CIIS Report

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

China Institute of International Studies
China Academy of Information and Communications Technology

December 2024

Artificial intelligence (AI) is driving a profound wave of technological revolution and industrial transformation, with the potential to reshape all aspects of human economic and social life. At the same time, the rapid advancement of AI technologies also introduces new challenges in security and ethics, becoming a prominent topic in global governance. China and ASEAN are comprehensive strategic partners with a strong foundation for cooperation in the fields of digital economy and AI development. In the face of the AI technology wave, China and ASEAN should further strengthen cooperation, share the dividends of technological progress, and make every effort to avoid and mitigate the risks and challenges posed by these technologies.

The China Institute of International Studies and the China Academy of Information and Communications Technology organized dedicated teams to conduct systematic research on global trends in AI development and governance, AI development and governance in China, AI development and governance in ASEAN, and China-ASEAN AI cooperation. The research results, together with an outlook for the China-ASEAN AI cooperation built on them, have been formed into this research report.

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Contents

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01

Preface

01 Preface

Artificial intelligence (AI) technology is spearheading a new wave of technological revolution and industrial transformation, driving advancements of the wave deep into multiple fields. AI not only empowers various industries but also creates new industrial formats and economic growth drivers. It is set to become a key factor in shaping a country's overall strength and international competitiveness. Furthermore, AI provides new solutions for significant global issues such as energy, public health, urban planning and environmental protection. On the other hand, the rapid development of AI also brings with it challenges related to privacy, security and ethics, and may potentially widen the "AI divide" within the international community. Global governance efforts in this regard are underway. China and ASEAN are comprehensive strategic partners, geographically adjacent, culturally connected and aligned in values. They have already established a solid foundation for cooperation in the digital economy and AI development. Both sides shall further strengthen cooperation in AI development and governance, deepen their comprehensive strategic partnership and work together to advance the building of a closer China-ASEAN community with a shared future.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

02

Global Landscape of AI Development and Governance

- Rapid Development of AI Technologies and Industry
- Increasing Imbalance in AI Development
- Global AI Governance Framework Is Taking Shape

02 Global Landscape of AI Development and Governance

The global AI industry is experiencing explosive growth, accelerating the arrival of the intelligent era and profoundly transforming human production and lifestyles. How to deepen international cooperation, promote inclusive sharing of the benefits from AI development and jointly address potential risks from AI applications? This question has become a shared concern of the international community.

1. Rapid Development of AI Technologies and Industry

Since its inception at the 1956 Dartmouth Conference, AI has gone through three major waves of development. With the launch of ChatGPT in November 2022, generative large models have ushered AI development into a new phase. According to the White Book on the Development of Artificial Intelligence (2024), the global AI industry reached a scale of US$ 707.8 billion in 2023, marking a year-on-year growth of 19.3%.[①] As the industry continues to expand, the economic and social impact of AI is becoming increasingly significant.

1.1 Significant breakthroughs in AI technology development over the past decade

AI technology has progressed through four stages to date (Figure 1): the

[①] Shenzhen Artificial Intelligence Industry Association, Shenzhen Easylink Digital Science & Technology Co., Ltd, "The White Book on the Development of Artificial Intelligence (2024)", April 2024, https://www.sz.gov.cn/cn/xxgk/zfxxgj/zwdt/content/post_11531060.html.

phase of embryonic exploration, the phase of expert systems, the phase of machine learning and the phase of large models, the first two characterized by symbolism, and the last two by connectionism. AI technology began large-scale application as breakthroughs were made in the machine learning phase that started in the 1990s. **In image recognition**, AI algorithms such as convolutional neural networks (CNN) have been extensively applied, effectively extracting both local features and global information of images through a combination of convolutional, pooling and fully connected layers. In 2015, ResNet, developed by four researchers, including He Kaiming, at Microsoft Research Asia, surpassed human capabilities in image recognition for the first time.

In speech recognition, end-to-end deep learning has been used to recognize multiple languages, including Chinese and English. In December 2015, Baidu Research announced that its Deep Speech system had achieved better-than-human-level Chinese recognition performance. **In natural language processing,** AI has been widely used for tasks such as text classification, sentiment analysis and machine translation. The introduction of the attention mechanism, in particular, enabled models to focus on key parts of input sequences, enhancing their ability to handle long texts. Google's Transformer model, developed in 2017, not only achieved significant results in machine translation through self-attention mechanisms but also became a foundational milestone propelling AI into the phase of large models.

