THE LINUX FOUNDATION | Research

The Value of Open Source AI for APEC Economies

A Review of Industry, Academic, and Open Source Evidence

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The Value of Open Source AI for APEC Economies

AI adoption is estimated to boost productivity of some APEC economies by **up to 3.8 trillion USD** through 2038.

Open source AI is a powerful and cost-effective tool for small businesses in APEC to be **more productive, innovate faster,** and **compete globally.**

Open source AI can help address **demographic challenges in aging societies** through ongoing monitoring of daily activity and chronic disease and robotic-powered mobility supports.

APEC economies like the US, Japan, South Korea, and Singapore show strong AI investment through research and development activities, **signaling long-term national prioritization.**

APEC economies like Viet Nam and Indonesia are well positioned to leapfrog in their digital development due to **digitally native populations and accessible open source AI.**

Open models enable APEC economies to build AI infrastructure that **reflects local languages, norms, and values,** offering strategic ownership and independence.

The **APAC region leads in successful AI patents,** with South Korea leading globally in AI patents per capita, followed by Japan in fifth, Singapore seventh, and Australia fourteenth.

Across the APEC economies, **manufacturing, healthcare, and education** emerged as key sectors where open source AI could drive growth.

APEC economies such as Japan, the Philippines, Thailand, and Viet Nam are using AI for **disaster management,** such as weather forecasting, advance warnings, and relief coordination.

Experts across APEC economies are calling for collaboration around **open and localized datasets** to increase inclusion and grassroots innovation.

Building **APEC's AI talent pipeline** requires public-private collaboration that encourages practical and creative skills grounded in local industry and cultural needs.

Policy recommendations include developing a **national vision** for AI, building **local capacity,** and supporting local and **APEC-wide ecosystems.**

Contents

Executive summary

This report examines the adoption, investment, and impact of open source artificial intelligence across Asia-Pacific Economic Cooperation (APEC) economies,* and includes in-depth analyses of 11 APEC economies—Australia, Chinese Taipei, Japan, Indonesia, Malaysia, New Zealand, the Philippines, Singapore, South Korea, Thailand and Viet Nam. It draws upon academic literature, industry reports, and open source community insights to examine the current state of open source AI in APEC economies, as well as from a series of roundtables and interviews—which we refer to as dialogues—with over 100 experts from various APEC economies. It lays an evidence-based foundation to support policy and organizational decision-making and to direct further investment and research.

The report first reviews the economic benefits of open source AI. Evidence from surveys and economic modeling demonstrates AI's contribution to cost savings, productivity gains, and innovation, with open source AI amplifying these gains by reducing vendor lock-in and development barriers, especially for micro, small, and medium enterprises (MSMEs). Members of APEC are already seeing the economic value of AI integration, with estimates of productivity boosts reaching up to USD 3.8 trillion over the next 10+ years, as well as economic gains from complementary activities such as semiconductor manufacturing and data centre development. Dialogue participants emphasized that AI and open source AI drive economic growth by transforming data into competitive advantage, empowering SMEs, democratizing knowledge, enabling inclusive healthcare and education, and unlocking next-level productivity across industries.

Investment in AI is increasing across APEC, with USD 471 billion of private investment into AI in the United States and ranging from USD 1–15 billion across other APEC economies. Governments are also showing investment through national strategies, such as the United States' 2025 AI Action Plan, Singapore's National AI Strategy, and pro-innovation regulatory environments in Japan and Peru. Adoption rates show high integration, particularly open source AI, with over one-third of organizations in the US/Canada and Japan using open source in their AI stacks. However, gaps remain in organizational implementation, workforce preparedness, and regional readiness. While formal adoption of open source AI is not well understood, MSMEs and emerging economies are prioritizing openness for greater flexibility and cost advantages. Dialogue participants highlighted that accelerating AI and open source AI adoption requires government-led infrastructure investment and stronger multi-stakeholder efforts to raise awareness, build skills, and clarify the value of open models.

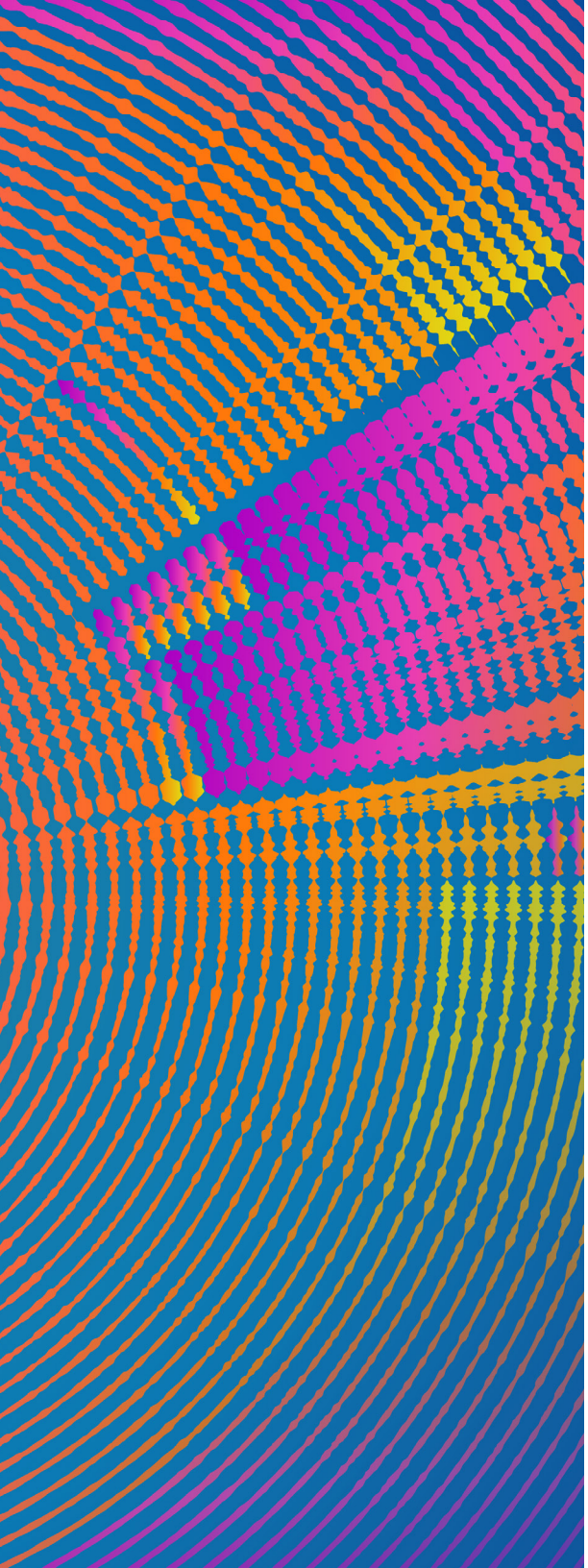
Beyond economic impacts, the report explores open source AI's societal impact, including its potential to promote social good and respond to challenges such as demographic change and natural disaster management. The technology can also serve as a strategic lever to develop localized applications so that economies can retain control over data and infrastructure, tailor technologies to local needs and culture, and avoid redundant investments. Dialogue participants underscored that open source AI fosters inclusivity, cultural adaptability, and knowledge sharing, empowers

* APEC comprises Australia, Brunei Darussalam, Canada, Chile, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, People's Republic of China, Peru, Republic of Korea, the Republic of the Philippines, the Russian Federation, Singapore, Chinese Taipei, Thailand, United States of America, and Viet Nam. This report excludes Hong Kong, the People's Republic of China, and the Russian Federation, where Meta's open source technologies are not available.

local entrepreneurship, and plays a vital role in supporting disaster preparedness and community resilience. Through open source, APEC economies with digitally native populations, such as Indonesia and Viet Nam, may be well positioned to leapfrog traditional development pathways.

Sector-specific impacts reinforce the transformative role of AI. These impacts vary depending on the economy's unique circumstances and competitive advantages, such as Japan's healthcare focus in response to its aging population, Thailand's applications in tourism and hospitality services, and Indonesia's agricultural applications. The operational efficiency of open source AI supports fast, nimble, and transparent growth and productivity to these sectors, which is vital to maintaining competitive advantage and addressing priority challenges.

The report concludes with in-depth analyses from 11 APEC economies, identifying opportunities, challenges, and recommendations for these local contexts. The report also provides four overarching policy recommendations for APEC: a national vision for AI that prioritizes models, tools, and data that are open, responsible, and secure by design; workforce readiness and capacity building through open source upskilling, reskilling, and incentivizing small-business competition; APEC-wide knowledge-sharing ecosystems to formalize open source AI guidelines on open source contributions and capacity building; and investment in national infrastructure that supports innovation, growth, and inclusion.



Introduction

From automation and content generation to faster innovation and broader discovery, artificial intelligence (AI) is transforming our activities in diverse and rapidly evolving ways. The technology represents a significant opportunity for organizations and countries around the world to realize productivity gains and economic growth. Nations are feeling its impact at an economic level and in social, cultural, and supranational systems.

At the center of this transformation is open source AI, with open models, open frameworks, and open tools becoming industry standards. In May 2025, the Linux Foundation (LF) published a report on the global economic and workforce impacts of open source AI.[1] It noted that 89% of organizations are adopting some form of open source technologies in their AI stacks, choosing open source primarily for its cost savings potential. By combining the cost savings of open source with the productivity gains of AI, open source AI presents a significant opportunity for growth, particularly for less resourced organizations such as small businesses. The report also found that openness leads to faster AI innovation and higher quality products through inter-organizational collaboration, widespread development and scrutiny, and knowledge sharing.

Defining open source AI

The definition of open source AI continues to take shape in the open source community. Its complexity derives from its various components, including software, data, model parameters, and documentation.[2] When we use *open source AI* in this report, we are referring to **open models in the domain of generative AI**, with the same definition as the May 2025 report:[1]

> **Open models** are defined in the Generative AI Commons' Model Openness Framework as machine learning models whose architecture, parameters (i.e., pre-trained weights and biases), and documentation are released under permissive licenses that permit their use, study, modification, and redistribution.[3]
>
> **Generative AI** refers to AI systems and models that create novel outputs, such as text, images, audio, video, and/or code, by learning patterns and distributions from training data rather than following explicit programming. Generative AI includes but is not limited to: language models, which enable tasks such as text generation and summarization; vision models, which enable tasks such as image generation and modification; and multimodal models, which are trained on data of multiple modalities, such as text, images, and audio, and accordingly enable the generation of outputs across different modalities, such as text-to-image creation or image-to-text reasoning. Among these, foundation models, which are characterized by their large scale, training on diverse datasets, and adaptability to various downstream tasks, play a crucial role in the development and application of generative AI systems.[3]

With those findings in mind, the questions became, "How are Asia-Pacific Economic Cooperation (APEC) economies adopting AI?* How might the technology affect them differentially because of their demographic, industrial, and economic differences? Where does open source fit into this growing technological ecosystem across APEC regions? This study is a first step in answering these questions, capturing existing evidence on the value of AI to APEC economies, and focusing on open source AI where possible. The evidence was gathered from a literature review of industry and academic research as well as a series of roundtables, interviews, and one-on-one exchanges—which we refer to as "dialogues" throughout—with experts in business, academia, government, and nongovernmental organizations from Australia, Chinese Taipei, Japan, Indonesia, Malaysia, New Zealand, the Philippines, Singapore, South Korea, Thailand, and Viet Nam. This report lays out the evidence of the technology's economic benefits to APEC economies, their investment in and adoption of AI, open source AI's ability to promote social good and technological localization, and the technology's sector-specific implications. The report ends with policy recommendations for APEC economies and areas for future research.

* APEC comprises Australia, Brunei Darussalam, Canada, Chile, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, the People's Republic of China, Peru, the Republic of Korea, the Republic of the Philippines, the Russian Federation, Singapore, Chinese Taipei, Thailand, the United States of America, and Viet Nam (**About APEC**). This report excludes Hong Kong, the People's Republic of China, and the Russian Federation, where Meta's open source technologies are not available.

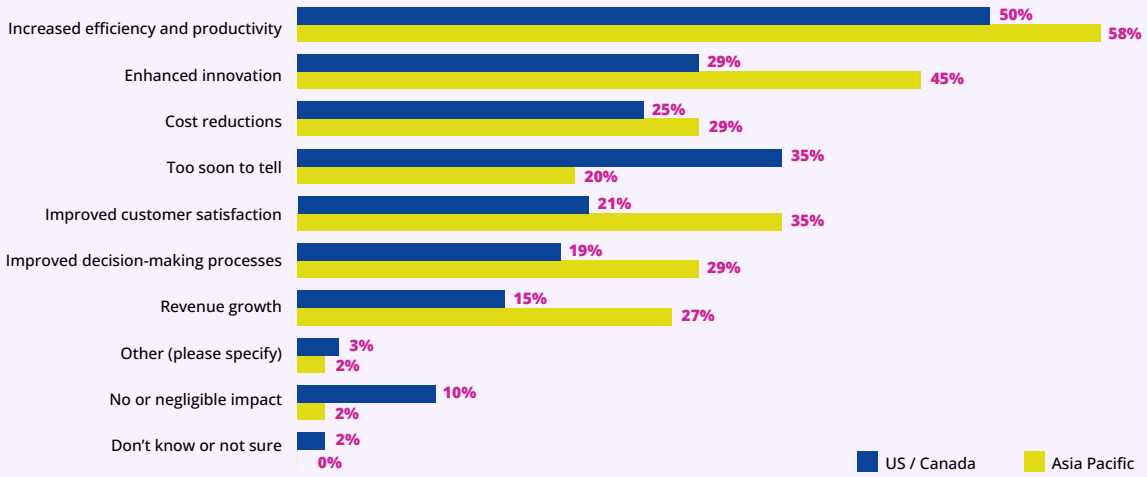
Economic benefits

AI—and open source AI in particular—represents significant cost savings, productivity growth, and innovation gains for adopters.[1] Various survey-based research has captured the economic benefits of AI to APEC economies. The LF's 2024 GenAI survey asked respondents on the benefits of AI to their organizations.[4] For the Asia-Pacific (APAC) region and US/Canada, increased efficiency and productivity scored highest, followed by enhanced innovation (see Figure 1). APAC respondents then prioritized improved customer satisfaction, while American and Canadian respondents ranked cost reductions third.

FIGURE 1: BENEFITS OF AI ACROSS REGIONS

What impacts has generative AI had on your primary use case?

Segmented by geographic location of organization's headquarters | 2024 Generative AI Survey, Sample Size = 297, Valid Cases = 297, Total Mentions = 653 | Source: The Linux Foundation (2024). 2024 Generative AI Survey. data.world. https://data.world/thelinuxfoundation/2024-generative-ai-survey



As a 2024 survey by the Boston Consulting Group (BCG) found, the revenue-generating and cost-saving opportunities from AI integration are key reasons for companies to invest in AI.[5] Estimates show that incorporating AI into work tasks could unlock KRW 654 billion (USD 476.3 billion) of productive capacity

for the South Korean economy, and JPY 148.7 trillion (USD 1.1 trillion) for the Japanese economy.[6,7] At a smaller but still significant rate, New Zealand could experience a NZD 76 billion (USD 46 billion) boost to its economy by 2038, and Australia, a lift of USD 53–127 billion by 2034.[8,9] Viet Nam is projected to gain USD 120 billion by 2040.[10] In the United States, the increased labor productivity is projected to translate into a USD 3.8 trillion boost to gross domestic product (GDP) by 2038.[11] The generative AI market size in Canada is expected to show a compound annual growth rate of 36.98% from 2025 to 2031.[12] In Chile, the 2024 Latin American AI Index projected that the use of AI in the workplace could accelerate the tasks of 5.69 million workers, with the potential to raise GDP by 1.2 points.[13]

AI's impact on productivity—and the subsequent time freed up to engage in other activities—is the key factor in economic growth. In New Zealand, AI could impact 38% of work tasks across the economy, raising productivity by 15.5% by 2038, and by a similar rate in Australia, with upwards of a 1.1% productivity increase per year.[8,14] Reducing a worker's time spent on routine tasks frees them up to invest their time in more complex, creative, or high-touch ones, which may explain the improvement in work–life balance and enjoyment in work.[15]

AI is also spurring innovation and growth for APEC economies as they pursue the technology and their role in the wider ecosystem. For example, Viet Nam's National Innovation Center is expanding partnerships with global universities and companies, encouraging investment, and developing its R&D capabilities in AI and in complementary sectors, such as its semiconductor industry.[10] Similarly, Mexico is attracting millions of dollars in investments from leading technology companies to develop semiconductor manufacturing facilities, with its sector projected to account for 8% of global AI chip production by 2025.[16] Economies are also developing their data center capacities, such as Malaysia's forecast to make up two thirds of the South East Asian market by 2035, Chile's USD17 million investment to create two supercomputing centers, and Canada's affordable and sustainable energy sources making it a key player in the development of AI infrastructure.[17,18,19] The impetus to strengthen an economy's own AI infrastructure, as well as its role in the global market, is causing a positive ripple effect in APEC economies.

