

The Magazine Of
The Institution Of Engineers, Singapore
February 2017 MCI (P) 003/03/2017



THE SINGAPORE ENGINEER

COVER STORY:

Digitalisation: The future of work in 2017 and beyond



FEATURES:

• Digitalisation • Electronics Engineering • Chemical Engineering



Digitalisation: The future of work in 2017 and beyond

by Manish Bahl, Senior Director, Centre for the Future of Work, Cognizant

The dawn of true digital business is just breaking and Asia Pacific is poised to corner a bulk of the economic rewards of business transformation.

Digital transformation will put USD 5.9 trillion in revenue up for grabs for companies across industries in the region, by 2018 [1]. There is a little doubt in the minds of business leaders that digital transformation is strategically important to their corporate and personal fortunes in the immediate future. But for winning in an economy of algorithms, automation and Artificial Intelligence (AI), businesses and people will require new skills, new tools and rethinking of the human-machine relationship.

It would be pertinent to understand the changing nature of work and commerce as well as the changing characteristics of success in the brave new world of 2017 and beyond.

Focus on human-centric skills

One of the profound impacts of the accelerated pace of digitalisation is that jobs and required skills will change significantly. Rote tasks, which still represent a substantial proportion of most people's day-to-day work, will morph into the machine, freeing up time and energy to ask better questions, craft better directions, and generate more impactful innovation. It means that the future of our work will be more strategic. So in order to beat the 'bots', one has to be a better person.

The work ahead will require us to double down on the activities where humans have, and will continue to have, an advantage over machines (for example, tasks requiring collaborative problem-solving, creativity, abstract thinking, adapting to change, and so on). It may sound counter-intuitive, but in a world of more pervasive technology, activities that humans do well will be even more important in 2020 than today. Analytical, communication and learning skills, as well as the

ability to relate to other people, are all vital for business success. But in the coming years, these very human traits, that enable us to do certain things naturally, but which computers struggle with, will become even more essential in our personal and work lives and for our businesses.

Being able to apply judgement, creativity and the human touch are all far outside the purview of current and near-future technologies, and this will remain the case for some years to come, even as the new machines become more capable. The work ahead will not be about 'man versus machines', but rather, about being better, smarter humans, to harness the potential of the digital economy.

Digitalisation is inherently collaborative and is about equalising power structures through the democratisation of information. Leaders who recognise that collaboration is the key to business success will be more in demand in the digital workplace. And contrary to what many leaders believe, collaboration cannot be achieved by simply installing software. Collaboration is not about platforms or technology; it is about engaging people in a shared journey that can transform the business from the bottom up and break down internal silos.

Digital leaders and laggards

In 2015, Forrester had predicted that 2016 would be a pivotal year for companies adapting to digitally savvy and



Mr Manish Bahl

empowered customers. Companies moving along the age of the customer path will begin to thrive, while laggards will begin the slow descent to failure [2].

With digital transformation sweeping through the global economy, businesses will see this gap continue to widen between organisations that are still waiting for digital technologies to prove themselves and organisations that have been quick to master key digital capabilities.

It is no surprise that digital leaders massively outperform digital laggards with each laggard losing almost USD 79 million a year for not keeping up with the digital competition in Asia Pacific. By the time laggards do join the digital revolution, they would have lost a sizeable portion of the market to those that embraced digitalisation earlier.

Digitalisation is moving from toys of convenience to powerful tools applied to work that really matters. Your work ahead is to apply this new crop of smarter technologies to remake your business activities - from sales and marketing to production and supply chain management.