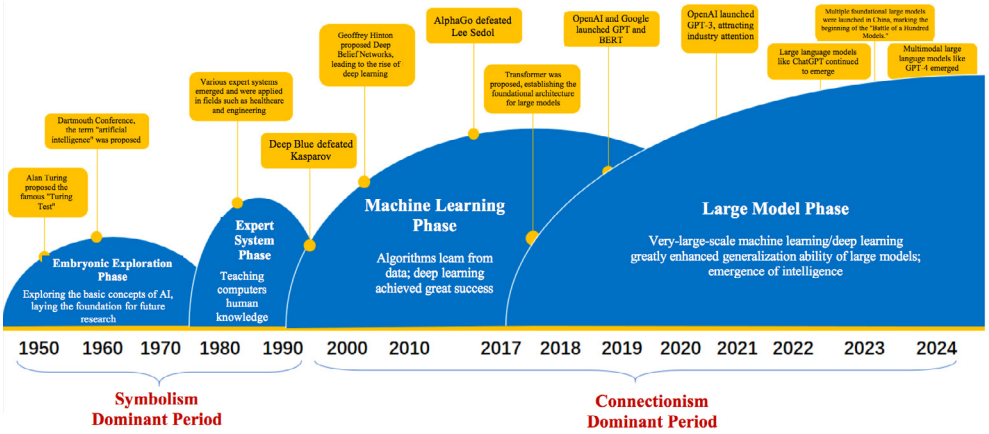

Figure 1. Phases of AI Development

Source: China Academy of Information and Communications Technology

1.2 Large model technology grants AI initial universality, enabling applications across multiple fields

As AI technology advances into the phase of large models, the rise of generative large models has attracted worldwide attention. These models typically contain anywhere from billions to trillions of parameters, learning generalized feature representations through large-scale pretraining on massive amounts of unlabeled data, followed by fine-tuning for specific tasks. Compared to traditional AI, large models demonstrate powerful universality and adaptability across various tasks and scenarios (Figure 2).

Firstly, large models offer strong scalability. In these models, increasing the number of parameters, computational capacity and training data results in continuous performance improvements—a characteristic not present in traditional AI models, where scaling does not yield sustained performance gains. **Secondly, large models demonstrate high adaptability across multiple tasks.** A single large model can support various tasks and modalities, even achieving cross-modal capabilities, whereas traditional AI models are typically limited to single-task, single-modal applications. **Finally, large models exhibit strong plasticity.** Through model fine-tuning, chain-of-thought prompting and similar techniques, large models can further enhance their capabilities, unlike traditional AI models, which cannot expand their abilities once training is complete.

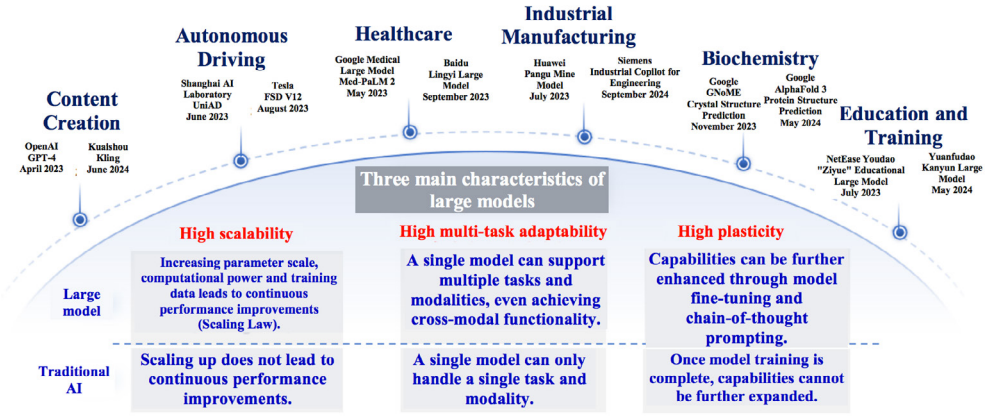

Figure 2. Features and Applications of Large Models

Source: China Academy of Information and Communications Technology

1.3 AI is applied in depth across numerous industrial sectors

In content creation, many media companies and content platforms use large models to automatically generate news articles, creative content and other materials, with better efficiency and quality too. Currently, AI-generated outputs, particularly in fields like financial news and commercial illustration, are widely recognized for their quality and can be used in commercial settings either with some fine-tuning or directly.