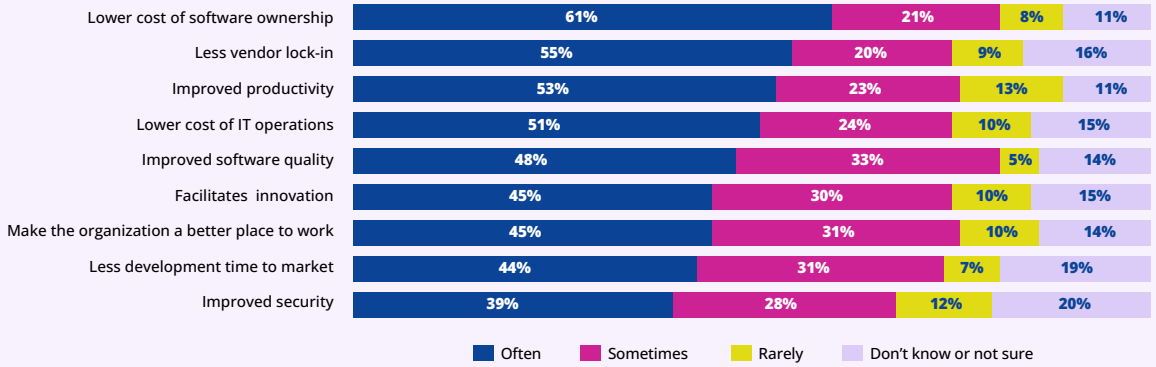
In contrast, the economic benefits of open source AI have not been as well studied in APEC economies. One LF report found that organizations in various APEC economies acknowledged the cost-effectiveness of open source AI, where 62% of survey respondents from US/Canada agreed that open source AI has a lower cost than proprietary AI, and 83% from APAC.[20]

Without existing studies, we can extrapolate the benefits of open source AI from the benefits of open source software (OSS), as well as from the dialogues. OSS gives organizations the opportunity to develop their technical capabilities with a lower cost of software ownership, less vendor lock-in, and improved productivity, while they maintain or improve the quality of their products—as respondents from APAC, Canada, and the United States showed in their ranking of OSS benefits in the LF's 2024 World of Open Source survey (see Figures 2 and 3).[21]

FIGURE 2: BENEFITS OF OSS USE FOR APAC ORGANIZATIONS

How often does using OSS deliver the following benefits in your organization?

Segmented by Asia-Pacific respondents | 2024 World of Open Source Survey, Sample Size = 264 | Source: The Linux Foundation (2024). 2024 World of Open Source: Global Spotlight. data.world. https://data.world/thelinuxfoundation

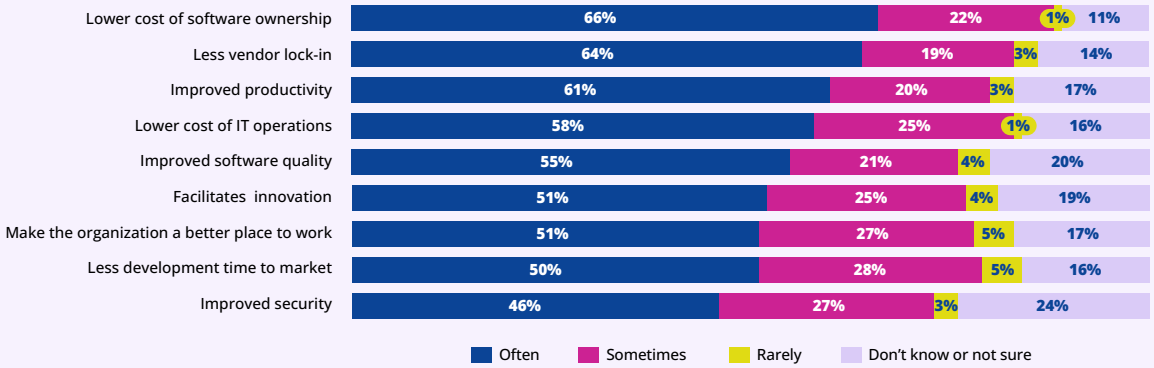


When combining open source's benefits with AI's productivity gains, open source AI presents a potentially transformative option for economies to reap the productivity and innovation benefits of AI without the cost of paying for a proprietary model or tool. As will be discussed in a later section, the lack of vendor lock-in allows organizations and governments to build flexible, resilient, and customized solutions, further enhancing its innovation and quality.

FIGURE 3: BENEFITS OF OSS USE FOR AMERICAN AND CANADIAN ORGANIZATIONS

How often does using OSS deliver the following benefits in your organization?

Segmented by US/Canada respondents | Sample Size = 315 | Source: The Linux Foundation (2024). 2024 World of Open Source: Global Spotlight. data.world. https://data.world/thelinuxfoundation



Research dialogue on economic benefits

In terms of the economic benefits of AI and open source AI, several themes emerged from the series of dialogues:

Data and AI skills as a competitive advantage:

Dialogue participants see their usage of data and AI as a competitive advantage within their countries, in the region, and worldwide. For example, a participant in Chinese Taipei said, "Many governments and businesses own and collect data but don't know how to create value from it. That role defines us—our ability to convert data into business value—in financial services, semiconductors, and healthcare. It has had a positive impact on stock price."

Empowering SMEs:

Open source AI helps SMEs in particular to optimize operations, improve service quality, and support the development of future fields such as open shared infrastructure that level the playing field and allow businesses without multimillion-dollar budgets to participate. More of them can leverage the power of science and technology to develop their own business models. Dialogue participants viewed open source AI as not just a technological connector but an economic one for MSMEs, a means of plugging into mainstream industry ecosystems.

Powerful knowledge tool:

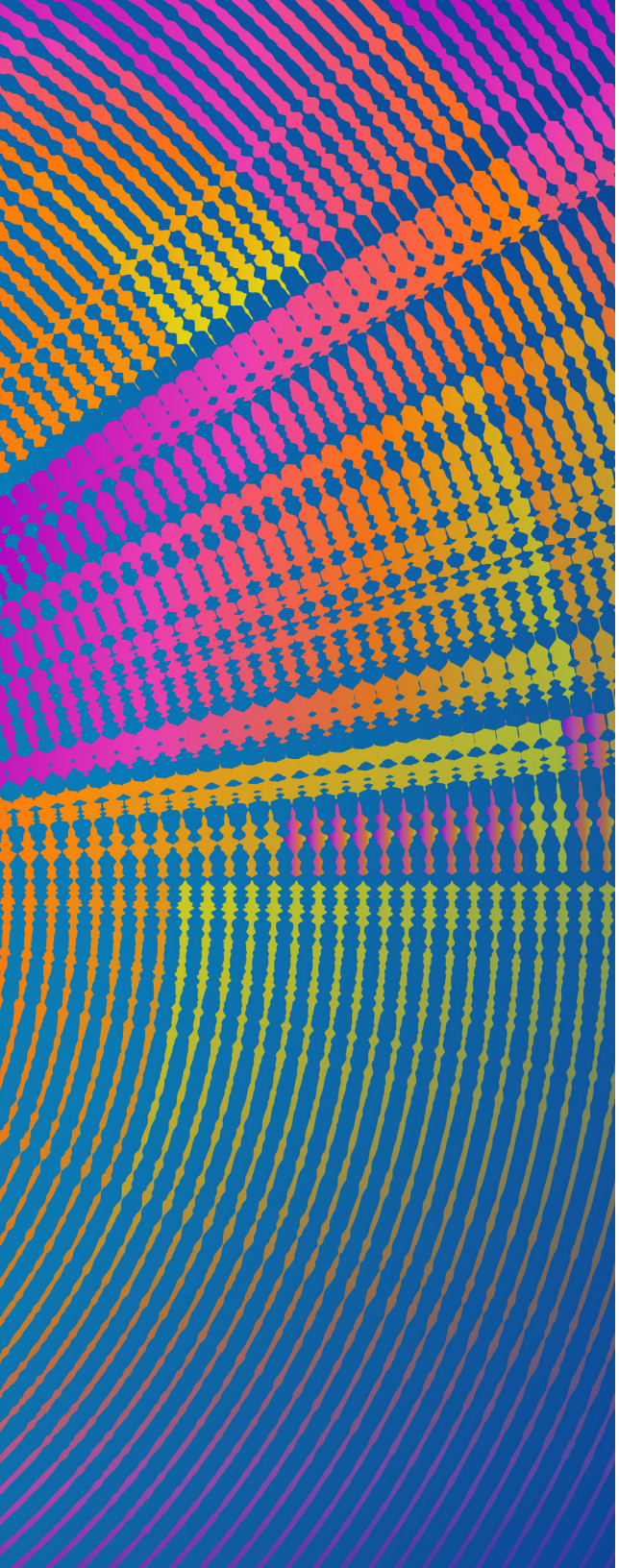
Dialogue participants uniformly valued AI, whether proprietary or open source, as a knowledge tool. According to one participant, "AI helps standardize knowledge that was previously siloed. It can help transform that tacit knowledge into explicit knowledge, making it easier for people to return after a break or for colleagues to support them." Many also viewed the open source AI community itself as a means of sharing knowledge, gaining new perspectives, and maintaining continuity. Said another participant, "If it is a black box, then it is difficult to make proposals. That open source AI provides transparency is another major advantage."

Inclusive solutions for healthcare and education:

Across the dialogues, participants described uses of AI in healthcare and lifelong learning where confidentiality, well-being, interaction, and accessibility were critical. AI proved effective in health monitoring, elderly care, and mental wellness regimens. AI tutors supported remote, diversely abled, and multilingual learners.

Next-level productivity:

For decades, digitalization has reduced economic friction and increased productivity. Across countries, dialogue participants identified how AI and open source AI would take it to the next level across sectors—in manufacturing through robotics and predictive maintenance, in agriculture through precision farming and optimizing resources like water and fertilizer, and in transportation, logistics, financial services, and supply chain management.



Investment & adoption rates

To take advantage of these benefits, APEC economies are investing in and adopting AI to varying but significant degrees. Various research shows strong investment and R&D in the technology. Over the past decade (2013–2024), Stanford's 2025 AI Index Report calculated USD 471 billion of private investment into AI in the United States, USD 15 billion in Canada, USD 9 billion in South Korea, USD 7 billion in Singapore, USD 6 billion in Japan, USD 4 billion in Australia, and USD 1 billion each in Mexico and Chile.[22] The International Data Corporation (IDC)'s 2025 AI Spending Guide found that the APAC region was expected to almost double its expenditure on AI between 2022 and 2025, from USD 17.6 billion to USD 32 billion, with a 2024 Deloitte survey projecting a five-fold investment increase by 2030.[15,23] According to the 2024 BCG survey, APAC countries have the highest rates of revenue invested and employee involvement in AI, closely followed by North America.[5] This investment signals the move from experimentation to organizational integration, as most companies are planning full transformation through AI.[5]

At the national level, several APEC economies have adopted pro-innovation policies, offering robust government support for AI. Singapore and Japan have developed comprehensive national strategies that strive to balance regulation with business, fostering an environment that encourages positive innovation.[24,25] In its 2025 AI Action Plan, the United States encourages the use and development of open source AI, with the goal of creating a supportive environment for open models.[26] As discussed in the dialogues, Malaysia implemented an AI Office in 2024 to coordinate policies, governance, and investments, and Peru has developed a regulatory framework for AI use that promotes innovation alongside safeguards for fundamental rights.

R&D activity is another important signal to understand APEC economies' investments in AI. Stanford's 2025 AI Index Report used various metrics to capture this activity, including publications, patents, and startups. The report calculated the number of highly cited publications by economy from 2021 to 2023, and found that the United States had the most, with Canada ranking fifth, South Korea ranking sixth, and Singapore tenth.[22] The APAC region leads in successful AI patents, with South Korea leading globally in AI patents per capita, Japan fifth, Singapore seventh, and Australia fourteenth. The United States ranks third. In Latin America, Mexico has filed the highest number of AI-related patents.[13] In 2024, the US had the highest number of newly funded AI companies (1,073), South Korea had 52, Canada had 51, Japan had 42, Singapore had 39, and Australia had 23.[22] Investment in Indonesia's AI startups grew 141% from 2020 to 2024, signalling expansion in this economy as well.[27] The high investment rates in Asian APEC economies, alongside the APAC region's greater positivity toward the benefits of AI (see Figure 1), indicate a high level of optimism, innovation, and prioritization in this region toward AI.

