

# ASEAN-Australia Business Summit 2018

*CEO Forum consultation paper*



## Preparing for Digital Transformation and Industry 4.0

This paper seeks your input to inform and prioritise discussion at the Preparing for Digital Transformation and Industry 4.0 roundtable at the ASEAN-Australia Business Summit CEO Forum in March 2018. CEOs will recommend actions to Australian and ASEAN Leaders to improve the trade and investment environment for industry and digital services providers and identify areas for closer collaboration.

Please send your responses to [BusinessSummit@pmc.gov.au](mailto:BusinessSummit@pmc.gov.au) by 10 January 2018.

For the purposes of this paper digital transformation is “the investment in and development of new technologies, mindsets, and business and operational models to improve work and competitiveness and deliver new and relevant value for customers and employees in an ever-evolving digital economy”.<sup>i</sup> Industry 4.0, or the fourth industrial revolution, includes the trend of digitalisation in manufacturing, improved automation, machine-to-machine and human-to-human communication, artificial intelligence and continued technological improvements.<sup>ii</sup> These trends are driven by four disruptions: the astonishing rise in data volumes, computational power and connectivity; the emergence of analytics and business-intelligence capabilities; new forms of human-machine interaction; and improvements in transferring digital instructions to the physical world (e.g. advanced robotics and 3-D printing).<sup>iii</sup> Due to the broad nature of digital transformation and industry 4.0, this discussion paper is a conversation starter on opportunities for collaboration, rather than providing a comprehensive overview.

Australia is well placed to invest and work with ASEAN partners to prepare for digital transformation and industry 4.0. Research and development (R&D), skills and education will be key to any country’s successful transformation and Australia and ASEAN have a long history of cooperation in this area. Australian research institutions and higher education and vocational education and training providers already have a significant presence in the ASEAN region and are investing in specialised, world class facilities. There is considerable scope to expand this collaboration further.

Digital transformation and industry 4.0 will also require new rules of the road. Digital trade standards are key to the future of manufacturing and global value chains in the region. They will underpin the benefits of new technologies utilising big data, the internet of things and artificial intelligence (AI). Cyber security will also require close cooperation across the region and between governments and the private sector. The ASEAN-Australia New Zealand Free Trade Agreement (AANZFTA) is a high quality, comprehensive trade agreement that provides an excellent framework to further cooperation in these areas.<sup>iv</sup> The Regional Comprehensive Economic Partnership (RCEP) agreement currently under negotiation, when concluded and brought into force, will provide a modern, comprehensive agreement that will build upon AANZFTA to develop electronic commerce cooperation within the region.

ASEAN has architecture in place to promote digital transformation and trade. In 2015, the ASEAN Economic Community was formed to facilitate greater economic

integration and cohesion, whilst the ASEAN Single Window aims to drive increased cross-border trade.<sup>v</sup> Under the [ASEAN Economic Community \(AEC\) Blueprint 2025](#), member countries committed to embracing digital technology to enhance trade and investment, providing e-business platforms and green technology, and promoting good governance.<sup>vi</sup> Further, creating a digitally enabled region that is secure, sustainable and transformative is the goal of ASEAN's [ICT Master Plan 2020](#). The Plan has five key themes:

- an accessible, inclusive and affordable digital economy – ICT will be used to support digital inclusion of communities across the region;
- deployment of next-generation ICT as an enabler of growth;
- sustainable development through smart city technologies;
- supporting a single regional market to facilitate integration and lower business costs through ICT; and
- secure digital marketplaces and safe online communities to facilitate and promote regional digital trade.

The Australian Government is committed to creating a single window for trade, and has made digital technologies an essential part of its *National Innovation and Science Agenda* and the *International Cyber Engagement Strategy*.<sup>vii</sup> The Australian Government's [Global Innovation Strategy](#) is empowering Australian research institutions and businesses to strengthen connections with international partners to accelerate the transfer of research into commercial ideas. The Australian Government is also boosting the country's digital readiness through the [Digital Economy Strategy](#).<sup>viii</sup>

### Digital Services

ASEAN governments are investing heavily to develop Southeast Asia into a digitally connected, innovative and entrepreneurial region to support further social and economic integration. ASEAN's citizens are seizing the digital opportunity due to cheaper and more accessible devices and improved connectivity, creating the world's fastest growing online market for goods and services. For example, the arrival of international mobile network operators to Myanmar in 2014 drove the fastest rollout of mobile phones in history.<sup>ix</sup> Despite this significant digital uptake, ASEAN countries remain at different stages of digital development, compounded by the gendered differences in access to and use of digital technologies.

