

MAXIMISING THE AI REVOLUTION IN SOUTHEAST ASIA

For that, the region must narrow the digital divide.

by Shoeb Kagda

Galang Ramadhan often speaks to his consultant when making strategic business decisions. The 30-year-old founder of start-up Agri Sparta is hoping to improve Indonesia's rice production yields to feed a fast-growing population. Galang's consultant however does not work for a management consultancy or even run a consulting firm. That's because his consultant is not human—it is none other than the biggest AI (Artificial Intelligence) sensation in recent memory, ChatGPT. "I often have really long conversations with ChatGPT on strategic business decisions such as going to market, adopting new technology, or understanding trends in agriculture," Galang noted. "The power of AI will save entrepreneurs and business leaders huge amounts of time and help them make better decisions," he added.

The rise of generative AI models such as ChatGPT is revolutionising traditional sectors such as agriculture, healthcare, and education in developing nations across Asia. Southeast Asian governments have taken steps in advancing AI, with Singapore leading the charge when it launched the National AI Strategy in 2019. Neighbouring countries such as Indonesia, Malaysia, the Philippines, Thailand, and Vietnam have all formulated their respective AI strategies.

According to a 2020 study by global consulting firm A.T. Kearney, more than 80 percent of the region is in the early stages of AI adoption with the communication and media sector at the forefront.¹ But other sectors such as financial services, transport and logistics, government safety and smart cities, and agriculture are also using AI to improve their service levels. The benefits of AI adoption have been clearly spelled out by A.T. Kearney, which noted that while AI use is still in the very early stages, it has the potential to contribute US\$1 trillion to the Association of Southeast Asian Nations (ASEAN) economy by 2030.

Indonesia's National AI Strategy 2020-2045 lays the groundwork for AI growth by promoting collaboration among the government, industry, academia, and the public.² The

government anticipates that AI will add US\$366 billion to the economy over the next decade and is therefore accelerating the adoption of technology in sectors such as healthcare, agriculture, and manufacturing. In agriculture, AI applications in crop monitoring, disease detection, and yield optimisation can revolutionise farming practices, especially in food production.

According to the country's National Research and Innovation Agency, Indonesians consume 114.6 kilogrammes of rice per person per year, one of the highest per capita consumption rates in the world.³ The country of 270 million people is the third largest rice producer in the world after China and India, producing nearly 35 million tonnes a year. However, it still needs to import between two and three million tonnes of rice per year to meet local consumption.⁴

Increasing rice production is thus critical in light of the country's growing population. However, with production dominated by smallholder farmers and not by private or state-owned enterprises, increasing yields has been a major challenge for the sector. But a raft of agri-tech start-ups is tackling that challenge by adopting innovation, AI, and deep tech to solve the country's food security issues. Start-up firms such as Agri Sparta Indonesia are working with farmers to improve yields by utilising multi-spectral cameras mounted on drones, and using AI to analyse data and identify fields that require intervention.

"We use computer vision and AI to monitor the rice fields and identify the health of the rice plants," said Galang. "Our basic premise is to help farmers uplift their yields on the current available production land."

He added that an Indonesian rice farmer currently produces five tonnes of padi per hectare per year. "Our goal is to raise that to 6.5 tonnes per hectare per year, and in the process, improve both rice production, as well as the income of the farmers." In a sector dominated by ageing farmers and low yields, the adoption of AI and other new technologies could potentially unleash an agricultural revolution in Indonesia.

BUILDING DIGITAL INFRASTRUCTURE

However, much work lies ahead if the region is to fully benefit from AI technologies as huge investments will be needed to build foundational digital infrastructure and data ecosystems. The region still lags behind the US and China in terms of investment in AI solutions.

According to the report released by A.T. Kearney and Singapore's EDBI, a subsidiary of the Economic Development Board, for the period between 2015 and 2019, AI-related investments in the US amounted to US\$155 per capita, while that for ASEAN was about US\$2. Meanwhile, China, with its much larger population, invested US\$21 per capita in 2019.⁵ The report surveyed over 110 AI users, providers, and investors, and interviewed representatives of more than 25 companies and government agencies across the region. It covered applications including machine learning, robotic process automation, smart robots, chatbots, virtual reality, computer vision, and speech recognition. Singapore stands out among its regional peers with US\$68 worth of AI investment per capita in 2021, but Indonesia, Malaysia, the Philippines, Thailand, and Vietnam all put in under US\$1 per capita.

Managing the large amounts of data needed to run AI is also a concern as many analysts and social commentators lament the potential loss of jobs in sectors that have been traditionally highly labour-intensive. Governments in Indonesia, the Philippines, and Thailand are still highly focused on job creation, given their larger, unskilled labour pools.

Youth unemployment, in particular, is a real challenge and a social time bomb for many countries even as they race to digitalise. According to the Asian Development Bank, the unemployment rate for young people in the region before the COVID-19 pandemic was 8.9 percent.⁶ That figure rose by 2.4 percentage points to reach 11.3 percent in 2022, which suggests that 25.4 million youths in ASEAN were left unemployed as a result of the pandemic. Finding jobs for these unemployed youth would thus be a major challenge for governments.

Equipping these youth with the requisite digital skills is therefore imperative if they are to be economically productive and contribute to the digital economy. A LinkedIn report titled *Jobs on the Rise in Southeast Asia* noted that at least 41 out of 67 job positions from 15 sectors require proficiency in basic digital skills such as the ability to operate basic office software, manage cloud computing, and digital communication skills.⁷

In Indonesia, for example, the jobs most in demand include content planners, data science specialists, and talent acquisition specialists, all of which require some degree of digital skills. Most of these skills, however, are not taught within the current education curriculum and must be acquired after leaving school. Universities

are waking up to the challenge and many now include a certain number of digital courses under the Kampus Merdeka programme, where students are encouraged to explore jobs outside their academic background. The Indonesian Ministry of Education, Culture, Research, and Technology also gives incentives to industries that provide tech curricula through the Independent Study Program.

There is no doubt that the application of AI and other digital technologies has the potential to positively impact millions of people in Southeast Asia, especially those who have been underserved or marginalised. From farmers to financial analysts, numerous professions can benefit, which in turn will drive economic growth and more importantly, foster greater inclusivity.

As ASEAN's digital economy continues to grow, greater focus will also need to be paid to cybersecurity and data protection, given the rising number of digital scams. Based on current projections, ASEAN's cybersecurity sector is projected to triple from US\$2.1 billion in 2023 to US\$6.7 billion by 2028.⁸ The AI market value is also expected to triple to US\$27 billion in 2030 from US\$8 billion in 2023.

Backed by over 460 million digital consumers and strong fundamentals, Southeast Asia's digital economy has plenty of growth potential.⁹ The region has young tech-savvy populations and rising Internet penetration. But for the region to fully realise this potential, it has to narrow the digital gap and the urban-rural divide and most importantly, improve digital literacy amongst its population.

The disruption in traditional sectors applies across the Southeast Asian region. According to the McKinsey Global Institute, if harnessed well, AI technologies have the potential to contribute to positive social outcomes in ASEAN such as greater financial inclusion, better preventive healthcare in remote areas, and improvements in the diagnosis of medical conditions, as well as the speeding up of new drug development.¹⁰

Shoeb Kagda

is Centre Director (Jakarta) at the Office of Overseas Centres, Singapore Management University

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