When it comes to technological adoption, AI is pervasive in organizations around the world, with 94% of organizations globally reporting some level of AI adoption in 2024.[1] Stanford's 2025 AI Index Report found that 82% of organizations based in North America reported using AI in 2024, up from 61% in 2023; APAC organizations fall just behind this rate, with 72% using AI in 2024, up from 58% in 2023.[22] The 2024 BCG survey found that 71% of respondents in Australia and New Zealand have adopted AI.[5] Mexico leads in adoption compared to the rest of Latin America.[13]

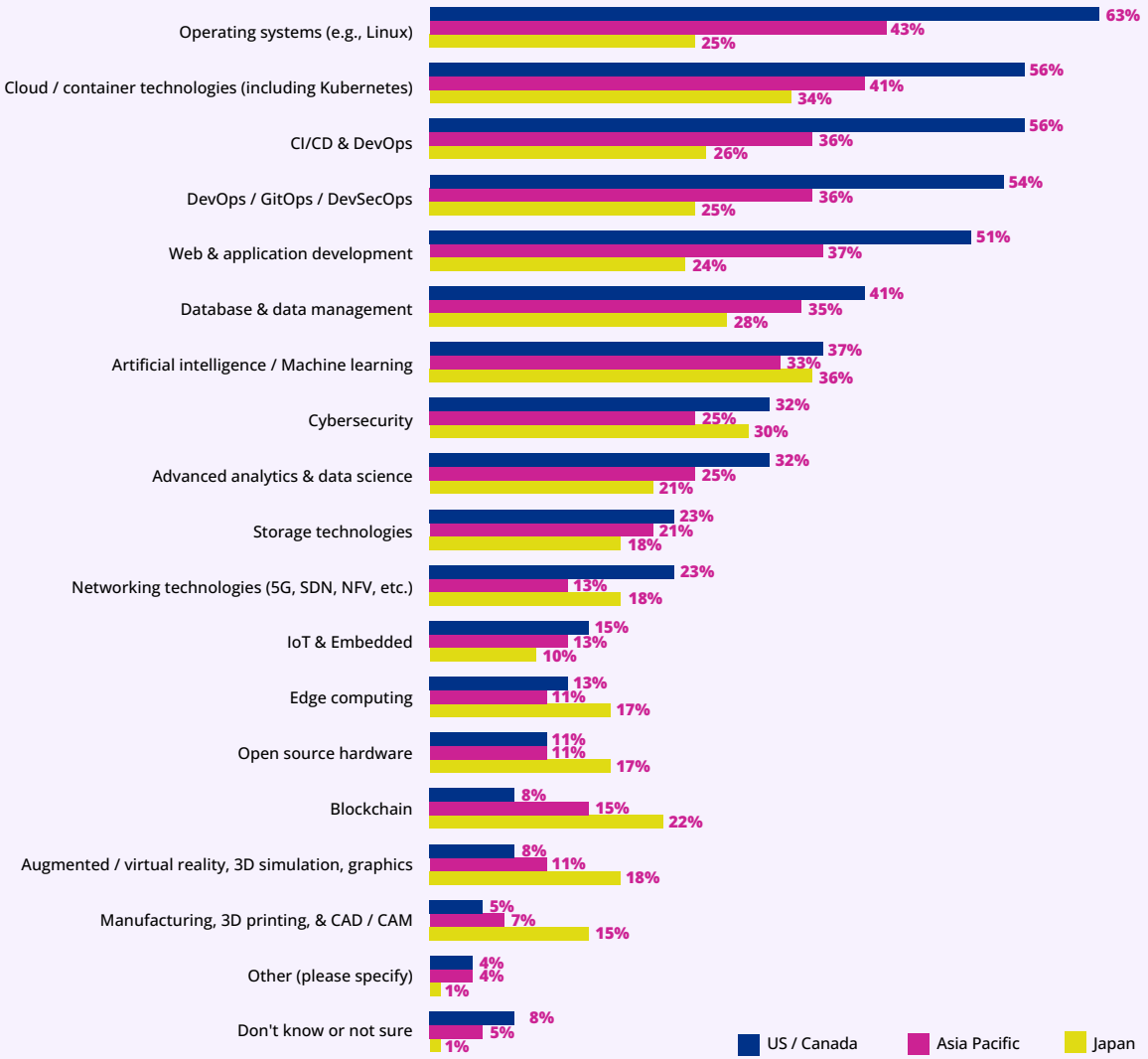
While we know that nearly two-thirds of organizations are using open models globally,[1] adoption rates for specific economies or regions of APEC remain scarce. In one research study, the LF's 2024 World of Open Source survey asked respondents in which technological areas they are using open source. Across APAC economies, 33% on average are using OSS in AI (see Figure 4). Japanese organizations in particular are using OSS most in AI and ML, followed by cloud technologies (see Figure 4).[21] From this data, 36% of Japanese organizations appear to use open source AI. Respondents in the US and Canada are using OSS in AI at a similar rate (37%), although they appear to use OSS at a much higher rate across their top 10 technology horizontals than Japan, as shown in Figure 4.[21]

Organizations also have strong intentions to use open source AI in Japan, Korea, the US, and Canada. As the LF's 2025 State of Tech Talent Japan report revealed, over a third of organizations in US/Canada (41%), South Korea (38%), and Japan (33%) plan to

FIGURE 4: OSS USE IN ORGANIZATIONS ACROSS TECHNOLOGY AREAS

In which of the following areas does your organization use OSS?

Segmented by geographic location of organization's headquarters | 2024 World of Open Source Survey, Sample Size = 901, Valid Cases = 901, Total Mentions = 4,627 | Source: The Linux Foundation (2024). 2024 World of Open Source: Global Spotlight. data.world. https://data.world/thelinuxfoundation



address their AI activities by leveraging open source frameworks, models, and tools.[28]

Although there is optimism and clear intent around AI implementation, organizations in APEC economies have considerable room to expand their investment and adoption, unlocking even greater value from AI technologies. 2024 research from Accenture and Microsoft shows that Singapore, New Zealand, and Australia have higher percentages of knowledge workers who use AI at work, while these same economies show lower percentages of workers who use employer-provided AI.[8] The 2024 Deloitte survey found that only 29% of Australian employees and 24% of Japanese employees have heard from their employers about generative AI.[15] This suggests a gap in formal organizational adoption and more informal use of the technology at work. To fully realize the benefits of AI technologies, organizations should consider implementing more formal integration plans and processes. Mexico, for example, is aligning itself with similar workplace integration goals, where 54% of respondents revealed that the integration of AI into work is a top priority.[29] In many APEC economies, the workforce is ready for adoption: in Peru, for example, 66% are excited about and 69% trust AI, ranking higher than the global average.[30]

Research dialogues on investment and adoption rates

In terms of the investment in and adoption rates of AI and open source AI, two themes emerged from the dialogues:

Infrastructure needs: Across the region, dialogue participants pointed out the infrastructure needs of various types of organizations, from SMEs, secondary schools, and smaller universities to smaller municipalities and rural communities. They identified a range of barriers to access, such as the high initial cost of computing infrastructure and data storage, the lack of high-quality human resources to deploy and operate AI, the lack of access to high-quality data, and limited financial mechanisms, tax incentives, and innovation investment funds. A majority of participants called for government leadership in investing in infrastructure, including workforce development.

Communications needs: By and large, dialogue participants agreed that multiple stakeholders—governments, academia, the private sector, and the open source AI community—could do more to raise awareness of the economic benefits and help organizations to understand how different open models served different needs alongside commercial models, and how open models stacked up against each other and commercial ones in terms of performance and purpose. Awareness building could include scholarship programs at the university level.

Societal impacts

Open source AI has many case studies in the realm of social good. Its ability to analyze, visualize, and generate data creates opportunities for disaster mitigation, sustainable energy use, climate change interventions, and medical interventions.[31,32] These applications rely on open and diverse datasets and tools to localize the output and effectively represent the affected population.

AI may also play an important role for APEC economies grappling with an aging population and decreasing fertility rate, such as Japan and South Korea. As Chang et al. (2023) explain, aging populations reduce the labor force, with fewer younger full-time workers and more older part-time workers, which could result in a 16.5% decline in output in South Korea from 2023 to 2050.[33] Japanese dialogue participants referenced this demographic change as one of the key challenges in their economy, where nearly a third (29.4%) of the population is over the age of 64.[34] The productivity gains from AI adoption could offset this reduction in output, where a shrinking workforce becomes more productive—as one-quarter of the South Korean workforce could leverage AI in up to 20% of its activities.[6] A more direct effect of AI is its integration into healthcare and elderly care. This includes wearable devices that monitor and predict health metrics, assistance with daily activities at home, monitoring of chronic diseases, and robotic mobility support.[35,36]

Many APEC economies are susceptible to earthquakes, hurricanes, floods, droughts, and wildfires, particularly as climate change worsens the effects of these disasters. To support early detection and disaster management, innovators have developed various AI applications to produce maps, analyze pattern data, identify vulnerabilities, and predict extreme weather and other catastrophes; to detect hazards, such as smoke and chemical leaks, and alert authorities; and to provide decision support and identify priority areas during the response phase.[37] Dialogue participants in the Philippines, Thailand, and Viet Nam all discussed the value of AI in preparing for and responding to floods and other natural disasters through weather forecasting and relief coordination. As Kuglitsch et al (2024) point out, trust in the model outputs is critical: transparent documentation, data sources, algorithms, and limitations or thresholds of the model can build public trust. According to dialogue participants, only open source AI offers this level of transparency.

Inclusion in economic growth

AI's transformative economic and societal potential warrants discussion of who will benefit from that growth. Various research has identified concerns about the unequal exposure to AI within the workforce of an economy—such as between women and men, or between higher and lower incomes, or among different language speakers, or people with diverse abilities—as well as at the international level.[38] Studies confirm that employees in advanced economies, such as Singapore, Japan, and New Zealand, are exposed to AI at a higher rate than emerging economies, such as Viet Nam, Mexico, and Peru.[39,40,41] Complementary exposure increases productivity: advanced economies can capitalize on AI growth opportunities, while emerging economies with large informal sectors have fewer jobs highly exposed to AI. As a result, they could miss out on the full benefits.[39]

However, emerging economies may have potential for a technological "leapfrog" movement, particularly with the help of open source. Research suggests that a "digitally native" population is growing up in Southeast Asia, where individuals are experiencing more optimism about the technology and adopting it at a higher rate—even up to 30% higher—than more advanced economies in APAC, according to the 2024 Deloitte survey.[15] Some of these economies, such as Indonesia, are also experiencing historically high rates of financial and digital inclusion. With 70% of the population of a working age, they may experience greater AI adoption and innovation as well.[42]

Adoption depends on the accessibility of technology, making the cost savings and transparency of open source AI essential for democratizing access and

helping to reduce international inequities.[43] Creating up-to-date, tailored, and equitable educational resources is also vital for all APEC economies to meet the talent demands required for successful AI adoption. Notably, skilling initiatives have been incorporated into national AI strategies in Singapore, South Korea, and across Latin America.[5,6,22]

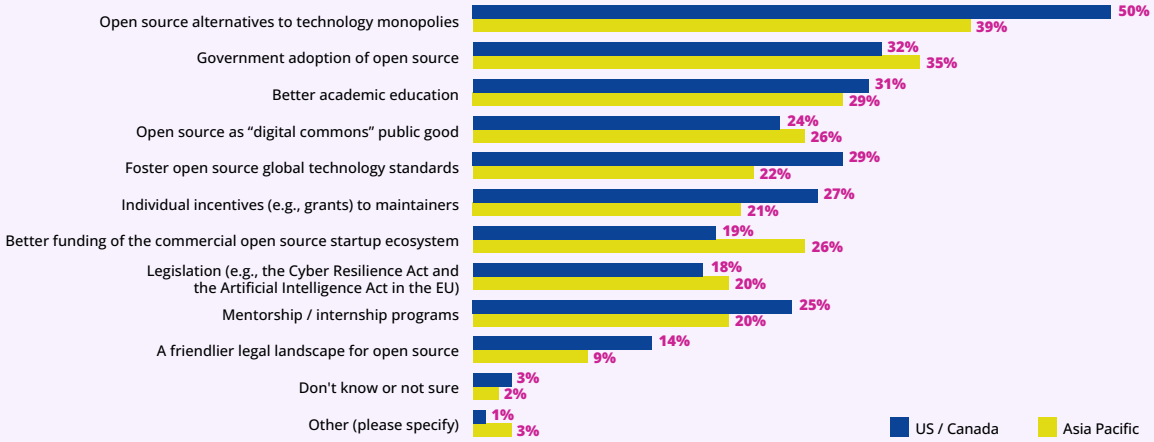
Another inclusion concern is the representation of local perspectives and values in foundation models.[41] To address this, economies require the ability to customize and fine-tune existing AI models to reflect local languages, cultures, and norms, rather than build new models entirely. Open source AI plays a pivotal role by offering governments and organizations solutions that are fully under their control, transparent, and adaptable. Open source AI enables the creation of localized AI instances that can be tailored to meet specific needs and values, ensuring that technology aligns with local priorities and requirements.

As found in the data, reducing dependence on dominant proprietary models is a key motivating factor for adopting open source alternatives—according to 50% of US respondents and 39% of APAC respondents in the LF's 2024 World of Open Source survey (see Figure 5).[21] In Latin America, people are also pushing to foster open source ecosystems and support open source tools to reduce dependence on foreign platforms and to broaden access.[44] They also seek to create inclusive datasets, build trust through transparency, and promote regional cooperation.[44] Research shows that open models are at the foundation of these localized solutions: Noor and Kanitroj (2025) find that the growth in regional large language models (LLMs) in Southeast Asia can be at least in part attributed to the availability of open source foundational models.[45] Open source AI lowers the barriers to innovation and adoption for both advanced and emerging economies, which enables learning and sharing across borders while creating effective localized solutions.[41]

FIGURE 5: OSS INVESTMENT PRIORITY AREAS ACROSS REGIONS

In which areas do you think there should be further investment in open source across your geographic region?

Segmented by geographic location of organization's headquarters | 2024 World of Open Source Survey, Sample Size = 916, Valid Cases = 916, Total Mentions = 2,462 (sorted by total) | Source: The Linux Foundation (2024). 2024 World of Open Source: Global Spotlight. data.world. https://data.world/thelinuxfoundation



Research dialogues on societal benefits

In terms of the societal impact of AI and open source AI, several themes emerged from the dialogues:

Greater inclusivity, greater creativity:

Across APEC, dialogue participants talked about the inclusivity of open source. Without burdensome costs, entrepreneurs and SMEs could imagine clearer use cases for the technology.

Greater sensitivity and adaptability to local needs:

Dialogue participants highlighted the applications of open source AI to serve unique cultures across the region, with its diversity of languages, ethnicities, and indigenous populations. Cultural restoration, preservation, and privacy were core.

The virtuous cycle of open source:

By using open source AI, organizations were leveraging the talents of others rather than reinventing models. One participant summed up the spirit of the community: "Everyone—startups, tech companies, universities, or research institutions—can use our work in their technology, services, or products. In this way, knowledge spreads to society. That is the point."

Turning local needs into new livelihoods:

Across countries, dialogue participants highlighted how local AI-driven startups—particularly young entrepreneurs—were effectively identifying and addressing local challenges like dense traffic congestion and sparse financial access. By expanding their solutions, they grew their businesses, created local jobs, and improved their community's quality of life.

Mitigating climate change, managing its impact:

Half of dialogue participants pointed to AI's role in identifying and implementing solutions to increase energy efficiency, minimize energy usage, monitor climate change, predict its effects on local populations, and prepare for and respond more effectively to climate-related disasters, from droughts and fires to storms and floods.

Sector-specific impacts

The expert dialogues provided nuanced insight into how APEC economies are relying on and implementing AI according to their unique circumstances and competitive advantages, with varying outcomes. For example, Japan is focusing on AI initiatives in healthcare, in response to its aging population; Thailand is building AI applications in tourism and hospitality services; and Indonesia is building out agricultural applications. This means that different sectors in APEC economies are adopting AI and feeling its impact at varying levels. Deloitte's 2024 research categorizes the adoption rate and impact of AI according to a "fuse" and "bang" ranking, respectively.[15] Industries with a short fuse and big bang include education, while healthcare and government services will likely have longer adoption rates but a significant impact once integration happens.

The LF's 2024 World of Open Source survey captured how organizations around the world are using open source AI within different sectors. The data shows that Japanese respondents use open source AI most highly in IT and telecommunications, followed by healthcare, manufacturing and industrial sectors, and financial services (see Figure 6).[46] The US and Canada also use open source AI most in technology and communications and healthcare, with manufacturing coming last.[21] Similar to the comparison in Figure 4, these findings show that the United States and Canada are using OSS at a higher rate across their technology stack than Japanese organizations.