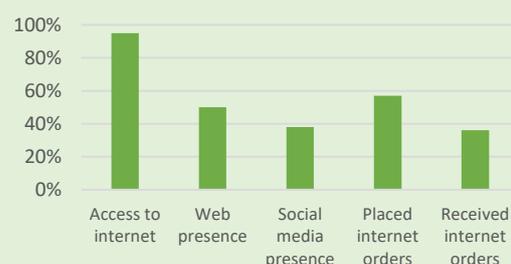
Australia's ranking as 18 out of 139 countries on the World Economic Forum's Network Readiness Index indicates that while much has been accomplished, more can be done to increase Australia's digital competitiveness. McKinsey estimates that the use of digital technology could raise Australia's GDP by roughly 10 per cent by 2025.<sup>x</sup> There is a significant opportunity for ASEAN and Australia to learn from each other.

### ASEAN and Australian digital trends<sup>xi</sup>

#### ASEAN digital footprint

- Southeast Asia is the world's 4<sup>th</sup> largest internet market, with 260 million users.
- 3.8 million new internet users come online every month, with forecasts of 480 million total users by 2020.
- ASEAN e-commerce is expected to grow 14% compound (annually) over the next five years.

#### Australian business digital footprint



Emerging technologies such as blockchain and Artificial Intelligence (AI) have the potential to increase openness, collaboration, mitigate risk and promote resource allocation.<sup>xii</sup> Singapore is a global leader in fintech with many other ASEAN countries, such as Thailand, Malaysia, Vietnam and Indonesia, actively developing the sector. Australia has established a Fintech Advisory Group to advise the Treasurer directly on issues important to Australia's fintech industry.<sup>xiii</sup> ASEAN and Australia have regulatory sandboxes, enabling regulators to monitor and foster fintech development.<sup>xiv</sup>

The retail sector is transforming due to changing technology, consumer preferences, sale channels, marketing approaches, barriers to entry, and supply chain and logistics strategies. The ASEAN retail sector is fuelled by the booming, young consumer class, which is set to more than quadruple across the region to 161 million households by 2030.<sup>xv</sup> In this environment, the digitalisation of end-to-end retail value chains is a priority.<sup>xvi</sup>

### **Industry 4.0**

Industry 4.0 is altering all sectors of the economy in ASEAN and Australia, which is increasingly evident in manufacturing.

The rise of 'smart factory' manufacturing will see the introduction of automation and data exchange, including cyber-physical systems, internet of things and cloud computing.<sup>xvii</sup> This has the potential to improve productivity, increase collaboration, benefit staff health and safety, enhance supply chain monitoring and data reporting and create competition among countries to unlock an estimated 30-40 per cent increase in productivity.<sup>xviii</sup>

The trend towards automation will increasingly affect ASEAN member states, where manufacturing accounts for an average 16 per cent of GDP (compared to 7 per cent of Australian GDP).<sup>xix</sup> Smart factories will increase the requirements for highly skilled workers with R&D and engineering capabilities. Machine learning, 3D printing, big data and intelligent robotics will also increase the opportunities for the higher and vocational education sectors to expand, due to the requirement for students and employees to 'reskill'. Countries and businesses will also need to enhance data, cyber and intellectual property security requirements and regulation.

Industry 4.0 is also likely to impact global and regional value chains. This may increase opportunities for small and medium enterprises (SMEs) providing niche and tailored solutions to enter the value chains of multinational corporations and global technology platforms.

### **Opportunities for collaboration**

As manufacturing evolves in the region, potentially shifting from China into Southeast Asia,<sup>xx</sup> increased ASEAN-Australia collaboration on addressing skills shortages and facilitating the adoption of common standards will enhance competitiveness.

Australia has introduced a series of initiatives under the Australian Government's National Innovation and Science Agenda, and made recommendations through the Prime Minister's Industry 4.0 Taskforce to drive innovation, investment and adoption of disruptive technologies across the economy.

