Getting the most out of Industry 4.0

ASEAN countries must lay the groundwork for an adaptive ecosystem for the digital economy to thrive

By RIZQY ANANDHIKA

From artificial intelligence and robots to big data and clean energy, disruptive technologies are rapidly redefining our lives, businesses and economies. In our interconnected world, the growing influence of Industry 4.0 should compel countries to prepare for change.

Member countries of the Association of Southeast Asian Nations (ASEAN) are advised to focus on the new technologies related to the digital economy.

However, to successfully do so requires overcoming a few key challenges: Ensuring that necessary regulation and public infrastructure is in place, developing human resources and intensifying mutual cooperation.

Industry 4.0 promises a revolutionary new paradigm for economic production that employs cyber-physical production systems, including online networks of sensors, machines and information technology systems that span entire value chains.

These sophisticated new systems boost productivity and create levels of efficiency that were not imaginable just a couple of years ago. But these benefits also come at a cost from potential labor-market disruption.

This revolution started decades ago, but there were no sure signs of the domination of technology-based industries until recently.

China's e-commerce now leads worldwide while India's own Silicon Valley has emerged in Bangalore. To survive global competition, ASEAN countries should prepare an adaptive digital economy ecosystem as the foundation to participate in Industry 4.0.

The increasing levels of Internet penetration in ASEAN provide a strong basis for this participation. According to a Google-Temasek survey last year, 260 million individuals in the ASEAN region have regular access to the Internet.

This is projected to increase to 480 million by 2020. With the average annual GDP growth rate standing at 4.9 percent in 2016, ASEAN has one of the highest regional rates in the world.

Of the region's population of more than 600 million people, more than 65 percent are of productive age, with a rapidly expanding middle class. These factors have driven a massive increase in demand for online media, travel and e-commerce services.

In 2015, the value of these services in the region stood at $31 billion. This is expected to increase by 6.5 times by 2025.

However, despite this potential, a number of significant challenges remain, primarily related to government regulation, public infrastructure and human resource development. To address these challenges, the governments of ASEAN countries must develop appropriate legal frameworks.

In particular, these must prevent the emergence of monopolies resulting from the 'winner-takes-most' nature of the digital economy.

Governments should also play a role by developing information and communication technology (ICT) infrastructures.

According to the *Global Competitiveness Report 2016-2017* released by the World Economic Forum, there is wide variation in the quality of infrastructure available to people in different ASEAN countries corresponding to each nations' different levels of economic development.

In the less-developed nations, governments often regard ICT connectivity as tertiary infrastructure, with greater priority given to the development of primary infrastructure, including roads, basic electricity, clean water and agricultural irrigation facilities.

However, governments could utilize public-private partnerships (PPP) to enable the development of ICT infrastructure without diverting public resources from essential primary infrastructure.

For example, Malaysia established a PPP to develop a high-speed nationwide broadband network, while Singapore established one to provide free public Wi-Fi.

The ASEAN PPP models for ICT formed an integral part of the ASEAN ICT Masterplan (AIM) 2015 — a framework for the development of ICT in the region from 2010-15.

The other challenges are related to the limited human resources. To address this, governments could encourage private sector participation by supporting domestic digital industries through the provision of public co-working spaces, improved higher education, training, competitions and boot camps.

Fiscal incentives could be implemented selectively but governments could also promote digital startups through loans and financial facilities through banks, angel investors, venture capital, peer-to-peer and crowdfunding systems.

While technical skills are extremely important to enable the development of digital societies, widespread Internet literacy is equally important for its uptake.

Governments could implement services to introduce people to the Internet, while education should be provided for micro-businesses to benefit from access to information and new markets.

All of these efforts by ASEAN governments can be optimized by mutual cooperation. Earlier initiatives, such as AIM, were formulated to foster this cooperation and to develop the digital economy throughout the region by defining general principles.

AIM 2020 focuses more on implementation issues, including the adoption of sustainable ICT systems, the development of smart cities, ICT investment facilitation, open data systems, cybersecurity and cloud computing platforms.

It is important to note that Singapore has expressed its commitment to emphasize the digital economy under its ASEAN chairmanship in 2018. Through regional integration, ASEAN nations will be able to share experiences and learn from each other to address the challenges that constrain development. Global connectivity accelerates the spread of information and knowledge, thus increasing the feasibility of technological adoption.

If the region can further focus on supporting the ecosystem for the digital economy, and at the same time attract talent via regional cooperation, ASEAN nations will be on track to fully benefit from Industry 4.0.

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