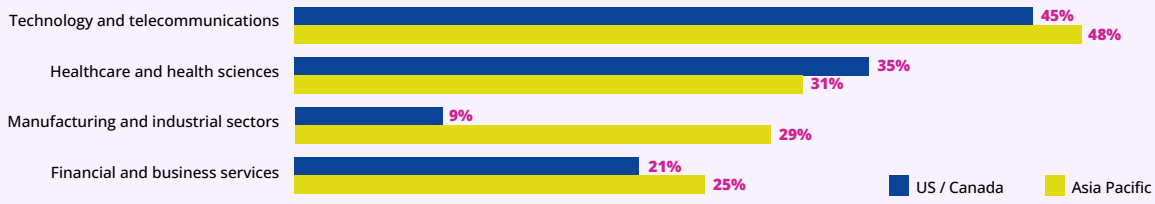
Manufacturing

As identified above, the manufacturing sector is a key focus area for AI integration. The IDC published manufacturing predictions for the APAC region in 2025, including that by 2027–2028, over 30% of Asia-based manufacturers will invest in AI deployments for advanced planning and scheduling, and 40% will leverage AI to automate product quality management and improve development time.[47] The IDC also predicts that manufacturers will address supply chain challenges by expanding their ecosystem partners. The sector's impact on the South Korean and Japanese economies is significant—as Access Partnership finds, manufacturing will deliver the largest share of production gain through AI than any other sector in these two economies (USD 263.4 billion and USD 54.8 billion, respectively).[6,7] Manufacturing is a significant industry for Viet Nam as well, where a 2025 analysis from BCG predicts that the sector will account for 25% of the overall economic gain from AI.[10] "Relying solely on the software stack doesn't translate into significant business," said a dialogue participant in manufacturing in Japan, whose comments resonated with those of Australia, Singapore, South Korea, and Chinese Taipei participants. "We must push into physical AI robotics" and create "a physical workforce in labor-intensive areas," where the person's company sees its role as an original equipment manufacturer (OEM). "We have to go all the way to the device level. We need AI-enabled devices whether they're robots, cars, or social infrastructure," the person added. "The real question is, do we use robots, or do we apply robotics to existing machines, vehicles, and infrastructure?"

FIGURE 6: USE OF OSS IN AI & ML ACROSS INDUSTRIES

In which of the following areas does your organization use OSS?

Segmented by industry, US/Canada respondents, and Japan respondents | 2024 World of Open Source Survey, Q29 by 11 | Source: The Linux Foundation (2024). 2024 World of Open Source: Global Spotlight. data.world. https://data.world/thelinuxfoundation



Semiconductor manufacturers and the AI ecosystem

For semiconductor manufacturers, AI delivers unique value in the form of significant global demand for semiconductors and operational efficiencies. McFaul et al. (2023) highlight the role of semiconductors in the industrial competitiveness of Japan, South Korea, and Chinese Taipei, with these economies holding a large majority share of this market globally. South Korea is a leader in the global semiconductor market, with South Korean companies accounting for 16% of the value in the global semiconductor supply chain.[48] Given the role of semiconductors in the global AI market, these manufacturers face significant opportunities for growth. Open sourcing their manufacturing process allows for greater flexibility and faster innovation while keeping up on the rapidly evolving landscape.[1]

Healthcare

Deloitte's "long fuse, big bang" categorization of AI in the healthcare sector presents a similar picture to what was found in the global open source AI study.[1] AI has significant potential to transform many aspects of the health system, including task automation, precision diagnostic support, and drug discovery and development. In the APAC region, the healthcare sector has a 65% adoption rate (65%), on par with the 63% adoption rate in the global report.[1,5] For healthcare providers, integrating AI into their routine tasks could save critical time to reinvest back into other human-centric activities—with the 2024 Accenture and Microsoft report estimating up to 157 hours (7% of a standard work year) saved annually for nurse practitioners in New Zealand who use AI in their more administrative tasks.[8]

The use of AI in healthcare and pharmaceutical R&D holds promise for significant efficiency gains, greater scientific discovery, and better care.[1] AI tools help enable the more recent push for precision medicine, analyzing patient data for tailored decision and diagnostic support. One example is Brunei Darussalam's BruHealth, a health management mobile application that 66% of citizens use weekly for appointment scheduling, viewing lab results, and accessing personalized health recommendations and routines based on their own behavior patterns and developed by the app's AI capabilities.[49] When combining these efficiency and discovery gains from AI with the cost savings of open source, open source AI represents significant potential for healthcare systems in APEC economies to participate in global R&D without the expense of proprietary AI systems. Increasing and broadening research products in this way will lead to greater, faster, and more diverse healthcare innovation. For economies like South Korea and Japan, whose research and development expenditures are very high (3.2% of Japan's GDP in 2020), applying AI in a sector with high R&D like healthcare and pharmaceuticals means a high return on investment at the national level.[6,7]

Education

Educational systems, both from an operational and curriculum standpoint, will experience significant shifts with greater adoption of AI. Training and curricula must stay nimble and future-oriented so that individuals can master the skills they need to use and develop AI. Operationally, educators and students could use AI in various capacities as a secondary resource. For example, teachers could use AI to tailor curricula for personalized learning, and students could use AI as a tutor, an interactive learning tool, or in digital textbooks.[6] According to the 2023 Access Partnership report on South Korea, AI is highly effective in roles requiring greater preparation, such as teaching.[6] Indeed, the 2024 Accenture and Microsoft report finds that AI could unlock 224 hours annually for high school teachers through lesson planning and personalized learning.[8] For South Korea, AI could unlock USD 38.8 billion in productive value in the education, health, and social work sectors.[6] As described above, open source AI democratizes access to the technology, meaning that resource-constrained educational centers can adopt these tools and likewise benefit from the productive value.

According to the Japan dialogue, "Skill matters most. So, from the perspective of utilization, the overwhelming majority of people still lack the skills needed to apply AI effectively." Experimenting with AI is integral to learning across the region: "Universities should be focusing on AI now, giving students access to more powerful GPU resources and letting them really crank things up—and putting more effort into STEM." Vocational training and worker upskilling and

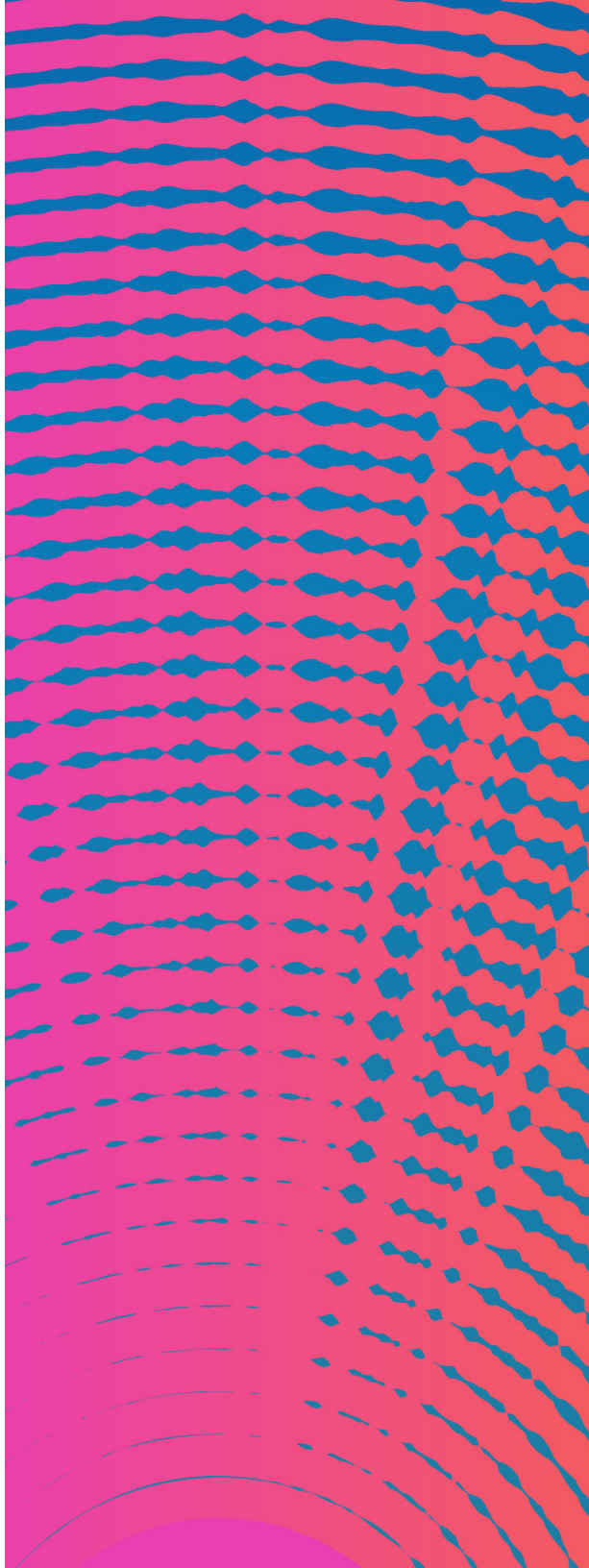
reskilling are themes across APAC, as organizations begin to reimagine their workforces as carefully curated combinations of skills, creative talent, and emotional/cultural intelligence that collaborate with different models of artificial and embodied intelligence in virtual and real environments. Over a third (39%) of South Korea's managers identified "upskilling workers" as a priority, and nearly half (48%) said their organizations were using agents to automate workstreams for entire functions or teams.[50]

Public sector & government services

APEC governments are deploying AI to improve public service delivery, streamline government operations, improve healthcare services, and strengthen public security and national defense.[51] For example, South Korea's Digital Platform Government strategy incorporates AI to streamline government services for South Koreans while improving accessibility and convenience of these services, at an estimated cost savings of USD 1.4 billion on paperwork.[6] Papua New Guinea is piloting an AI tool to process visa applications, which has reduced the application's timeframe from two weeks to four minutes.[52,53] In Indonesia, dialogue participants saw opportunities to deploy AI in logistics and predictive maintenance of defence equipment and in managing waste and public resources.

Some APEC economies are using AI in government services unofficially, with attempts to push their sectors forward.[54] "Judges here have banned lawyers from using AI in legal submissions for fear of misleading information," said one dialogue participant. "Such a ban revealed a lack of judicial understanding of AI." Despite less evidence of implementation in Australia and New Zealand, industry reports show important potential in the countries' public sectors when it comes to education delivery, citizen services, and R&D—which ultimately rests on a favourable regulatory and investment environment, outlined in AI strategies such as New Zealand's Public Service AI Framework.[14,55] "The biggest risk is complacency," said another participant from the region.

By adopting open models and tools in particular, governments can build customized and flexible solutions, minimize procurement costs, and assert control over their citizens' data and its security.[51] The Singapore Academy of Law and Infocom Media Development Authority leveraged open source AI to develop a legal tool that summarizes judgments, Singapore-specific case law, and complex legal terminology. Lawyers can make quicker and more informed decisions by the tool's summary of cases in minutes rather than days and by expanding the number of cases reviewed.[51] Viet Nam developed a similar legal virtual assistant based on an open model to support the automation of certain legal and judicial aspects and access to legal materials. In just over a year of its deployment, it helped reduce workload by 30%.[51] The Peruvian civil society Hiperderecho developed a tool using Llama to index court judgments digitally, make them searchable, and summarize them for the general public and legal professionals.[56]



Conclusion

AI presents great opportunities for economic and societal growth for organizations and governments around the world. AI could boost productivity by USD billions or even trillions in some APEC economies, with time freed up to reinvest in other, more complex activities. OSS' cost savings and improved productivity indicate that open source AI could create even greater productivity gains and cost savings than proprietary AI. By reducing redundant development and encouraging greater access, collaboration, and scrutiny, open source AI also accelerates innovation by decreasing time-to-market and increasing the quality of the product. As this research study shows, enhancing investment in and education on open source AI will more equitably spread the benefits of AI across APEC economies.

The economic and societal impacts of open source AI is a nascent area of study, particularly in APEC economies. We recommend further research in this area to better understand how APEC economies are capturing value from the adoption and implementation of open models and tools. Quantitative research can generate further evidence on topics discussed in the literature and in the dialogues, including how open source AI supports growth and development of local ecosystems; the role of open source to promote cross-border connectivity and trade; and the use of open source in supporting AI adoption across key sectors and competitive advantages.

Policy recommendations

Combining existing literature with ecosystem-wide, expert-led dialogues provides an in-depth depiction of APEC's AI opportunity and the economic benefits at stake in this region. To help propel responsible and sustainable adoption and integration of the technology that capitalizes on these benefits, the following strategic activities are recommended:

1. **Set a clear national vision for AI** that prioritizes the use of, contribution to, and sustainability of models, tools, and data that are open, responsible, and secure by design. This includes the reform of national procurement practices to better support open source adoption, the evolution toward innovation-friendly regulatory frameworks, the allocation of budget or funding for open source sustainability practices and innovation, and the deployment of maintainers backed by open source program offices (OSPOs) at the agency or ministry level.
2. **Build local capacity** by (1) incentivizing small business competition through funding, tax breaks, and compute credits, (2) supporting the development and testing of practical use cases through avenues such as hackathons and sandboxes, and (3) prioritizing local talent development through upskilling and certification that encourages the responsible and secure use of open models and tools and that is tailored to specific populations and sub-populations (e.g., mid- or late-career professionals).
3. **Create and invest in APEC-wide ecosystems and knowledge-sharing platforms** to formalize guidelines around development, adoption, monitoring, security, and evaluation of open source AI in ways that encourage responsible APEC developer contributions and technical capacity building.
4. **Strengthen national infrastructure** to increase local participation and innovation in AI. This includes expanding national compute capacity, GPU funding, investing in local language model development, building national platforms for model and data sharing, and creating open and interoperable data ecosystems in key domains. This activity will support secure, domain-specific, grassroots, and culturally relevant model development.

Open source AI represents a cost-effective, innovative, transparent, and talent-friendly option for organizations and governments addressing skills gaps, inequalities, dependency concerns, and collaborative issues. This study of open

source AI's adoption and impacts in APEC economies revealed areas for further research and policy recommendations that government and organizations should consider at this critical juncture of AI development and adoption, where the choices made on technology adoption have important ramifications for economic growth.

What follows are 11 in-depth analyses of each of the dialogues, presenting key economic and societal opportunities, ecosystem enablers, and case studies relevant to each APEC economy. The roundtables and interviews were structured to follow loosely a pre-defined set of questions developed by the research team. Participants were sampled from diverse sectors and industries in each economy, representing a local cross-section of AI expertise. The roundtables were approximately two hours in length, and the interviews between 30 minutes and one hour. Where conducting roundtables and interviews was not feasible, participants were invited to submit written responses by email. Each consisted of:

- **Australia:** series of 7 interviews completed between September 2 and 10, 2025 AEDT
- **Chinese Taipei:** roundtable of 20 participants completed on September 9, 2025, in partnership with the Taiwan AI Academy
- **Indonesia:** roundtable of 22 participants completed on September 9, 2025, in partnership with Hactiv8
- **Japan:** roundtable of 11 participants completed on August 21, 2025, in partnership with Linux Foundation Japan
- **Malaysia:** roundtable of 10 participants completed on September 8, 2025, in partnership with the Asia School of Business
- **New Zealand:** 3 interviews completed between September 2 and 8, 2025 NZT
- **The Philippines:** roundtable of 16 participants completed on September 3, 2025, in partnership with the Analytics Association of the Philippines (AAP)
- **Singapore:** series of 4 interviews completed by video call (September 23, 2026) and emails (received September 25, 2025)
- **South Korea:** review of the CODIT issue paper by Chung et al. (2025)[57] with additional research to expand upon or illustrate its points
- **Thailand:** roundtable of 20 participants completed on August 14, 2025, in partnership with the Artificial Intelligence Association of Thailand (AIAT)
- **Viet Nam:** series of 11 interviews completed between August 27 and September 11, 2025 ICT in partnership with Startup Vietnam Foundation

Unless indicated otherwise, Meta provided the text for the case studies, which were edited for consistency in style and usage.

Australia

Australia has a vision for inclusive, human-centered AI. Its national strategy promotes equity, safety, and innovation. However, experts from across sectors point to a widening gap between ambition and execution. To capitalize on the potential of AI—including its economic and social opportunities—and remain competitive, the economy must support collaboration across government, academia, and industry, set appropriate governance and regulations to incentivize innovation, and increase investment in AI infrastructure and workforce development, including skills and training.

Economic opportunities

Generative AI could add up to AUD 115 billion to Australia's economy by 2030.[58] With strong academic institutions, vibrant industries like energy and mining, and unique social and geographic strengths, the economy has the capacity and imperative to create globally competitive, sector-specific AI solutions.