In autonomous driving, intelligent driving systems utilize data collected from cameras, radars and ultrasonic sensors to extract environmental information—such as vehicles, pedestrians and traffic signs, and analyze road conditions and adjust driving strategies in real time, significantly enhancing driving safety and comfort. The advancement of autonomous driving technology has accelerated growth in the electric vehicle industry.

In healthcare, AI leverages large volumes of medical imaging data to assist doctors in disease diagnosis, improving both accuracy and efficiency. Notable achievements include AI applications in detecting lung cancer through CT scans, identifying skin cancer and screening for eye diseases. Additionally, AI can support personalized, more precise treatment recommendations by analyzing genomic data, medical history and lifestyle information.

In industrial manufacturing, AI has acquired the ability to encapsulate expert knowledge and enhance production efficiency. It plays a key role in substituting humans for hazardous and repetitive tasks while also showing potential in areas like CAD research and development and intelligent equipment. In smart mining, for instance, AI contributes to intelligent production, equipment management, safe operations and business decision-making.

In biochemistry, large model technology is applied in technological research, such as protein structure prediction. In 2024, Demis Hassabis and John M. Jumper of Google DeepMind were awarded the Nobel Prize for jointly leading the development of AlphaFold2, which showcased AI's potential to address long-standing biological challenges.

In education and training, digital humans can act as virtual teachers, aiding students in learning and guiding employees through training processes. AI technology can also improve access to high-quality educational resources for children in underprivileged or remote areas, helping to reduce the urban-rural education gap.

In summary, AI has created immense commercial value across various industries globally, giving rise to a range of new sectors and profoundly transforming human production and lifestyle, with far-reaching impacts on the economy and society.

1.4 AI will have broader and deeper impacts on the economy and society

AI technology has positive impacts such as increased efficiency and economic growth, but it also presents risks like job displacement and widening the digital divide, which requires close attention. From an **economic growth perspective,** generative large models, as a new general-purpose technology, are expected to drive productivity gains. In a March 2023 report, Goldman Sachs projected that AI, if widely adopted, could boost global GDP by an average of 7% annually over the next decade, contributing nearly US$7 trillion.[①]

From the **employment perspective,** AI-driven automation could replace approximately 18% of jobs worldwide, affecting 300 million positions. However, the extent of the impact varies by industry, with emerging economies expected to experience less job displacement due to automation compared to developed economies.[②]

From a **social governance perspective,** large models can assist government departments in urban planning, traffic management and public security by analyzing vast amounts of data. At the same time, generative AI may further

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① "The Potentially Large Effects of Artificial Intelligence on Economic Growth", March 26 2023, https://www.gspublishing.com/content/research/en/reports/2023/03/27/d64e052b-0f6e-45d7-967b-d7be35fabd16.html.

② Ibid.

disadvantage vulnerable groups if accessibility is limited or if biased outputs emerge, potentially harming social equity.

2. Increasing Imbalance in AI Development

In stark contrast to the rapid development and application of AI technology, most countries, especially developing ones, have yet to truly access, use and benefit from AI. A survey by the United Nations (UN) Secretary-General's High-level Advisory Body on Artificial Intelligence of over 120 experts from 38 countries found that most experts believe AI will have a positive impact on higher-income countries earlier on, and they remain cautious about AI's potential to reduce inequality (Figure 3).[①] Developing countries have significantly lower access to critical elements such as infrastructure, data, models and talent compared to developed countries.

