FACT SHEET

ASEAN IN TRANSFORMATION: HOW TECHNOLOGY IS CHANGING JOBS AND ENTERPRISES

MACROECONOMIC FACTORS

- ASEAN population: 632 million as of 2016
- Rising middle class: ASEAN’s middle class is expected to almost double from 67 million in 2014 to 125 million by 2025.
- Relatively low enrolment in science, technology, engineering and mathematics (STEM) subjects, which are projected to create better career opportunities in view of increasing technology uptake.
- According to the ILO study, 56 per cent of all employment is at high risk of automation. Women are at higher risk of being displaced from their jobs. In the Philippines and Vietnam, the risk is 2.3 to 2.4 times greater than their male counterparts, and in Thailand, 1.5 to 1.6 times greater.

SUMMARY OF KEY SURVEY FINDINGS:

Students in ASEAN-10:

- Are optimistic about the future: students say 2025 will bring greater opportunities for good work for young women (63%), starting a business (58%), interesting and rewarding work (58%), productive and well-paid work (56%) and maintaining relevant skills (54%).
- Top career choices:
  - Male students: ICT (14%), finance or insurance (9%), manufacturing (8%)
  - Female students: Finance or insurance (11%), ICT (10%), arts and entertainment (8%)

Business in ASEAN-10:

- Not at the forefront of technology adoption: less than 16% protect IP, around 20% invest in R&D.
- Technology is seen as a positive enabler: over 50% agree that technology will increase domestic sales, labour productivity, profits and number of highly-skilled workers employed.
- Affordability and skills are the biggest obstacles to technology implementation.
- Skills most important: technical knowledge (40%); teamwork and communications (30%).
- Skills most difficult to find: strategic thinking and problem solving (32%); technical knowledge (27%); innovation (25%); creativity (25%).
• Enterprises think 2025 will bring: rising domestic demand (39%), rising exports within ASEAN (27%), technological advances (26%), more skills among local workers (24%).

IMPACT ON FIVE SECTORS IN MANUFACTURING AND SERVICES

MANUFACTURING

Automotive and auto parts
• The sector employs more than 800,000 workers in ASEAN.
• Disruptive technologies: electric and hybrid electric vehicles (EVs/HEVs), advanced, lightweight materials, autonomous vehicles and automated robotic manufacturing techniques.
• Automation and robotics will have the biggest impact on jobs. Of the five sectors examined, it is the most advanced in implementing robotics and automation in ASEAN. Cobots (collaborative robots) are increasingly involved in the automotive sector.
• Hiring demand is expected to shift away from low skilled jobs to higher skilled talent. Manufacturers will seek higher skilled talent ranging from autonomous driving engineers to sustainability integration specialists.
• As ASEAN consumers’ disposable income rises, there will be increasing demand for higher-end cars, with electrical components integrated in them.

Electrical and electronics (E&E)
• One of ASEAN’s most prominent sectors, employing more than 2.5 million workers.
• E&E sector is directly or indirectly connected to almost every other industry – therefore trends in the sector have far-reaching effects.
• Disruptive technologies: robotic automation, 3D printing and the Internet of Things (IoT).
• Robotic automation is human-centric – aids workers rather than replace them.
• Not “if”, but “when”: technology will improve in terms of increased perception, flexibility, dexterity and adaptation to new duties and become more affordable. The predicted increase in 3D printing makes displacement of jobs possible, particularly lower skilled jobs. 3D printed circuit boards are expected to be commercially available by 2018.
• Increasing prevalence of the IoT, connected devices, and wearable technology are expected to provide growth opportunities, in particular, to the semiconductor industry.

Textiles, clothing and footwear (TCF)
• The TCF sector employs over 9 million jobs in ASEAN, the majority being young women.
• Disruptive technologies: body scanning sensors, 3D printing, computer-aided design, wearable technology, nanotechnology, environmentally friendly technology and robotic automation.
• 3D printing does not require as much human input, it enables production to move closer to market.
• Smart clothes and more environmentally friendly manufacturing techniques present a different kind of challenge – lack of skilled talent.
Automated cutting machines and robots capable of sewing – called sewbots – will soon change the calculus of TCF production. Sewbots are likely to be deployed in destination markets such as China, Europe, and the United States. This could throw off garment workers in ASEAN.

Disruptive technologies will contribute to the displacement of lower-skilled workers and an increase in the demand for higher skilled technicians and engineers to serve niche apparel producers.

SERVICES

Business Process Outsourcing (BPO)

- ASEAN’s BPO activities predominantly take place in the Philippines. The sector employs approximately 1 million people in the Philippines.
- Disruptive technologies: cloud computing, software automation and knowledge process outsourcing.
- The voice component of the BPO sector could be automated through software robots using artificially intelligent algorithms that are capable of understanding and producing human speech.
- Robotic process automation (RPA) – a form of artificial intelligence – performs tasks quickly and learns from experience to improve execution. Considerable displacement of BPO workers, especially those working in call centres, is expected as RPA allows for the insourcing of back-office operations.
- Shifting services towards knowledge process outsourcing (KPO): KPO services are of higher value than BPO services e.g. fraud analytics and medical image analysis require highly specialized knowledge and skill sets.
- Cost benefits of BPO labour arbitrage (moving of jobs to low-cost countries) is around 15% – 30%. This figure is projected to be outmatched by 40% – 75% cost reductions achieved through automation.

Retail

- Employs an aggregate of 44.6 million workers in the region (16 per cent of its total employment and 44 per cent of jobs in the services sector).
- Disruptive technologies: mobile- and e-commerce platforms, the Internet of Things, cloud computing and big data analytics
- Local and traditional retail outlets form the bulk of the retail sales market across ASEAN. E-Commerce currently makes up less than 1 per cent of all sales regionally.
- Cloud technologies, big data analytics and the IoT promise to improve enterprise operations – optimizing inventory management, product tracking and shopping intelligence. Currently, retailers lose 4% of sales annually, due to stocks not being available. 35% – 45% of these losses could be recaptured.
- More than 90% of enterprises surveyed agree that labour and skills requirements will change with the adoption of technology in retail.
- As e-commerce and mobile retail becomes more entrenched, talent with web-based skills will be more in demand. Workers with sophisticated soft skills (e.g. customer service) are expected to be increasingly in demand.
Rising cost of labour, along with increased internet connectivity and rapid urbanization, are expected to play significant roles in transforming this sector.

References:
1. ASEAN Secretariat, 2016. ASEAN GDP grows by 4.6%, Available at: http://asean.org/asean-gdp-grows-by-46/