In a series of interviews, Australian researchers and business representatives described the diverse and innovative ways that Australians can use or are using AI within the economy:

- **Commercialization of industry research:** With its strong research base, Australia can turn foundational research into scalable products, especially through startups and SMEs, to boost exports, create jobs, and retain talent.
- **Sector-specific AI advantages:** AI can greatly improve operational safety and efficiency in the mining sector, fraud detection and customer service in banking, mobility and crime prediction in cities, and policing national borders.
- **AI infrastructure and data services as a new industry:** Embodied intelligence (aka robotics), sensor data fusion, and compute infrastructure can make Australia a leader in "information manufacturing," exporting high-trust AI services powered by clean energy and quantum.
- **Pioneer in carbon neutral infrastructure:** Combining AI with quantum and clean energy applications can make for dynamic energy markets and far more efficient management of energy grids and natural resources.

Societal opportunities

According to the experts interviewed, AI can benefit Australians by improving public services, advancing equity and inclusion, and supporting climate resilience, with solutions tailored to Australia's unique cultural and geographic context.

- **Climate resilience and smart infrastructure:** AI applications for energy optimization, emissions tracking, drought prediction, and wildfire response can help Australia meet net-zero goals and make for more resilient communities.
- **Better public services:** open source AI in particular can transform service delivery—particularly in rural health, elder care, and public infrastructure—when implemented through trusted, sovereign systems that protect privacy and cultural nuance.
- **Inclusion, accessibility, and equity:** Context-specific training data and on-shore compute power provide broader access for remote, Indigenous, and underserved communities and distribute AI benefits more equitably.

Australia (Continued)

Ecosystem enablers

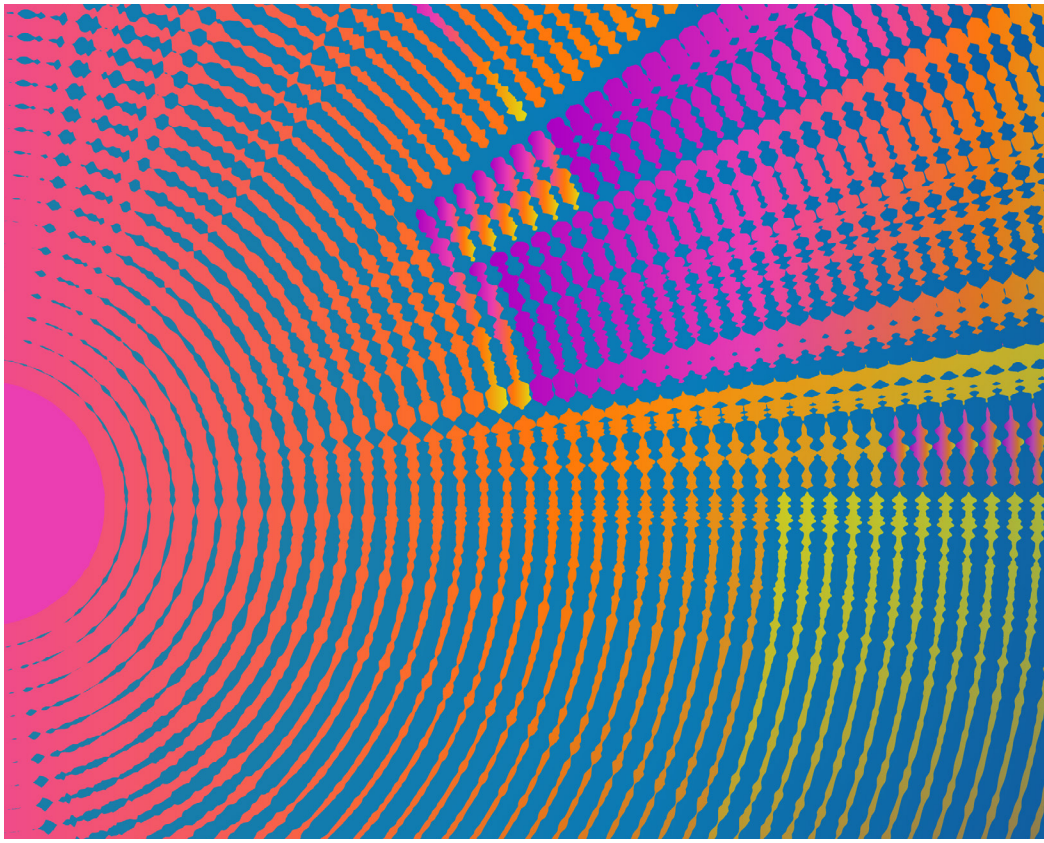
Research participants in Australia would like to see the economy's rankings improve, and nearly all of them called for greater investment, especially in compute power. Flora Salim, a full professor in the School of Computer Science and Engineering at the University of New South Wales and the deputy director of the university's AI Institute, underscored the need for (1) AI leadership in government, to increase investment in AI R&D on par with quantum and clean energy, and (2) visionaries across the different stakeholder groups to take a more active role in advocating for AI R&D and infrastructure investment.

In sum, Australia's unique datasets, dynamic markets, and cultural context position it to lead in applied open source AI, if underpinned by strategic and inclusive policy vision through policies that:

- **Invest in AI infrastructure:** Expand national compute capacity and open source development to build capability and preserve data sovereignty.
- **Fund AI R&D and talent retention:** Prioritize AI in national research agendas and stop the brain drain by funding pathways from research to commercialization.
- **Support SME and startup adoption:** Provide toolkits, funding, and regulatory support to help small businesses access and implement AI.
- **Develop practical, adaptive AI governance:** Design regulation that requires safe and ethical use of AI without stifling innovation.
- **Bridge academia–industry gaps:** Incentivize applied research hubs, AI innovation precincts, and translational fellowships, where researchers use AI to translate basic science into clinical value.[59]

By the numbers

- The potential economic impact of AI is USD 53–127 billion by 2034 in Australia.[9]
- Only 40% of organizations have the infrastructure needed to support AI, and just 25% have automated workflows.[60]
- Nearly half (49%) of workers regularly use AI in their work, and over half (50+%) reported greater efficiency, quality, and creativity as a result.[61]



Chinese Taipei

With AI and open source AI, Chinese Taipei has significant opportunities to improve productivity, quality, and customer engagement and to personalize products, prices, and public services, especially in underserved populations. “AI is an opportunity for us,” said a roundtable participant. “We don’t need to hide under other brands; we can create our own and step out to showcase them.”

Economic opportunities

As enterprises in Chinese Taipei explore AI applications, several sectors stand to benefit significantly, especially those that collect and create business value from operational data and can embody intelligence in the Internet of Things (IoT).

- **Semiconductor industry innovation:** Incorporating open source AI into chip design and manufacturing helps protect intellectual property, sustains system stability, and boosts productivity. With on-premise models, Chinese Taipei’s hardware sectors can embed AI in their products.
- **Empowered SMEs through custom AI:** Open source tools lower costs for SMEs so that they can customize AI applications—such as dynamic pricing or customer support—without relying on foreign platforms or expensive licensing. With open source AI, second-tier AI companies in Chinese Taipei have emerged, creating services that help other enterprises transform.
- **AI-enabled financial services:** With open source AI, Chinese Taipei’s financial institutions can process loans, assess risk, and deliver services more securely and efficiently. Local control over sensitive customer data reinforces privacy and reduces operational costs. Once all companies have integrated AI into their operations, competitive advantage will hinge on delivering superior user experiences.

Societal opportunities

Members of the roundtable expressed concerns about resource constraints, the costs of commercial AI services and infrastructure, and disparities in digital skills and infrastructure. They thought that Chinese Taipei could pursue high-impact, low-effort AI applications that make democratic values a priority.

- **Reimagining education with AI literacy:** AI can shift Chinese Taipei’s education system away from rote memorization toward creativity and critical thinking. Teaching both AI use and model creation equips students with essential 21st-century skills.
- **Greater digital inclusion of underserved communities:** Open source AI can help bridge the economy's digital divide through localized tools and platforms tailored to rural, Indigenous, or economically disadvantaged populations, making AI accessible beyond urban centers.
- **Greater civic engagement and government transparency:** Projects like AI chatbots trained on city council records demonstrate how AI can increase transparency and public participation in governance, as long as the models are affordable and align with the public’s interest.

Chinese Taipei (Continued)

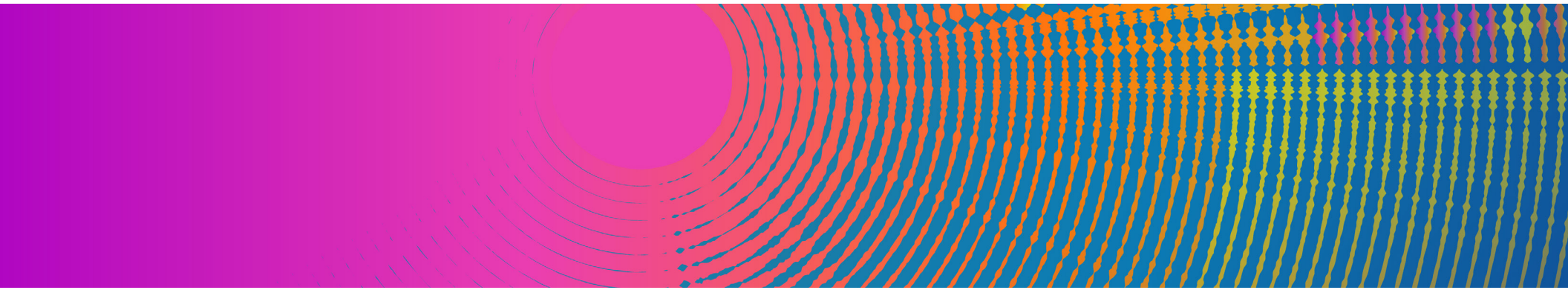
Ecosystem enablers

Chinese Taipei is building on its forward-thinking policies to foster sustainable innovation, and cultivate a digitally savvy society in these areas:

- **Open datasets and infrastructure:** High-quality, accessible datasets and robust digital infrastructure are foundational to AI innovation.
- **Talent development:** Investment in AI literacy, education, and local talent is essential to bridge the digital divide and foster innovation.
- **Regulatory transparency and legal clarity:** Regulations must balance openness, trade secrets, and the public's right to explanation. AI developers and deployers need clear frameworks for allocating responsibility.
- **Cross-sector collaboration:** Cooperation and coordination among industries and open sharing of data and models can maximize AI's value while respecting individuals' privacy.
- **Local applications and inclusivity:** To include everybody, solutions providers must adapt AI applications to local languages, cultures, and societal needs.

By the numbers

- Semiconductor development is a major sector for the economy, with the Taiwan Semiconductor Manufacturing Company accounting for 67% of global logic chip capacity.[48]
- In 2025, one in three financial institutions in Chinese Taipei implemented AI.[62]
- By 2030, AI-powered solutions could generate USD 101.3 billion of economic growth in Chinese Taipei.[63]
- Chinese Taipei's AI action plan includes an annual budget of TWD 9–10 billion (USD 304.4–338.3 million) starting in 2025 to develop the economy's AI industry.[64]



Indonesia

Indonesia's population size and diversity are catalysts for its innovation and economic success. In the context of artificial intelligence, leaders across business, government, and education advocated for prioritizing ethical use of AI to realize its full potential.

Economic opportunities

The government has set an economic development goal of 8%. Traditional sectors such as manufacturing and agriculture will continue to drive a significant portion of economic growth, but AI can play a key role in accelerating that growth and creating new opportunities in other sectors. Open source could be a catalyst for hitting the 8% target.

- **Growth engine:** AI will be a faster engine of growth for the sectors already contributing to Indonesia's growth, and it will level the field of competition for SMEs and help them to scale up their contributions to the economy.
- **Operational efficiency:** The defense and security sector can use open source AI to develop local solutions and support business workflows and non-classified work like predictive maintenance. It can also use open source AI in its cooperatives with SMEs.
- **Innovation catalyst:** Locally grown enterprises such as consumer technology company GoTo have demonstrated that Indonesia has the digital talent, entrepreneurship, and vision to leverage AI in meeting local markets' needs. Innovators and investors alike must watch for ways to optimize AI in use cases relevant to Indonesia and its cultural and economic trading partners.

Societal opportunities

Roundtable participants highlighted opportunities for AI and open source AI to advance education, improve urban planning, and tailor solutions to local cultural norms and needs. At the same time, they emphasized ethical AI use and mitigating potential AI-generated harms.

- **Individualized education:** Open source AI can help to create personalized learning experiences and scale education across Indonesia. For example, the Indonesian edtech platform Ruangguru uses AI to analyze learners' needs and personalize their learning experiences.65 It runs hybrid learning centers in 120 cities and caters to ~33.7 million rural students online.[66]
- **Urban planning:** AI can help relieve urban challenges such as city traffic congestion and waste management. For example, Gojek applied data science and machine learning to launch a logistically efficient ride-hailing service in 2010.[67]
- **Cultural customization:** Open source AI presents opportunities for developers to train models to harmonize with diverse local cultures. For example, GoTo collaborated with Indosat, a telecommunications and Internet service provider, on Sahabat-AI, a repository of "open source large language models for Bahasa Indonesia and its regional languages."[68]

Indonesia (Continued)

Ecosystem enablers

To unlock AI's economic and societal potential, Indonesian dialogue participants suggested elements of a coherent policy framework that supports:

- **Transformation of the workforce:** The government's national AI road map must anticipate job displacement, job creation, and the reskilling of workers and integrate industry needs and early intervention to build a talent pipeline.
- **Demand for talent.** Public sector adoption of AI (e.g., in defense, public health, and administration) will create AI jobs, set standards, and demonstrate trusted use of AI across society. The government budget can support localization of educational materials, so that people can begin experimenting with AI.
- **Infrastructure programs:** Public funding could help startups, SMEs, and universities afford GPUs (e.g., compute credits, subsidies for more powerful laptops) to use open source, and ecosystem players can localize open models for Indonesia users.
- **Ethical and contextual governance frameworks:** The government can align AI usage with Indonesian values, promote safety, and mitigate misuse, tailoring global best practices to local realities (e.g., explainability, cultural norms).

By the numbers

- From 2020 to 2024, investment in AI startups in Indonesia grew 141%, reaching USD 542.9 million (IDR 8.6 trillion).[66]
- Indonesia's youthful population—with 70% of working age—and expanding financial and digital inclusion place it in a pivotal position for AI adoption and investment.[42]
- Indonesia has the third-largest GitHub developer community in APAC, with significant growth in contributions to GitHub AI projects (213% in 2023).[42]
- Experts expect AI to contribute 12% (USD $366 billion) to Indonesia's GDP by 2030.[69]

Case in point: Transforming accessibility for the hearing-impaired in Indonesia

Tulibot aims to break down communication barriers and create a more inclusive world for the hearing-impaired community by using AI assistive technology. It developed Llama-powered smart glasses that convert spoken language into real-time text so that hearing-impaired individuals can follow conversations seamlessly. Tulibot's smart glasses support multiple languages, including Indonesian languages like Sudanese, Javanese, and Bahasa Indonesia.

Japan

Japan has a ripe opportunity to pioneer the use of AI in driving economic growth and delivering social services as its working population shrinks and its community of retirees grows. Nearly a third (29.4%) of the population is over the age of 64 years.[34] Meeting this demographic challenge requires advocating for policies and initiatives that encourage cultural change, innovation, AI upskilling, and standards development.

Economic opportunities

For roundtable participants, the most crucial economic challenge that AI can help address is the economy's population decline. To achieve further economic growth, AI can drive innovation in key sectors such as manufacturing, boost productivity by automating internal processes, and catalyze startup growth.

