Indonesia's Approach to Navigating Global Dynamics in New Tech Acquisition

By Fitriani Bintang Timur

Image Credit: iStock.com/warrengoldswain

Indonesia's collaborative approach towards emerging technologies echoes ASEAN's. Nevertheless, it balances its aspirations with strategic ideals that prioritise sovereignty and independence.

Indonesia's embrace of emerging technologies, particularly artificial intelligence (AI), stems from the recognition of their potential to fuel economic development. Projections suggest that AI could contribute approximately US$366 billion to Indonesia's GDP by 2030, benefiting its population of 280 million and streamlining the delivery of increasingly digitalised government services. In the acquisition of new technology, just like other countries, Indonesia is faced with the dilemma of choosing between acquiring it from the United States (US), China or elsewhere. There is a widespread perception that where new technologies are acquired from will have long-term implications, impacting sustainability of technology access, availability of expertise, technology transfer, training opportunities and investment. To navigate this dilemma, Indonesia took note of its past and its practical needs.

Historical Factor and Foreign Alignment

Rooted in its post-colonial history under Dutch and British rule, as well as facing Western embargoes in the 1990s over human rights issues with Timor Leste, Indonesia places a high value on independence and sovereignty. This stance, shaped by past experiences, is reflected in its "independent and active" foreign policy doctrine, which emphasises non-alignment, strategic autonomy, and collaboration with Global South countries. This doctrine, reminiscent of the Cold War era, guides Indonesia's active engagement in international forums like the United Nations, Non-Aligned Movement, and Association of Southeast Asian Nations (ASEAN), where it advocates for confidence-building measures and capacity-building in the face of emerging technologies.

Indonesia's foreign policy doctrine serves as a decisive factor in its pursuit of technological independence. The country actively collaborates with major global AI players to

gain access to advanced technologies crucial for technical progress and economic development. Partnerships with leading companies in AI technology, such as **Huawei**, **Google**, Microsoft, Nvidia, and Cisco, have facilitated technology transfer and upskilling initiatives. Additionally, Indonesia incentivises AI investors by offering golden visas or residency permits, as demonstrated by the granting of such status to OpenAI CEO Sam Altman in **2023**, aimed at fostering the growth of the country's AI ecosystem. These collaborations serve as strategic entry points for Indonesia to transition from being solely an end user to becoming a manufacturer in the AI sector, enabling it to tap into the global supply chain.

A forthcoming study by CSIS Indonesia will show that while Indonesia engages with various international partners for its technological needs, it relies heavily on China as its primary hardware supplier. Major telecommunications infrastructure projects, such as Base Transceiver Stations (BTS), are predominantly awarded to Chinese firms like Huawei and ZTE due to their competitive pricing and technological capabilities. Conversely, in the software domain, the US remains the key provider, offering Indonesia software solutions and digital platforms. This dual partnership highlights Indonesia's pragmatic approach, balancing economic considerations with strategic imperatives.

However, Indonesia is acutely aware of the risks associated with over-reliance on foreign technology, particularly from major powers that are currently engaged in competition.

For instance, limitations on semiconductor sales by the US to China have implications for Indonesia's economy, as noted in the 2023 **report** by Ministry of Finance, prompting a more cautious approach to technology adoption and collaboration decisions.

To mitigate dependency on these major powers, Indonesia has diversified its pool of advanced technology suppliers. In addition to engagements with Chinese and American firms, Indonesia has forged partnerships with other international players. For example, procurement of **thirteen AI-enabled Ground Master 400 Alpha** surveillance radars from French company Thales and **twelve reconnaissance drones** from Turkish Aerospace exemplifies this diversification strategy. These acquisitions entail technology transfer, logistical support and training programs aimed at enhancing Indonesia's indigenous technological expertise.

Practical Needs

In practice, Indonesia's quest for technological independence is shaped by its domestic circumstances. The "**National Strategy for Artificial Intelligence**," published in 2020, outlines the country's objective to transition from a natural resource-based economy to an innovation-driven nation by harnessing advanced technologies such as machine learning, robotics, Internet of Things, augmented reality, and 3D printing. This strategy entails the development of AI applications across key sectors including services, bureaucratic

reform, education and research, food security, mobility, and smart cities.

However, Indonesia faces challenges in balancing competing demands with limited resources, necessitating careful allocation and strategic prioritisation of investments in technological infrastructure and human capital development. Despite the government's limited budget for innovation, depicted by a modest increase in R&D expenditure from 0.25 to 0.28 percent of GDP between 2016 and 2020 according to **World Bank data**, alternative financing approaches have been explored. The Quad Helix collaboration, involving government, industry, academia, and community partnerships, is one of Indonesia's efforts in this regard. The adoption of AI by **198 local start-ups** as of December 2023 bodes well for the development of national technological capacity.

To address talent development concerns, Indonesia promotes education in science, technology, engineering and mathematics (STEM) fields to bolster the number of AI-skilled workers. Based on **2021** data, AI-skilled workers comprised 39 percent in the information and communication sector, 28 percent in corporate services, and 27 percent in financial services. The establishment of Robotics and Artificial Intelligence Study Programs at the university level, branching out from existing Computer Science Programs, is seen as a viable solution to enhance the country's technological capabilities.

For enhancing infrastructure and data management, the government is currently constructing **four national data centres** to support AI-assisted digitalisation spread across strategic locations of West Java, Batam, Labuan Bajo and the new Capital Nusantara. Despite initiatives such as the launch of the SATRIA-1 satellite and the construction of around **five thousand** 4G Base Transceiver Stations (BTS), challenges persist in ensuring connectivity, particularly in **remote** areas. However, the development of BTS has been marred by **corruption allegations** involving government officials and vendors, highlighting issues of transparency and accountability.

In the realm of AI ethics, Indonesia is playing catch up through issuing guiding policies. In December 2023, the **Ministry of Communication and Informatics** (MOCI) and the **Financial Services Authority** (OJK) published AI ethical guidance for their respective purviews. These documents emphasise guiding norms of AI, including inclusivity, security, transparency, credibility, accountability, and the protection of personal data. However, frameworks for AI applications in socio-political contexts remain underdeveloped, as evidenced by the lack of regulations over the use of AI in the lead up to the **February 2024** Indonesian general elections, which contributed to the spread of disinformation.

Future Outlook

Faced with the dilemma of technological acquisition from major powers, Indonesia's

pragmatic approach seeks to balance economic considerations with strategic ideals while prioritising its sovereignty and independence. Looking ahead, maintaining strategic partnerships both domestically and internationally will be pivotal as Indonesia strives to harness the transformative power of technology for the benefit of its people and its future prosperity.

Fitri Bintang Timur is a Research Consultant at the Centre for Strategic and International Studies (CSIS), Indonesia. She tweets at @fitbintim.