Enhanced cooperation on cybersecurity challenges, R&D and emerging technologies would be beneficial. For example, Blockchain, and other distributed ledger technologies, have the potential to revolutionise the way business is conducted. The prospective applications of this technology are being explored by governments and industry alike. There are numerous potential benefits including increasing

transparency and reducing transaction costs, however there are also a range of unknowns. The greatest opportunities for Australia and ASEAN will come from ensuring it is uniformly standardised and widely adopted across the trade ecosystem.

Finally, there is room for collaboration on developing and adopting international standards promoting digital trade.<sup>xxi</sup> Australia's free trade agreements with ASEAN countries have dedicated chapters to facilitate e-commerce, enhance cooperation regarding the development of electronic commerce in the region, promote cross-border digital trade and build confidence in the online environment.

### Questions:

Where are the opportunities to increase collaboration? What worked in the past and what could be improved on in the future?

Is there an opportunity for Australia and ASEAN to collaborate and show leadership on the development of international digital standards?

How can we collaborate to drive innovation, R&D, investment and adoption of emerging technologies such as distributed ledger technology and AI?

How can we collaborate on international standards and improve cyber security?

Given the long history of collaboration on education and training between ASEAN and Australia, how can we build on this legacy?

How can we ensure that all population groups are included in the access, adoption and safe connection to digital technology?

### Best practice reform

The rapid development of digital technologies presents major opportunities for government, consumers and business, particularly micro, small and medium enterprises (MSMEs). However, the scale and pace of technological change is unprecedented and challenging for existing approaches to regulation.

**Question:** What are the biggest regulatory barriers to improving the digital trade and investment environment in ASEAN and Australia, with reference to the development and adoption of international digital standards?

When compared to larger firms, SMEs face challenges and barriers to adopting Industry 4.0 technologies. This is due to a lack of information and awareness of the opportunities offered by digital technology, difficulties with cross border data flows, the need for an innovative organisational culture, high installation and maintenance costs, lack of skilled workers, and low awareness of cyber security requirements.<sup>xxii</sup>

**Question:** How are Australia and ASEAN nations supporting SMEs (particularly women-led SMEs) to participate in Industry 4.0 technologies, markets and global value chains?

The movement towards robotics and AI may lead to the 'reshoring' of manufacturing to advanced economies, which risks leaving Asia and ASEAN in a middle income trap. Australia has an increasingly ageing population, which is placing an increased burden on the tax and welfare systems.

**Question:** How do you recommend taxation and welfare systems evolve as Industry 4.0 takes hold?



## About the ASEAN-Australia Business Summit CEO Forum

On 17-18 March 2018, the Prime Minister of Australia will host ASEAN Leaders in Sydney for the ASEAN-Australia Special Summit. A Business Summit and Counter-Terrorism Conference will report to Leaders on advancing business cooperation and combating the threat of terrorism.

On 17 March, the Business Summit CEO Forum will bring together senior figures of leading Southeast Asian and Australian companies. Participants will discuss areas for closer collaboration and economic integration in areas including agri-food supply chains, energy, skills, digital transformation, infrastructure, tourism destination development and aviation. Recommendations will be reported directly to Leaders during their Summit the following day.