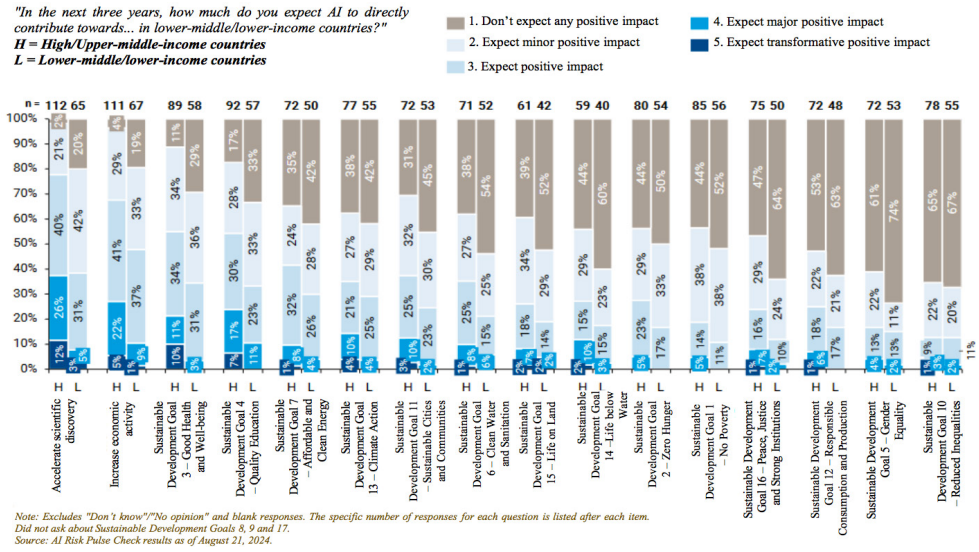

Figure 3. AI's Contribution to National Development and Sustainable Development Goals Over the Next Three Years

Source: Final Report of the UN Secretary-General's High-level Advisory Body on Artificial Intelligence

① "Final Report: Governing AI for Humanity", September 2024, https://www.un.org/ai-advisory-body.

2.1 Significant gap in digital infrastructure

With advancements in large models and generative AI, AI technology has transitioned from isolated applications to scaled deployment across a broad range of industries, demanding more from foundational infrastructure. However, developing countries still face significant gaps in network access and computational power.

Firstly, in terms of network access, the *Measuring Digital Development: Facts and Figures 2023* report by the International Telecommunication Union (ITU) indicates that while global internet connectivity has made steady progress, development remains uneven, with many low-income countries increasingly left behind.[①] In 2022, 2.6 billion people worldwide still lacked internet access, and in Africa, only 37% of the population used the internet—less than half the levels in North America and Europe, where about 90% are connected. In low-income countries, the monthly average data usage per fixed broadband user was 161 GB, just 60% of the global average of 257 GB. Additionally, 5G mobile network distribution is uneven, with 89% of the population in high-income countries covered by 5G, while low-income countries have virtually no 5G access. Low levels of internet access limit the use of AI services in developing countries.

Secondly, regarding computational power, as defined by the Organisation for Economic Co-operation and Development (OECD), AI computational power encompasses the hardware and software stack supporting specialized AI workloads and applications, including data centers, supercomputers and cloud computing.[②] According to Synergy Research Group, a market survey institution, as of the end of 2023, hyperscale data centers are predominantly located in

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① ITU, "Measuring Digital Development: Facts and Figures 2023", November 27, 2023, https://news.un.org/zh/story/2023/11/1124322.

② "A blueprint for building national compute capacity for AI", OECD, February 28 2023, https://www.oecd-ilibrary.org/docserver/876367e3-en.pdf?expires=1728870337&id=id&accname=guest&checksum=891E32CEBE7040A85F291B4406294F95.

North America, Asia-Pacific and Europe.[①] The increasing scale and precision of large models, along with the expansion of intelligent applications, demand higher computational support. Huawei's *Intelligent World 2030* report predicts that by 2030, AI computing power demand will reach 864 ZFLOPS, indicating a hundredfold increase over a decade. This surge in demand for computing power is expected to become the norm.[②] The lack of affordable computational resources will hinder developing countries from integrating into the global AI industry ecosystem.

2.2 Uneven distribution of dataset resources

Data forms the foundation of AI model training and is crucial in determining performance and specialization. Currently, most mainstream AI large models are trained primarily on English corpora. For instance, English comprises about 92.6% of the training corpora for ChatGPT-3, with significant representation from 16 languages like English, French, German and Spanish—collectively accounting for over 99.24%, while smaller languages contribute minimally.[③] Countries leading in the digital economy initiated digital transformation earlier and have accumulated large amounts of effective data across production, daily life and public services. However, due to slower digitalization, most developing countries have yet to convert vast information into usable data, and they lack high-quality datasets processed through steps such as annotation and cleaning.

Additionally, developing countries face challenges in public data openness and integration. According to the World Bank's 2022 Statistical Performance Indicators (SPI), developing countries in regions like Africa, Latin America and the Asia-Pacific

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① "Hyperscale Data Centers Hit the Thousand Mark; Total Capacity is Doubling Every Four Years", Synergy Research Group, April 17 2024, https://www.srgresearch.com/articles/hyperscale-data-centers-hit-the-thousand-mark-total-capacity-is-doubling-every-four-years.

② "Intelligent World 2030", Huawei, https://www.huawei.com/en/intelligent-world.