- **Automotive:** The automotive manufacturing sector is deploying AI to improve complicated internal cross-divisional decision-making processes, in addition to long term investments such as advancing self-driving technology.
- **Telecommunications:** A multinational ICT company, which provides AI infrastructure, platforms, and system integration, is agentifying individual tasks, linking them together, streamlining operations, and offering to do the same for customers.
- **Physical AI and robotics:** There are opportunities to leverage strengths in manufacturing to develop physical AI robotics that support an aging society, make it possible for diversely-abled workers to fill manual labor-intensive tasks, and address physical labor shortages.
- **Customer service:** In this sector, AI is reducing organizational silos and assisting knowledge sharing to support workers taking or returning from breaks, such as maternity leave.
- **Startup growth:** Open source AI is vital for startups, as it significantly lowers development costs and provides a foundational technology layer, which would have been too expensive to develop from scratch, upon which they can innovate.

Societal opportunities

Roundtable participants discussed AI's impact across several social dimensions:

- **Healthcare:** AI innovation in healthcare can support the aging population, including providing mobility assistance. In addition, open source AI is also valuable for developing AI solutions in industries like healthcare when sensitive information is involved.
- **Public administration:** Local government offices could use open source AI trained with confidential data on-premises to administer government services to over 1,700 municipalities through self-service counters.
- **Work-life balance:** AI not only increases productivity and reduces the need for overtime but also reduces workplace stress by mitigating negative customers' communications and helping to balance careers and childcare.
- **Transportation:** Deploying self-driving vehicles in rural areas can fill gaps in public transit services due to depopulation.
- **Mental well-being:** Agentic AI helps to alleviate feelings of isolation and loneliness through sympathetic, private, and anonymous interactions with agentic AI.
- **Cultural customization:** Open source AI supports building models and tools that meet specific local needs and objectives and reflect Japanese language, norms, and values.

Japan (Continued)

"Japan faces the challenge of a declining working-age population. Against this backdrop, it is essential to establish social infrastructure that supports citizen well-being," said Watanabe Takuya, director of the IT Innovation Division at the Ministry of Economy, Trade, and Industry. "Implementing data-driven policy-making and leveraging AI technologies—for example, to advance elderly care and boost workforce productivity—can help us achieve these goals. Open source AI offers significant value in facilitating knowledge sharing and driving innovation."

Ecosystem enablers

To realize these economic and societal gains, participants identified key enablers:

- **Develop human capital:** Cultivate AI talent—"those who can develop AI, and those who can figure out how to use it effectively"—in partnership with universities and the private sector and foster a culture that embraces "challenge and change."
- **Build an open data ecosystem:** Identify Japan's priority use cases, train Japanese AI models, collaborate on approaches to creating and sharing quality data, and participate in standards development.
- **Foster a culture that embraces change:** Cultivate a mindset that values calculated risks and promotes agile decision-making within the organizations to drive innovation.
- **Incentivize AI adoption:** Advocate AI use in government, especially small municipalities, and in large traditional firms through financial and other policy incentives; and promote user-driven AI solution development, where developers and companies focus on user needs to develop solutions that address real-world challenges.
- **Promote ethical AI:** Align usage with transparency, safety, and Japanese values, especially in high-stakes fields, and with respect for privacy and trade secrets.

By the numbers

- Incorporating generative AI into work tasks could unlock USD 1.1 trillion (JPY 148.7 trillion) of productive capacity for the Japanese economy.[7]
- The Japanese economy will see a USD 54.8 billion boost from incorporating AI into its manufacturing sector.[7]
- Japan's significant investment in R&D (3.7% of its GDP) makes it a priority area for AI adoption, especially to advance drug discovery and scientific research.[70]
- The finance and insurance industry in Japan leads all others—manufacturing, ICT, and real estate—in AI adoption, with 30% of firms using AI.[71]
- The use of OSS is already lowering software costs and improving software quality for 69% and 79% of Japanese organizations, respectively.[72]

Case in point: How AI is driving innovation at JAMSTEC

The Japan Agency for Marine-Earth Science and Technology (JAMSTEC) fine-tuned Llama with climate-specific data from across Japan, from remote mountain villages to bustling cities. This work resulted in an AI solution that can help communities and local governments make faster, smarter decisions in the face of climate change. By fine-tuning Llama, JAMSTEC created a climate-focused AI solution that delivers precise insights without years of expensive development. [The original piece appeared here. Adapted with Meta's permission.]

Malaysia

Participants at the Malaysia roundtable see AI and open source AI as transformative forces driving inclusive economic growth, empowering local talent, and creating scalable, accessible solutions that benefit all levels of society.

Economic opportunities

AI and open source AI offer significant economic potential for Malaysia—especially in manufacturing, healthcare, financial services, and micro, small, and medium sized enterprise (MSMEs)—by driving efficiency, innovation, and new business models.

- **Efficiency gains, cost savings:** For MSMEs and sectors like education and healthcare, AI and open source AI can boost productivity and quality control. Lack of AI talent and awareness might delay these benefits.
- **Custom models as market differentiators:** Players in transaction-rich industries like financial services can train AI on internal data and develop local models for competitive advantage. For sectors like finance that handle a lot of sensitive data and require transparent and on-premise solutions, open source AI fits their needs well.
- **Lower barriers to innovation:** MSMEs, especially those in such key sectors as manufacturing, healthcare, education, and financial services, can experiment with open source AI and free generative AI tools in their work. Startups and universities are already using open tools to develop local language solutions.

Societal opportunities

With foundational digital infrastructure and trust frameworks in place, AI and open source AI serve to advance education, public health, service accessibility, and social inclusion.

- **Healthcare and public service innovation:** Developers are exploring AI applications that, for example, facilitate mental healthcare and trace funds to combat scams. For broad acceptance, these must clearly address privacy and safety concerns.
- **Greater access and inclusion:** AI solutions embedded in wearables for visually impaired communities can help users to access, navigate, and participate in work and public spaces.
- **Education for all:** Malaysian learners of all ages can leverage AI tutoring through free or affordable education solutions that reduce inequalities and support students in marginalized communities.

Malaysia (Continued)

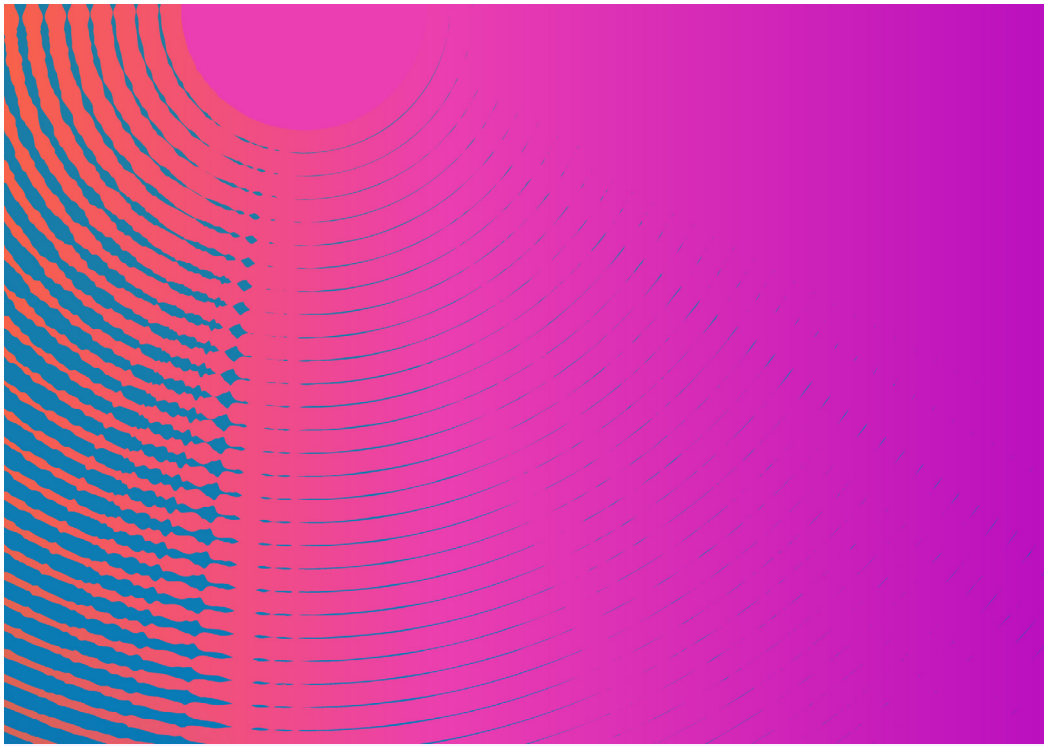
Ecosystem enablers

While Malaysia is making meaningful progress in AI, it needs strategic, inclusive, and trust-centered policies to capture the economic and societal value of AI and open source AI fully. Those policies must work to:

- **Lay a national AI foundation:** Digitize records, structure citizen data, create a trusted digital identity system, improve system interoperability, and leverage fintech-like sandbox models for safe experimentation.
- **Strengthen the talent pipeline:** Mitigate AI-driven job displacement by reforming education, reskilling and upskilling workers, collaborating across sectors and with universities, and encouraging multilingual and inclusive AI development.
- **Create a market for flexible talent:** To meet the need for AI talent, Malaysia could support the development of an AI-driven platform that matches MSMEs with people who have the requisite technical skills and business acumen to serve as consultants to leverage their expertise across multiple industries.
- **Encourage experimentation:** Incentivize all enterprises to experiment with AI rather than wait for all institutional elements to be in place, and facilitate cross-ministerial collaboration through flexible *punca kuasa* (authority).
- **Adopt agile, risk-based regulation:** Move from prescriptive laws to principle-based guidance, promote benchmarks and model monitoring frameworks, and prioritize sandboxes for highly regulated industries to test open source AI tools safely.
- **Ethical and contextual governance frameworks:** The government can align AI usage with Indonesian values, promote safety, and mitigate misuse, tailoring global best practices to local realities (e.g., explainability, cultural norms).

By the numbers

- MSMEs make up 97.4% of all Malaysian enterprises, account for 48% of employment, and represent 38% of GDP.[73]
- Malaysia has prioritized the development of its data center capacities and is projected to make up two thirds of the South-East Asian market by 2035.[17]
- In 2024, the Malaysian government opened a National AI Office to coordinate policies, governance, and investments.[74]
- The adoption of AI could unlock USD 113.4 billion of productive capacity in Malaysia, with the most gains in the manufacturing sector.[75]



New Zealand

New Zealand faces both challenges and opportunities as it seeks to close its longstanding productivity gap with other developed economies. Artificial intelligence could play a transformative role across a broad range of areas. To compete globally and uplift all citizens, New Zealand's approach to AI must strengthen the national technology infrastructure, skills set, trust in AI, and indigenous inclusion in its AI strategy, while ensuring that cultural values shape the economy's digital future.

Economic opportunities

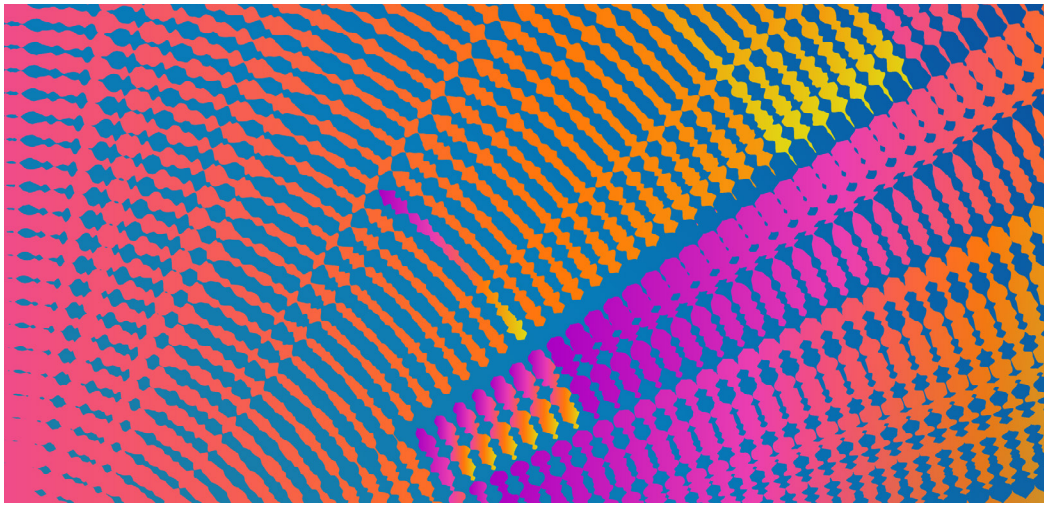
AI can lift New Zealand's productivity, especially in agriculture, energy, and health, and elevate its competitiveness as a global tech ecosystem across sectors.

- **Agriculture and dairy innovation:** Precision agriculture and AI-enabled tools like Halter's solar-powered cattle management system can boost productivity in critical sectors such as ranching and resource stewardship and support job seekers in rural economies.[76]
- **Environmental and forestry management:** Projects such as TAIAO (Time-evolving Data Science and Artificial Intelligence for Advanced Open Environmental Science) support weather forecasting, flood prediction, and forest monitoring, including tree age estimation.[77]
- **Renewable energy optimization:** AI can optimize efficiency in hydro and geothermal power systems, reduce transmission loss, and aid climate adaptation, with AI-powered energy auditing and carbon reporting services.[78]
- **Healthcare innovation:** Homegrown companies such as Volpara Health are leveraging AI for early cancer detection, showcasing potential in medical diagnostics.[79]

Societal opportunities

AI supports cultural preservation, inclusivity, and well-being through personalized services, indigenous data sovereignty, and reduced cognitive and systemic errors with numerous benefits.

- **More accessible public services:** AI could assist with translating and explaining specialized terminology, integrating fragmented data systems, and managing diaries and paperwork, easing stress and improving access and outcomes in healthcare, justice, and other settings.
- **Brighter spotlight on indigenous innovation:** Māori-led AI initiatives emphasize data sovereignty, cultural preservation, and ethical design, potentially giving New Zealand a global edge in values-driven AI.



New Zealand (Continued)

Ecosystem enablers

To seize those economic and societal opportunities, interviewees advocated for the following:

- **Investing in data infrastructure and on-shore compute capacity:** Build secure and interoperable data platforms—especially in health, environmental science, and Māori domains—to improve national resilience.
- **Incentivizing university-industry-government collaboration:** Attract research labs to partner with local scientists, local SMEs and industry, and Māori organizations; and reform academic evaluation to reward open source work, reproducible tools, and AI applications.
- **Accelerating AI adoption in key sectors and by SMEs:** Focus on sectors with both strategic strength and public value—agriculture, environment, health, and Māori data and cultural tech—and prioritize grants, vouchers, and technical assistance for adopting open tools.
- **Deepening workforce skills and retaining AI talent:** Scale up micro-credentialing, STEM, and AI-specialized programs for those strategic sectors and public servants; and create incentives (e.g., research labs, career paths) for AI practitioners to stay in the economy.
- **Increasing awareness:** Publish clear guidelines to address ethical risks, bias, transparency, and accountability and to foster trust in and adoption of AI applications.

By the numbers

- AI could add NZD 76 billion to New Zealand's economy by 2038.[80]
- Generative AI could boost worker productivity by 15.5% across 38% of work tasks.[8]
- New Zealand is piloting the implementation of AI in public agency workflows and experiencing an ROI of 287%.[81]
- New Zealand has developed a Public Service AI Framework to set a mandate and program in the public sector alongside key principles and guidance for fair AI use.[55]
- In a pilot of an AI-powered assistant in the Accident Compensation Corporation of New Zealand, 81% of users said AI improved their work quality, 80% said it accelerated their pace, and 77% said it increased their productivity.[82]

Case in point: University of Auckland

The University of Auckland uses Llama to create accessible, multilingual tools that aid novice programmers and advance digital literacy. Driven by AI code generation, students receive immediate, transparent, and actionable feedback as they develop skills in code understanding and prompt engineering.