- <sup>i</sup> Brian Solis, “The 2017 State of Digital Transformation”, *Altimeter*, 2017, URL: <[http://www2.prophet.com/2017-state-digital-transformation?utm\\_source=prophet&utm\\_medium=thinking&utm\\_campaign=2017-state-dt](http://www2.prophet.com/2017-state-digital-transformation?utm_source=prophet&utm_medium=thinking&utm_campaign=2017-state-dt)> (17/11/2017).
- <sup>ii</sup> Department of Industry, Innovation and Science, “Industry 4.0”, URL: <<https://industry.gov.au/industry/Industry-4-0/Pages/default.aspx>> (17/11/2017).
- <sup>iii</sup> *Ibid.*
- <sup>iv</sup> Australian Government Department of Foreign Affairs and Trade, “ASEAN-Australia-New Zealand Free Trade Agreement”, *Trade Agreements*, URL: <<http://dfat.gov.au/trade/agreements/aanzfta/pages/asean-australia-new-zealand-free-trade-agreement.aspx>>
- <sup>v</sup> ASEAN Single Window, “What is the ASEAN Single Window?” URL: <<http://asw.asean.org/>> (17/11/2017).
- <sup>vi</sup> ASEAN Economic Community Blueprint 2025, ASEAN Secretariat, Jakarta.
- <sup>vii</sup> Australian Government Department of Foreign Affairs and Trade, *Australia’s International Cyber Engagement Strategy*, URL: <<http://dfat.gov.au/international-relations/themes/cyber-affairs/aices/index.html>>
- <sup>viii</sup> The Australian Government is creating a national ‘Digital Economy Strategy’ designed to set a roadmap for the government, private sector and community to build Australia’s digital competitiveness. Department of Industry, Innovation and Science, “Digital Economy”, *Innovation*, URL: <<https://industry.gov.au/innovation/Digital-Economy/Pages/default.aspx>>.
- <sup>ix</sup> Lex Rieffel, “Myanmar’s fast-paced mobile phone rollout”, Brookings, URL <<https://industry.gov.au/innovation/Digital-Economy/Pages/default.aspx>> (19/10/2016).
- <sup>x</sup> Simon Blackburn, Michaela Freeland, and Dorian Gartner, “Digital Australia: Seizing opportunities from the Fourth Industrial Revolution”, *McKinsey*, URL: <<https://www.mckinsey.com/global-themes/asia-pacific/digital-australia-seizing-opportunity-from-the-fourth-industrial-revolution>>
- <sup>xi</sup> Google and Temasek, ‘e-economy SEA: Unlocking the \$200 billion digital opportunity in Southeast Asia’, <<http://apac.thinkwithgoogle.com/research-studies/e-economy-sea-unlocking-200b-digital-opportunity.html>>, (27/5/2016), p. 6.
- <sup>xii</sup> The Hon Scott Morrison, “Backing Australia FinTech”, Australian Government – The Treasury URL: <<http://fintech.treasury.gov.au/>>
- <sup>xiii</sup> Ian Pollari, “Forging the future: Embracing fintech to evolve and grow”, *KPMG*, URL: <<https://home.kpmg.com/au/en/home/insights/2017/10/forging-the-future-with-fintech-fs.html>> (19/10/2017).
- <sup>xiv</sup> Monetary Authority of Singapore, “ASEAN Financial Innovation Network to support financial services innovation and inclusion”, *Media Releases*, URL: <<http://www.mas.gov.sg/News-and-Publications/Media-Releases/2017/ASEAN-Financial-Innovation-Network-to-support-financial-services-innovation-and-inclusion.aspx>> (16/11/2017).
- <sup>xv</sup> The Economist Intelligence Unit, “ASEAN cities: Stirring the melting pot”, 2016, p. 9.
- <sup>xvi</sup> Harold Dutzler, Benedikt Schmaus, Stefan Schrauf, Dr Axel Nitschke, Dr-Ing Peter Hochrainer, “Industry 4.9: Opportunities and challenges for consumer product and retail companies”, *PwC*, URL: <<https://www.strategyand.pwc.com/reports/retail-industry4.0>>.
- <sup>xvii</sup> Bernard Marr, “What Everyone Must Know about Industry 4.0”, *Forbes*, URL: <<https://www.forbes.com/sites/bernardmarr/2016/06/20/what-everyone-must-know-about-industry-4-0/#284a0d57795f>> (20/6/2016).
- <sup>xviii</sup> Shirley Santoso, “How can ASEAN nations unlock the benefits of the Fourth Industrial Revolution?”, World Economic Forum, URL: <<https://www.weforum.org/agenda/2017/05/how-can-asean-nations-unlock-the-benefits-of-the-fourth-industrial-revolution/>> (10/10/2017).
- <sup>xix</sup> This is averaged across member states. The World Bank, “Manufacturing, value added (% of GDP), (11/11/2017), URL: <[https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=CN&year\\_high\\_desc=true](https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=CN&year_high_desc=true)>.
- <sup>xx</sup> Deloitte, “Advancing the ASEAN Economic Community – The Digital Economy and the Free Flow of Data”, US-ASEAN Business Council, (2016) URL: <<https://www2.deloitte.com/.../sea-about-aec-digital-economy-free-flow-of-data-2016>> p. 11.
- <sup>xxi</sup> Australia’s International Cyber Engagement Strategy, op. cit.
- <sup>xxii</sup> Schroder, C 2017 “[The Challenges of Industry 4.0 for Small and Medium-sized Enterprises](#)” Friedrich Ebert Stiftung (23/11/2017). See also, Australian Government Department of Industry, Innovation and Science, “[SME Digital Capability: Discovery Report](#)”. (September 2017)