③ Yao Xuchen, "The Negative Effects of Artificial Intelligence: Languages Without Large Language Models Will Disappear in the Future", June 11, 2024 https://mp.weixin.qq.com/s?__biz=MjM5NDEyNjE0MQ==&mid=2652685829&idx=1&sn=51114897eec387531d0a95bd752658e3.

lag in the open sharing of census, administrative and geospatial data.[①]

2.3 High concentration of large models

The global distribution of large models remains highly concentrated, with China and the United States together accounting for over 80% of all large models as of May 2023 (Figure 4).[②] Countries such as France, Germany, Russia and Israel possess only a limited number. Most developing countries are notably absent from this landscape. A primary factor contributing to this concentration is the high cost. According to estimates from a Stanford research team, the training costs for OpenAI's GPT-4 and Google's Gemini Ultra in 2023 were approximately $78 million and $191 million, respectively.[③]

Notably, open-source AI models present an opportunity for technology diffusion but also pose substantial security challenges. Open-source models, by making source code available for access, modification and distribution, significantly reduce the costs for individuals and businesses to adopt and use AI technology. This increases the feasibility for developing countries to deploy localized large models. However, open-source systems also face a range of security issues, including value-based biases, misuse and vulnerabilities to attacks.

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① World Bank Group data, https://datanalytics.worldbank.org/SPI/.

② Institute of Scientific and Technical Information of China, "China AI Large Model Map Research Report", May 2023, https://www.istic.ac.cn/html/1/284/338/1506840038330332778.html.

③ "The AI Index Report: Measuring Trends in Artificial Intelligence", Stanford University Human-Centered Artificial Intelligence, https://aiindex.stanford.edu/report/.

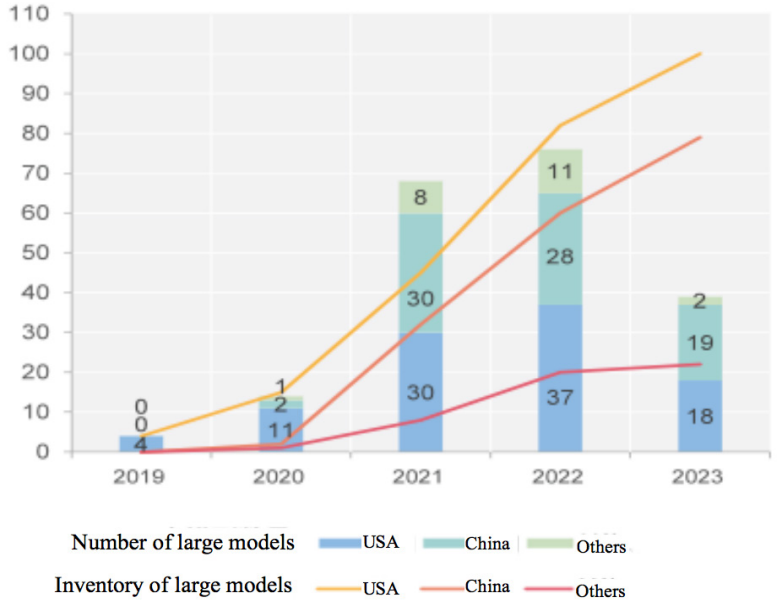

Figure 4. Number of Large Models Worldwide

Source: Institute of Scientific and Technical Information of China, China AI Large Model Map Research Report

2.4 Significant talent gap

Regarding top-tier talent, Tsinghua University's *Report on Artificial Intelligence Development 2011–2020* identified 1,833 high-level scholars (de-duplicated) in the AI 2000 list, spanning 37 countries, with a concentration in North America, Europe and East Asia. High-level scholars from South America and Africa are scarce. Among them, the United States, China and Germany rank as the top three countries in terms of the number of high-level AI scholars, while the number in other countries remains below 100 (Figure 5).[①] On the professional talent side, developing countries have a weak foundation for

① Tsinghua-CAE Joint Research Center for Knowledge & Intelligence, Institute for Artificial Intelligence, Tsinghua University, "Report on Artificial Intelligence Development 2011–2020", https://static.aminer.cn/misc/pdf/zpAIreport2020.pdf.

education and limited research capabilities in AI-related fields such as IoT, data science, natural language processing and machine learning. UNESCO statistics on G20 members show that the number of graduates in science, technology, engineering and mathematics (STEM) and information and communication technology fields is significantly lower in developing countries compared to developed ones. For instance, the share of STEM graduates in South Africa and Turkey is only 18.71% and 15.8%, respectively, about half of Germany's leading rate of 35% (Figure 6).[①]

Furthermore, the strong global demand for AI talent has intensified talent outflows from developing countries. A contributing factor is that AI business models in developing countries remain in the early stages, providing insufficient job opportunities.