The Philippines

The Philippines has an opportunity to empower MSMEs and improve public sector services and disaster response. While already leveraging open source AI, the government can prioritize upskilling the workforce, bridging the digital divide, and investing in infrastructure so that the broader community benefits from open source AI.

Economic opportunities

The Philippines is starting to tap into the transformative power of AI to unlock economic value across industries.

- **Support for MSMEs:** MSMEs across multiple industries have opportunities to leverage AI for business growth, for example, developing AI chatbots for customer service and using AI to forecast market demand and weather in agriculture. Open source AI helps to reduce the cost of adoption for MSMEs significantly. MSMEs can also tap into initiatives such as the SETUP 4.0 program to upgrade their technologies, strengthen their R&D linkages, and increase their capabilities in, for example, e-commerce and digital marketing, so that they can grow their businesses beyond their borders.[83]
- **Support for inventors:** The Philippines government is actively investing in AI initiatives that can boost national innovation. For example, the PROPEL program aims to accelerate the commercialization of Filipino inventions by aggregating the services and resources of the Department of Science and Technology (DOST) in one place. Its chatbot "JuanaKnow" walks innovators through the process, from ideation to scaling up.[84,85]
- **Supply chain efficiency:** In manufacturing, innovators are building custom LLMs to facilitate communications and coordinate decisions among supply chain partners.
- **Farm efficiency:** In addition to manufacturing, agriculture is another key sector that can benefit from AI adoption. Through apps like GUL.AI, the agriculture sector can digitalize farms for precision planning, resource management, and responsiveness to climate change, ultimately increasing productivity and contributing to national food security.

Societal opportunities

Targeted AI initiatives across culture, education, and agriculture can help protect residents and invigorate inclusive growth and societal resilience in the Philippines.

- **Disaster preparedness:** The Department of Interior and Local Government's Operation Listo and the Philippine Atmospheric, Geophysical, and Astronomical Services Administration's flood information and warning system both use big data and AI to help prepare for and respond effectively to natural disasters.
- **Public sector services:** In addition to disaster mapping, the Philippines government is using open source models to enhance public sector delivery, for example, in chatbots for citizen engagement, and solutions to manage energy and monitor traffic. It created a democratized intelligent model exchange repository (DIMER) of ready-to-use AI models for users to develop their own applications.[86]
- **Local languages:** Developers can build out the Tagalog corpus and fine-tune Filipino language processing in current models so that they produce more authentic and natural-sounding interactions.
- **Bridging the opportunity divide:** Educational institutions can incorporate AI to scale their capacity, train teachers, support AI tutors, and serve more students, including those with diverse abilities or in remote or resource-constrained regions—all cost effectively.

The Philippines (Continued)

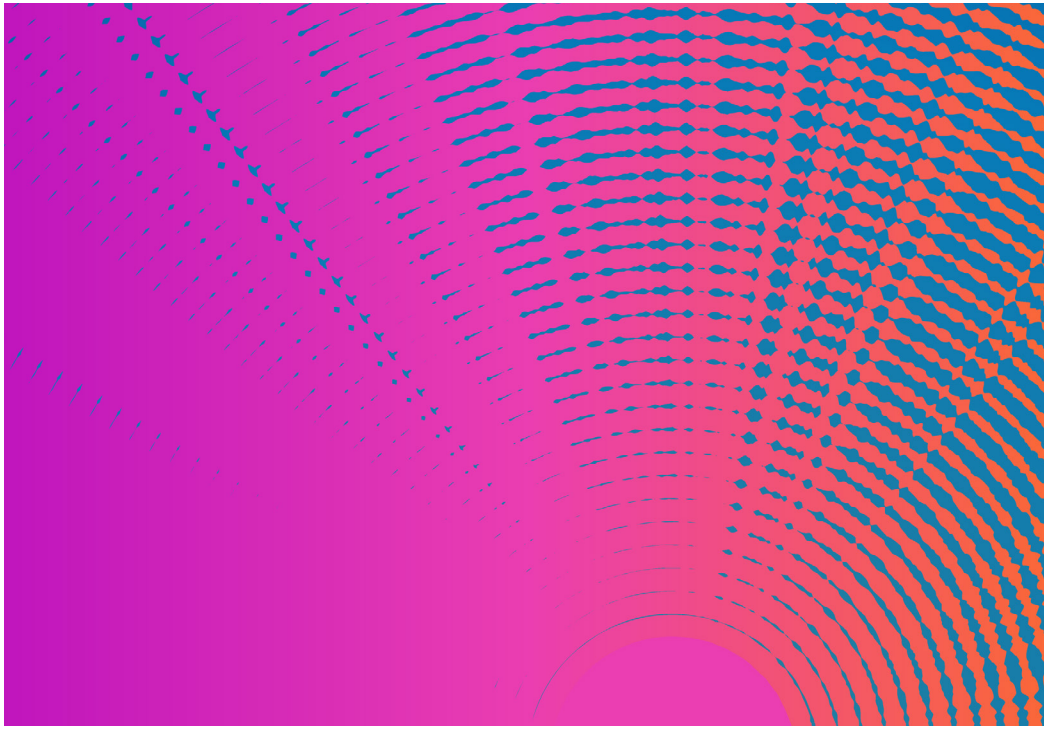
Ecosystem enablers

To unlock the economic and societal potential of AI in the Philippines, leaders could advocate for policies that:

- **Strengthen infrastructure:** Lack of access to hardware and computing power is a key barrier to adoption. The government can invest in infrastructure and coordinate efforts to develop Filipino datasets to support AI adoption and innovation.
- **Promote collaboration and resource-sharing across sectors:** Organizations can pool their resources such as shared labs, data centers, Filipino datasets, industry-academia matching efforts, and even grassroots initiatives. Universities can identify advocates of open source AI at each institution, craft resource sharing agreements for hardware and faculty across institutions, and forge industry partnerships to identify in-demand skills and place students.
- **Promote AI literacy and workforce development:** There is a need to raise awareness of AI, open source AI, and its opportunities across communities more broadly, and to continue building a pipeline of AI talent, including builders and developers. These efforts could include developing training programs and creating research scholarships in fields like open source AI.
- **Set clear AI governance and strategy:** Government agencies can also clarify leadership structures for AI initiatives, develop a comprehensive data governance framework for the AI ecosystem, and include open source AI in the next version of the national AI strategy.

By the numbers

- The Department of Science and Technology (DOST) announced plans to invest over PHP 2.6 billion (USD 44.6 million) for AI projects, on top of PHP 1.4 billion (~USD 24 million) for AI R&D from 2018 to 2024.[87]
- The adoption of AI in the Philippines could boost its economy by USD 31 billion.[88]
- Half (50%) of Filipinos use AI tools at least once a week in their personal lives.[88]
- Wholesale and retail trade is the industry with the highest work transformation in the Philippines.[89]



Singapore

Singapore has earned its top ranking on major AI readiness indices through its national AI policy, political stability, advanced infrastructure, and talent. With active regional and international collaborations (e.g., ASEAN, ISO), the city-state is pioneering best policies and practices. With its strengths in governance and coordination, Singapore is cultivating a trustworthy, inclusive, and productive open source AI ecosystem.

Economic opportunities

Stakeholders across value chains—from researchers, designers, producers, and manufacturers, through distribution, sales, and marketing, to wholesalers, retailers, and end users—can cocreate open source AI solutions that spur innovation, unlock value, and transform industries.

Large businesses can leverage open source AI to reduce vendor lock-in, attract talent, and address requests for explainability and total cost of ownership. Some key sectors that can especially benefit from AI and open source AI include:

- **Manufacturing:** visual quality assurance, predictive maintenance, and digital work instructions.
- **Health and aged care:** clinical summaries, triage, remote monitoring, diagnostic assistance, personalized treatment plans and nudges, and mental wellness via virtual interventions.
- **Financial services:** know-your-customer/anti-money laundering case triage, policy summarization, risk and compliance copilots.
- **Logistics and port management:** demand forecasting, scheduling optimization, and customs documentation.
- **Tourism and retail:** multilingual concierge and hyperpersonalized or localized offers.

Small to medium-sized enterprises and startups can benefit from open source AI by self-hosting models, data, no-code/low-code workflow tools, and retrieval-augmented generation. The Singapore Llama Incubator Program, run by Meta in partnership with the Singapore government, saw startups and SMEs create more than 25 use cases focused on driving business growth, supporting health and wellness, optimizing work, transforming education, and creating value and trust.

Societal opportunities

Strong government advocacy and support have created many opportunities to develop AI for the public good.

- **Public sector innovation:** Singapore has strengths in public sector innovation, including developing AI solutions that streamline internal processes and strengthen public sector service delivery. In addition, Singapore's public sector has crafted governance frameworks that support development of responsible AI. For instance, IMDA's AI Verify Foundation developed the AI Verify testing framework and toolkit for classical AI governance and Project Moonshot for generative AI, and the Monetary Authority of Singapore released the Veritas toolkit for decision-making that affects customers' lives.[90,91,92]
- **AI tailored to local culture:** With economic and social connectivity to the rest of Southeast Asia, coupled with strong AI leadership, Singapore has been using open source AI to lead the development of multilingual and multicultural projects that align with cultural norms and needs. Examples include SEA-LION, Southeast Asian languages in one network,93 and MERaLION, multimodal empathetic reasoning and learning in one network.[94]
- **Labor integration, inclusivity, and wage growth:** AI can personalize education, upskill across learners' lifetimes, and help those with diverse abilities to integrate into the workforce.

Singapore (Continued)

Ecosystem enablers

To seize those economic and societal opportunities, Singapore's leadership can support or expand policies that:

- **Strengthen national AI infrastructure:** Bolster investments in shared compute resources (e.g., cost-shared GPU pools), open data repositories, and deployment stacks, especially for SMEs and research institutions, to innovate at scale and bolster Singapore's competitiveness.
- **Invest more in human capital:** With industry, codesign and colaunch national AI microcredential tracks and expand mid-career conversion programs.
- **Champion sector-specific innovation:** Set up testbeds in the high-potential sectors, and give SMEs vouchers for access to automation tools, AI evaluation services, and upskilling.
- **Govern through trust and standards:** Advocate AI Verify, Project Moonshot, and domain-specific AI governance tools to increase adoption of best practices in safety, transparency, and compliance.
- **Coordinate a national open source ecosystem:** Form a cross-sector steering group to align government, academia, and industry around open source AI development, adoption, and sustainability.

By the numbers

- With a value of 0.8, Singapore ranks highest on the IMF AI preparedness index because of its investment in digital infrastructure, human capital, and innovation and its attention to policies and legal frameworks.[96]
- Singapore ranked 7th globally in number of AI patents per capita.[22]
- About 77% of Singapore's labor force works in occupations with high potential for AI integration.[97]
- SMEs in Singapore tripled their rate of AI adoption in just one year, increasing from 4% in 2023 to 14.5% in 2024.[98]

Case in point: Unlocking innovation in the public sector

The Singapore Academy of Law and Infocomm Media Development Authority (IMDA) developed an AI-powered tool that leverages a fine-tuned Llama model to generate concise summaries of unreported judgments. By automating the summarization process, the tool reduces the time required to produce case summaries from days to 10 minutes on average and expands the number of summarized cases so that lawyers can make faster and more informed decisions.[95]

South Korea

With its world-class talent and globally ambitious private sector, South Korea has a unique opportunity to turn its technological autonomy into a strategic asset through artificial intelligence. Its innovators are eager to dive in, but they need clear public policies and investment in infrastructure.

Economic opportunities

To foster economic growth, South Korea is nudging entrepreneurs and MSMEs to harness AI through open model ecosystems, targeted upskilling, and clearer data governance frameworks.

- **Lowering barriers to innovation:** Through accessible data and open model ecosystems, Korean entrepreneurs and MSMEs can afford to build and deploy AI solutions. For example, South Korean tech giant Naver released a series of HyperCLOVA X SEED models, all lightweight open source LLMs for the Korean language.[99]
- **Shifting to smart manufacturing:** To boost productivity, the automotive industry is using AI to optimize its production line in inspection, robotics, and welding, and the steel industry is automating processes to minimize safety risks.[100]
- **Boosting AI productivity:** By embedding intelligence in hardware, the semiconductor industry is developing chips that can mimic neural network processing and support transformer-type deep learning models for data centers, thereby reducing the economy's dependence on foreign chip makers.[101,102]

Societal opportunities

To advance social well-being, South Korea is applying open innovation and domain-specific AI models to strengthen language access, education, healthcare, and agriculture.

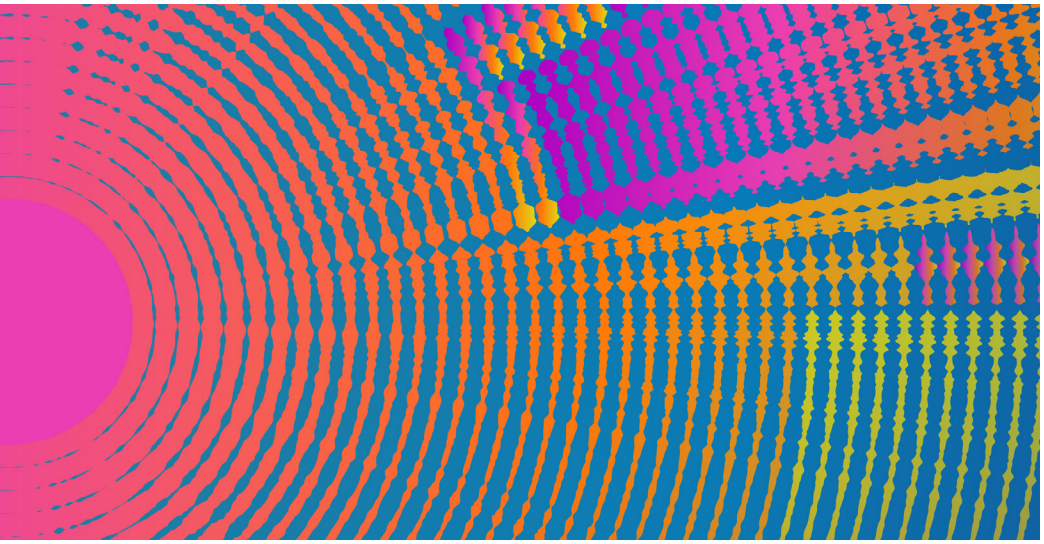
- **Lowering barriers to AI experimentation:** Open source AI lowers the barriers to AI experimentation and enables broader participation in technological development. For example, Gyeongsan Innovation Academy, the National Information Society Agency, and Kyungpook National University launched the AI Computational Resource Sharing Open Source Project to give researchers and students equal access to GPU computational resources.[103]
- **Powering inclusive education:** AI offers opportunities to improve inclusive education and address diverse student needs. For example, the South Korean Ministry of Education announced plans to introduce AI digital textbooks with multilingual translation to support students from diverse backgrounds; and the Korea Energy Technology University is developing AI that can adjust the learning experiences of special education students in real time by analyzing their emotional, cognitive, and behavioral data.[104]
- **Supporting healthcare professionals:** AI can be used to reduce administrative burdens in hospitals and clinics. For example, Seoul National University Hospital developed a medical LLM to help automate tasks like writing patient summaries and processing insurance claims to reduce administrative burdens so that staff can focus on patients' needs.[105]

South Korea (Continued)

Ecosystem enablers

To promote safe, innovative, and equitable AI development, South Korea's leaders could advocate for policies that ensure:

- **Clear legal and institutional foundations for AI data use:** Clarify the institutional foundations for collecting, creating, and using data in developing, training, and deploying AI models in Korea through sharper definitions and use cases.[106] Otherwise, such legal fuzziness may stall innovation.
- **Equitable access to AI infrastructure and public data:** Preserve open access to national GPU infrastructure, increase investment in public R&D, and release high-quality data pools for public use.
- **Practical guidance on open source licensing:** Issue guidance on licensing and how open source licenses apply in practice to advance creative and industrious expression and protect society from harmful applications.