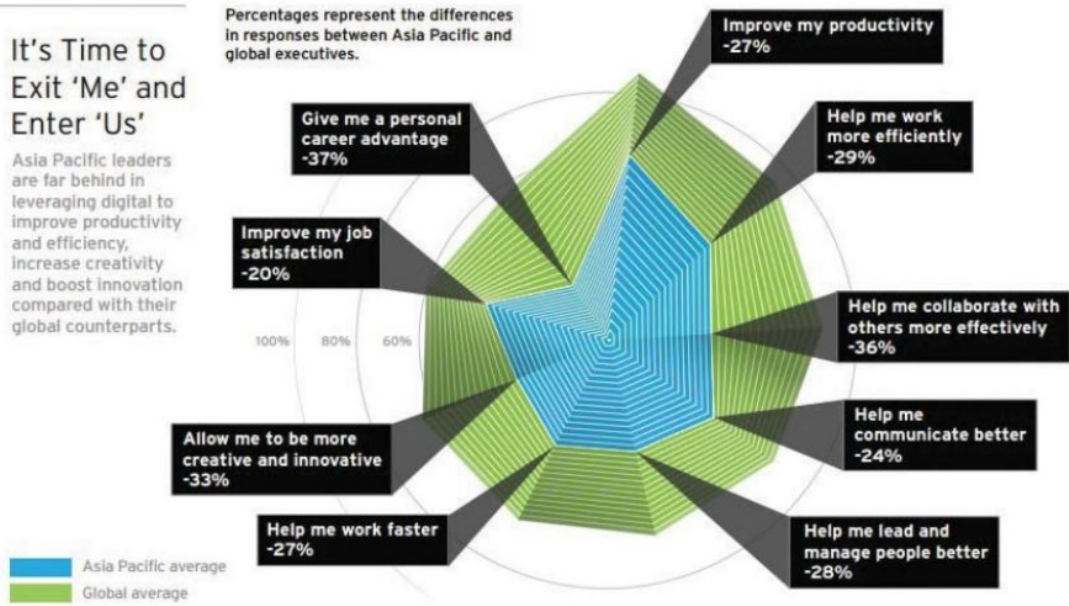
The Internet of Things

The Internet of Things (IoT) is all set to make big inroads in Asia Pacific. The Singapore government's Smart Nation Vision is already in the build phase, and is aimed at improving government operations, service delivery, healthcare, the environment and public transportation [3]. The Malaysian government anticipates that IoT will contribute USD 2.49 billion to the country's GDP by 2020, and the government launched the National IoT Strategic Roadmap in July 2015 to support the vision [4]. It is certain that the next decade of business advancement in the region will be driven by IoT.

It's Time to Exit 'Me' and Enter 'Us'

Asia Pacific leaders are far behind in leveraging digital to improve productivity and efficiency, increase creativity and boost innovation compared with their global counterparts.

Percentages represent the differences in responses between Asia Pacific and global executives.



Source: Cognizant Center for the Future of Work, 2016

Asia Pacific leaders need to catch up with those elsewhere in leveraging digitalisation.



The Internet of Things (IoT) will lead to the 'vulnerability of things'.



AI will become a reality and a real business.

That said, IoT is evolving when it comes to standardisation, and if not implemented properly, could present data privacy and security risks. In other words, IoT will lead to the 'vulnerability of things'. More connected devices mean exponential growth in the amount of personal and sensitive data generated. A single security breach on one device could infect an entire network, considering that multiple devices are interconnected on a home or business network.

This will make consumer trust more important than ever and, perhaps, even harder to achieve. A survey revealed that Asia Pacific respondents are significantly behind their global counterparts in prioritising cybersecurity for their business, indicating that they are not quite there yet when it comes to threats that may result from large-scale IoT deployments.

Fast forward 10 years, and businesses in the region may start to strengthen security, but by then, security standards elsewhere around the world would have moved far ahead in response to the dynamic digital security landscape. How much is at risk? It is estimated that cyber-attacks will cost businesses as much as USD 400 billion annually - which is larger than the GDP of roughly 160 of the 196 countries in the world [5].

Artificial Intelligence

We are already surrounded by AI and its impact on work, which will be explosive before the decade is out. The more evenly distributed present will spread into a much more unevenly distributed future. Over the next few years, every aspect of our commercial world (and much else, besides) will be affected by the new machines. In short, the future of work is the mirror image of the future of AI. If you are not making AI your business today, AI may well put you out of business tomorrow.

More businesses will tap into this opportunity by adopting new automation technologies to reshape their business processes and customer experiences to achieve higher productivity and superior business results. For example, collaborative robots or co-bots - the latest in the evolution of industrial robotics - are fast emerging as a new and powerful industrial tool.

AI will continue to transform our work as we know it, and will become the number one driver of business change, by 2020. It has already become the second most impactful digital trend, behind Big Data.

The work ahead

The incredible changes in the work ahead are, to a large extent, the result of the growing ubiquity and power of the new machines that drive modern

businesses forward. In 2017, businesses will need to face new technology trends head-on. In order to capitalise on the changes around, businesses require more than simply the application of the latest and greatest technology. The accelerated pace of digitalisation is creating entirely new ways of working, facilitated by the new tools.

Most companies have only scratched the surface of what it means to be truly digitalised. In fact, 'digital fear' signals a tremendous innovation opportunity. Embedding digital thinking and technologies into key processes will place companies on the fast track.

References

- [1] Cognizant: 'The Exponential Value of Going Digital'.
- [2] Forrester: 'Forrester Unveils Its 2016 Predictions For Business Leaders In Asia Pacific', 2016.
- [3] ComputerWeekly: 'Singapore's Smart Nation vision entices startups and IoT developers', 2015.
- [4] Tech in Asia: 'Factors Driving IoT Southeast Asia', 2015.
- [5] Fortune: 'Lloyd's CEO: Cyber-Attacks Cost Companies US\$400 Billion Every Year', 2015.

(Cognizant is a multinational corporation providing IT, consulting and business process services)