity and innovation.

Our pace of Industry 4.0 adoption today doesn't justify how or what we can achieve in the near future. Steadily, with concerted efforts from all players to prepare Malaysia to enter the future of smart manufacturing, I believe we can all get there – and only if our belief corresponds with our willingness to embrace technology.

For now, let's get our act together, and get moving!

By CHANDRAN NAIR
editor@leaderonomics.com

AT a recent forum in Kuala Lumpur, the opening panel was invited to debate one of the leitmotifs of our age – the way in which technology and digital disruption are reshaping destinies in the Southeast Asian region.

Guided by the anchor of a global media channel, the panelists dutifully paid homage to this new religion and its scriptures. There were no questions about what the region's biggest challenges are, how we got there in the first place, no questioning of the mindless activities that have sprung from the internet, no alternatives that did not involve "the cloud".

The only worry about the future they discussed was the threat of cybercrime. They did not ask how many passwords are we going to need to protect our bank accounts and our data from the rewarding world of cybercrime, nor how children could be protected from the effects of on-demand pornography, nor who will buy the things made by robots when there are no more jobs to speak of.

It is time we pause and question this extraordinary bluff of tech disruptive progress in the developing world. There has to be a reality check. Given that these gatherings prize the idea of disruption, here is one "disruptive" idea: perhaps we can host these forums in the rural hinterland of Southeast Asia – or perhaps even just an hour's drive from the capital city.

There, one will quickly discover that the "Internet of Things" (IIoT) and "fintech" (financial technology) mean little to people who lack economic opportunities, rudimentary legal protection, security, basic sanitation and public health services, proper access to education or ready shelter.

To those living in the air-conditioned bubbles of the world's urban centres, it may seem like there really is a third or fourth industrial revolution that will help eradicate the world's most chronic problems. But it is certainly not the reality on the ground in most parts of the world. If vast swathes of our economies are plagued by pre-industrial problems, why are we pretending that a fourth industrial age is upon us?

Besides that, the Automation Capital Allowance, which was introduced in the 2015 budget through MIDA has helped various industry players optimise its automation initiatives. A case in point is a local clothing manufacturer which successfully increased its production volume by over 300%, while reducing defect rate by 80–90%.

MITI had also pushed for the inclusion of an incentive in the national budget to spur growth of the automation ecosystem among local manufacturers and accelerate the Industry 4.0 transformation in the country.

MITI had also pushed for the inclusion of an incentive in the national budget to spur growth of the automation ecosystem among local manufacturers and accelerate the Industry 4.0 transformation in the country.

BRINGING IT TOGETHER

Smart manufacturing is a different ball game which requires deeper analytical thinking, partnerships, knowledge-sharing, communication and creative problem-solving. Not jumping on the bandwagon of Industry 4.0 means the end of our manufacturing's growth opportunity and innovation.

Our pace of Industry 4.0 adoption today doesn't justify how or what we can achieve in the near future. Steadily, with concerted efforts from all players to prepare Malaysia to enter the future of smart manufacturing, I believe we can all get there – and only if our belief corresponds with our willingness to embrace technology.

For now, let's get our act together, and get moving!

TECH REVOLUTION IN ASIA

It is time we pause and question this extraordinary bluff of tech disruptive progress in the developing world. There has to be a reality check.

THE ANNUAL HAZE ISSUE

After all, if we look at the major transnational issues in the 10-member Association of Southeast Asian Nations (Asean), we can see that they are pre-industrial or industrialising problems. Take the yearly haze that blankets Singapore, Indonesia, Malaysia, and other countries, which is a strong contender for the biggest transnational problem faced by the region, yet rarely mentioned in discussions of Asean's challenges and future. But the haze is not caused by any industrial or post-industrial practice. The haze is instead sparked by "slash-and-burn" agriculture: a pre-industrial practice, but now carried out on an industrial scale.

PIRATES OF THE SOUTH CHINA SEA

Piracy in the South China Sea is another case where pre-industrial activity has re-emerged. Overfishing fuelled by over-consumption and often enabled by technology has dramatically reduced fish stocks around the world, forcing fishing boats in Asean to go further and further out to make a decent living in what was only a generation ago some of the richest fisheries in the world. For fisherman too poor to afford vessels large enough to make these long-range and lengthy voyages, their livelihood is gone. Some, facing this desperation, turn to piracy.

SPREAD OF DISEASE

Then there is the spread of disease, spurred by explosive population

growth and exacerbated by pre-industrial levels of sanitation in exploding urban centres and rural communities. Without modern sanitation and drainage systems, disease can easily spread amongst increasingly dense populations, especially as human contact with animals (domesticated and otherwise) escalates.

"Pre-industrial" diseases can run rampant in poor rural communities. Poor sanitation can even be linked to the rise of drug-resistant illnesses: doctors overprescribe cheap antibiotics (often fake) in response to an infection, which encourages the development of "superbugs", which now kill tens of thousands of newborns every year.

Returning to Asean, the dramatic spread of dengue fever should be a wake-up call. As early as October 2015, French scientists were arguing that the El Nino weather phenomenon was correlated with outbreaks of dengue fever, and that 2016's El Nino would be the most intense in almost two decades. *Outbreak News Today* has tallied over 230,000 cases of dengue fever in the first eight months of the year. There were 170,000 cases in the same period last year.

Many of technology's defenders would argue that these inventions would do wonders for the developing world. It is possible that robotics, artificial intelligence, and the like could have a great effect on how people live their lives in the developed world – though these effects will not necessarily be positive, as the debate over the hollowed-out middle class and the rise of menial labour shows.

But there is a pressing need to challenge the blind assertion that these advancements are not just appropriate, but a priority, for less developed countries, given their state of affairs.

INFORMATION MYTHS

The American theorist and writer Langdon Winner came up with the term "mythinformation", which he described as "the almost religious conviction that a widespread adoption of computers and communications systems, along with broad access to electronic information, will automatically produce a better world for humanity."



Winner was writing in the late 1980s, but his observation seems just as true, if not more so, today. From the discussions you often hear from tech enthusiasts, the "digital divide" between those who do and do not have ready access to computers and the internet is one of the most pressing problems in development today.

THE GREAT DIGITAL DIVIDE

We should be cautious of those peddling a tech-enabled utopia for the following reasons. First of all, many who support the greater use of technology often stand to benefit financially from improved access to the internet and digital technologies.

They sponsor the conferences, buy the ads and pay the experts, yet also want to be perceived as objective and qualified predictors of the future.

Second, they often lack experience with actual conditions on the ground in the world of the majority. After all, how can some of these tech gurus even start

questioning the value of IoT to the world's majority when they have no idea what it means not to have access to a toilet?

What do drones delivering your shopping matter to someone who must work all day just to grow enough food for his or her family? Those that push technological solutions often have a poor understanding of what the world's majority actually needs and wants, and their solutions are too shallow to address the real issues faced by the world.

Finally, the fact of life that the application of technology will have positive and negative effects, is rarely, if ever, mentioned by those who push it as a solution for almost everything. Often, "disruption" is portrayed as a good thing in its own right, with little thought given to what is being "disrupted" – does it need to be – and those being disrupted.

But wait there's more! To read the rest of Chandran's article, head to bit.ly/hardtalkasia



Empowering youth to make a difference

DIODE Camps are specially designed camps for youth aged 8-19 who are eager to fulfil their potential to be great leaders of the future!

Through DIODE, we aim to help youth take their leadership learning to the next level where they will be challenged to step out of their comfort zone and be positive influencers among their peers.



REGISTER TODAY!

For more info and to register, email diode@leaderonomics.com or whatsapp Nick at 017-2299288.