By the numbers

- Incorporating AI into work tasks could unlock USD 476.3 billion of productive capacity for the South Korean economy.[6]
- In 2024, South Korea's semiconductor exports accounted for nearly a quarter (23%) of global chip exports, making it a key hardware player in the AI ecosystem.[33]
- South Korea ranked 1st globally in number of AI patents per capita.[22]
- While 65% of leaders need productivity to increase, 81% of the economy's workers, including managers, said they lacked time and energy to do their work.[50]
- Over three-quarters (79%) of leaders report that, in the next 12 to 18 months, their companies might add AI-focused roles, and 77% might use AI agents as team members to expand their workforce capacity.[50]

Case in point

The Korea Institute of Science and Technology Information (KISTI) used Llama to develop KONI, a Korean-based large language model specializing in scientific and technological information. With the model, users can quickly extract scientific insights and comprehend information in Korean. The model fills a gap not widely addressed by existing models, which often lack the linguistic nuance and domain-specific accuracy necessary for scientific contexts.

Thailand

Using open source AI, Thai innovators can build AI solutions specific to Thailand, responsive to Thai culture, language, and dialects, and yet competitive on a global scale. To capture the benefits of AI, Thailand is driving economic growth through targeted investments and innovation and advancing societal well-being through rights-based applications.

Economic opportunities

To unlock its economic growth, Thailand is supporting local AI innovation, advancing sector-specific applications, and investing in national AI infrastructure and talent.

- **Global competitiveness:** Open source AI serves as a tool for Thai startups and SMEs to compete more easily in the global market, by providing access to AI models at reduced costs and enabling them to innovate and boost productivity.
- **Local innovation:** With open source AI, Thai startups and SMEs can cater to local contexts (e.g., Thai and Isaan dialects) and also tap into government initiatives to accelerate their growth. Thailand's government is establishing ten sector-specific AI centers of excellence to accelerate the operational AI readiness of key industries.[107]
- **Targeted sectors:** Integrating AI solutions into key sectors such as agriculture, manufacturing, tourism, and hospitality services can improve productivity and conserve resources:
  - **Agricultural companies** can combine AI, IoT, and sensors to farm more efficiently and improve yields. In one case, a smart farming platform helped Thai farmers increase productivity by 20% and use 5-10% less water.[108,109] In another case, smallholder Thai rice farmers increased their yields by as much as 37%, cut agrochemical costs by 59%, and improved water usage by 44%.[110]
  - **Hospitality providers** can use AI chatbots to improve customer relationship management. For example, one hotel brand used a multilingual AI chatbot to respond to inquiries about one of its properties and reported a 30% jump in booking conversions there, with 85% of guests appreciating the chatbot's recommendations.[111]
  - **Manufacturers** can use AI for predictive maintenance. Thailand is already seeing innovation in this space. For example, a cement maker deployed AI for predictive maintenance and quality control and reduced its equipment downtime by 30%, and a company in the beverage industry used machine learning to optimize its supply chain and cut logistics costs by 20%.[112]

Societal opportunities

Thailand is leveraging AI to advance social equity and national resilience by investing in talent, solutions for vulnerable populations, and data infrastructure that protects individual rights.

- **Promoting world-class talent:** Open source AI can upgrade Thai occupational standards and engage local talent in fine-tuning local models for global competitiveness. The Thai government has dedicated THB 6 billion (USD 186 million) for AI workforce development.
- **Empowering the vulnerable:** Local AI hackathons can develop solutions that support elderly care for Thailand's aging populace, sign language recognition for persons with hearing loss, and disaster preparedness and response.

Thailand (Continued)

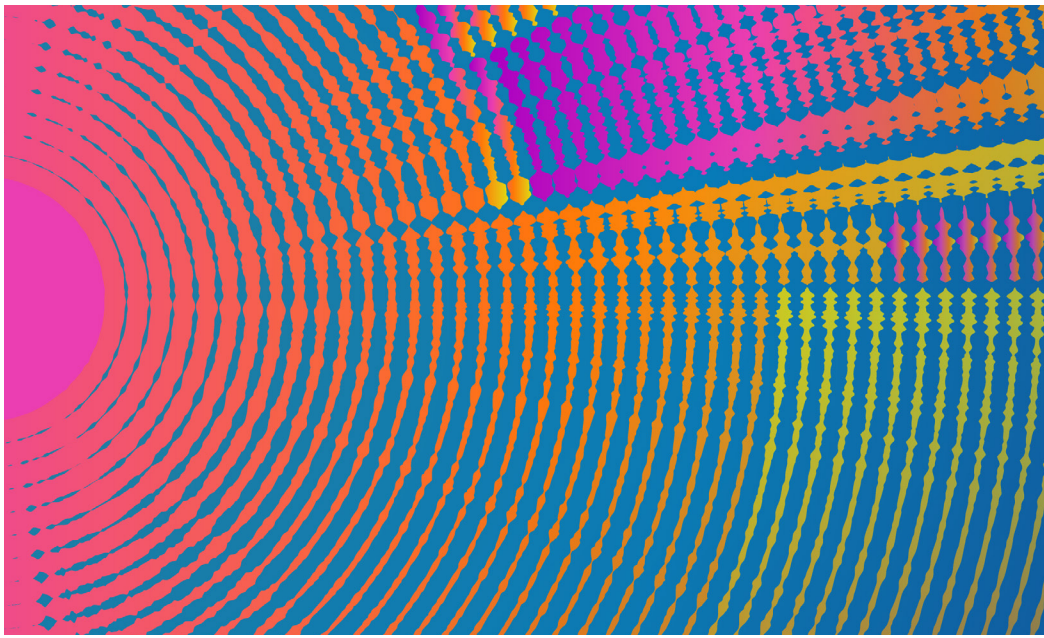
Ecosystem enablers

To harness AI for economic growth and societal advancement for everyone, Thailand's leaders have advocated for policy measures that:

- **Strengthen AI talent pipelines:** Align AI curricula with real-world needs as Mahidol University International College has done, improve graduate programs, and promote interdisciplinary teamwork so that graduates are job-ready.
- **Resolve statutory barriers:** The Thai government has earmarked THB 2 billion (USD 62 million) for creating a National Data Bank in compliance with its Personal Data Protection Act (PDPA) so that, in building AI solutions for public good, developers can access and use data about people without invading anyone's privacy or individual rights.[113]
- **Foster innovation through open collaboration:** Accelerate cross-pollination of ideas via government-led challenges, support platforms from global tech companies, and open hackathons that showcase creative-problem solving and fast-track solutions to immediate problems.
- **Implement a coordinated national AI strategy:** Coordinate and tailor an AI strategy to Thailand's needs by prioritizing strategic sectors, distributing talent equitably, developing a Thai foundation AI model, and subsidizing SME access.

By the numbers

- AI adoption in Thailand has the potential to unlock THB 2.6 trillion (USD 80 billion) in economic benefits in 2030.[114]
- The government is investing THB 1.99 billion (USD 61 million) in an open source AI platform and a National Data Center in its efforts to establish Thailand as a regional AI hub.[115]
- Thailand's AI legislation aims to create an innovation-friendly ecosystem by reducing regulatory obstacles and facilitating public–private partnerships in AI R&D.[116]
- The National Artificial Intelligence Committee has approved a government investment of THB 25 billion (USD 775 million) to drive AI development over 2026 and 2027.[113]



Viet Nam

For Viet Nam, artificial intelligence is an accelerant of the economy's participation in the Fourth Industrial Revolution. "Artificial intelligence, particularly open source AI, is a central pillar for Viet Nam's economic growth and global competitiveness. As we strive to become an 'AI nation' by 2030, it's crucial that global corporations like Meta provide open source models that enable our businesses to develop and innovate on these platforms," said Mr. Võ Xuân Hoài, deputy director of the Viet Nam National Innovation Center. "Projects like ViGen demonstrate the potential of shared open source models in reducing costs, promoting innovation, and building national capacity."

Economic opportunities

The study's participants saw Viet Nam's potential, not just as a strong user of AI but as a strong provider of open source AI solutions, datasets, and native language models for the entire Southeast Asian region and beyond. They thought the economy had the policies and national strategies in place to realize that potential.

- **Level playing field:** "The gap between advanced and developing countries was very large because of unequal access to technology, data, and information. Open source has largely closed that gap," said one participant. Entrepreneurs in rural areas, women-led enterprises, and SMEs are using AI to improve their business models and tweaking open models to deploy low-cost solutions quickly in service of Vietnamese use cases.
- **Industry advantages:** In manufacturing, businesses can adopt AI for predictive maintenance, quality control, and process optimization. In logistics, operators can use AI for demand forecasting, optimizing routes and warehouses, automating customs clearance, and enhancing cold chain efficiency. In agriculture, open source AI can support cooperatives and smallholder farms through crop monitoring, early pest detection, and yield optimization. Smart agriculture will improve productivity forecasting and supply chain management.
- **Strong and resilient workforce:** In talent development, AI can help people adapt to the changing economy by efficiently reskilling, upskilling, and reintegrating into the economy.

Societal opportunities

Several participants pointed out the cross-border "sharing of initiatives on talent development and utilization." They saw the "use of talent pools across countries, whether it's people from one [economy] working with another on business models," as a real advantage.

- **Tailored to culture:** Several participants saw accelerated development of open source models, customized by local innovators to suit the Vietnamese language and deliver local products and services. "The key is high-quality open data specific to Viet Nam," said one participant.
- **Healthcare:** AI can reduce the burden on large hospitals and improve access for people in remote areas through preliminary online consultations, telemedicine platforms, and mental health monitoring solutions vital to preventive care.
- **Education:** Virtual teaching assistants and AI tutors can improve instruction and personalize learning to deliver comparable and affordable educational infrastructure to urban and rural areas without constructing expensive centers.
- **Public safety:** In climate-related disaster management, communities can use AI for flood and weather forecasting, advance warnings, and relief coordination, especially in the Mekong Delta region.
- **Resource efficiency:** Open source AI connected to sensors can greatly enhance efforts to reduce energy usage, lower emissions, and simulate emergency management options.

Viet Nam (Continued)

Ecosystem enablers

To strengthen Viet Nam's position in the global AI landscape, its leaders could advocate for policies that do the following:

- **Scale up engineering talent:** Strengthen the quality of the talent pipeline in Viet Nam to absorb technology created outside the economy. "We have good engineers who can train models. We need engineers who can work with scalable systems and big infrastructure."
- **Cultivate a culture of open innovation:** Urge organizations to follow open source principles and educate users to be more open in terms of IP ownership. "If you get something from the public, then you must return it to the public."
- **Increase access to quality data:** Continue to provide access to high quality, public, local data sources and provide appropriate technical advice for Project ViGen, a partnership between Meta, the Viet Nam National Innovation Center, and the AI for Viet Nam Foundation to create high quality, open source Vietnamese datasets for AI model, to enhance open datasets, engage developers, and to create benchmarking tools for accelerating Vietnamese-language AI development.
- **Invest in advanced infrastructure:** Prioritize investment in high-performance computing, energy-efficient data centers, and robust digital infrastructure to support large-scale AI development and deployment.

By the numbers

- AI is spurring innovation in Viet Nam: its National Innovation Center is expanding partnerships, investment opportunities, and R&D in its semiconductor and digital sectors.[10]
- Viet Nam is projected to gain up to USD 120–130 billion in benefits from AI by 2040, with manufacturing representing the sector with the highest level of gain.[10]
- Only 27% of Vietnamese organizations feel ready to adopt AI, but over 50% of individuals are positive about AI.[118,119]

Case in point: A huge boost in staff productivity

In collaboration with one of Viet Nam's leading software companies, the Ministry of Science and Technology (MISA) developed a virtual assistant using Llama to automate retrieval and simplify administrative workflows in ministries. This assistant has reduced retrieval time from 30 minutes to 30 seconds.[117]

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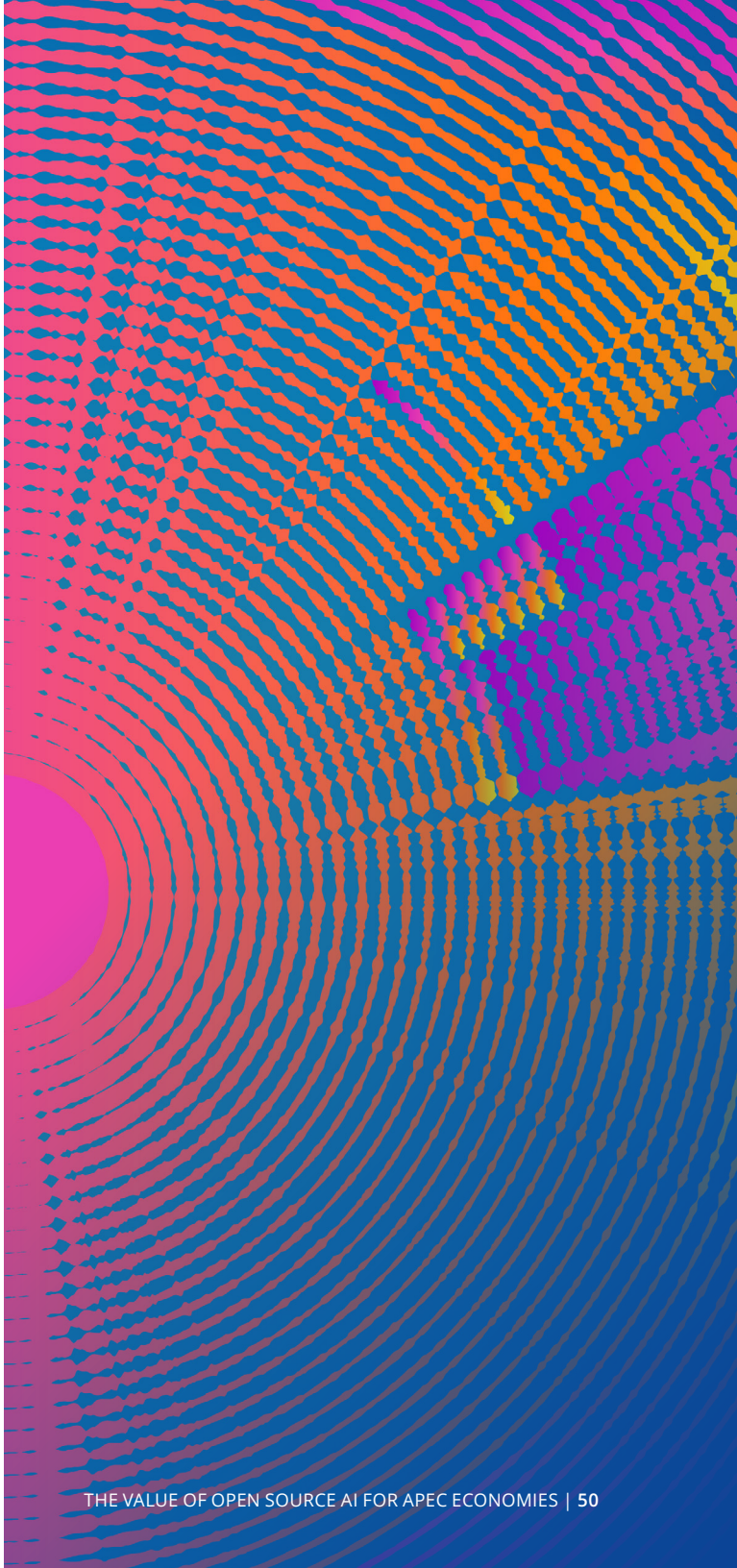

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