Figure 5. Country Distribution of High-level Scholars on the AI 2000 List
Source: Tsinghua-CAE Joint Research Center for Knowledge & Intelligence and Institute for Artificial Intelligence, Tsinghua University, "Report on Artificial Intelligence Development 2011–2020"

① "Toolkit for Artificial Intelligence Readiness and Capacity Assessment", UNESCO, September 2024, https://www.gov.br/mcom/pt-br/acesso-a-informacao/governanca/governanca-de-tic-1/documentos-g20/p4-g20-dewg-brasil-2024-toolkit-for-ai-readiness-and-capacity-assessment.pdf.

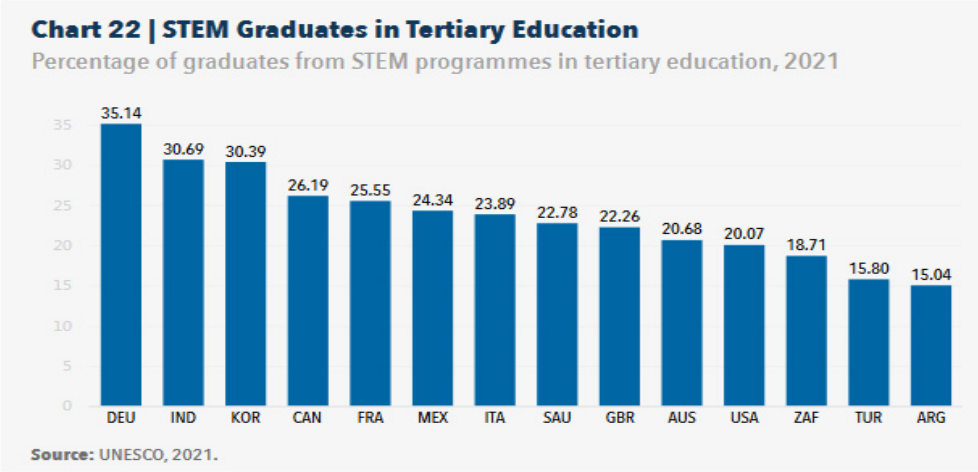

Figure 6. Percentage of Graduates from STEM Programmes in Tertiary Education Among Select G20 Members in 2021

Source: UNESCO, Toolkit for Artificial Intelligence Readiness and Capacity Assessment

3. Global AI Governance Framework Is Taking Shape

3.1 Awareness of AI risks is gradually increasing

As a strategic and general-purpose technology, AI has the potential to trigger systemic, global risks, drawing significant attention from all sides. From a technical perspective, the "hallucination" and "emergence" effects of AI large models can result in unreliable content and uncontrollable capabilities, significantly increasing uncertainty in governance targets.

From the perspective of AI users, the growing power of AI systems combined with decreasing accessibility barriers raises the risk of individuals using AI for unethical activities or activities that threaten public safety, while managing AI system users is increasingly challenging. **Looking at the future of human-machine interaction,** AI may potentially substitute labor, innovation and even knowledge and beliefs.

AI technology poses complex risks to individual, corporate, societal and national security, and as the scope of application broadens, the list of potential risks continues to grow.

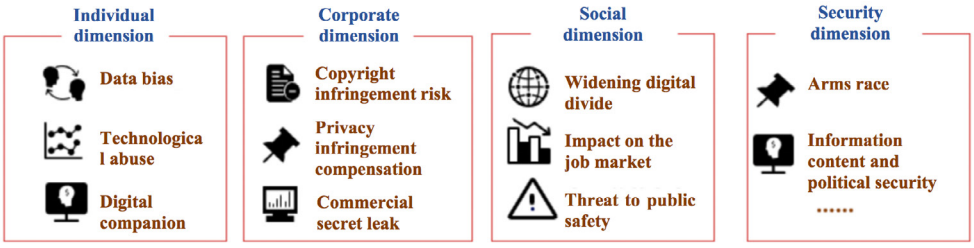

Figure 7. Risks Posed by AI Across Different Dimensions
Source: China Academy of Information and Communications Technology

3.2 Major economies are advancing AI governance through various ways based on national contexts

The European Union has enacted the world's first dedicated AI legislation, continuing its approach of "regulation leading, industry following." In August 2024, the EU's Artificial Intelligence Act officially came into effect, adopting a risk-based AI supervision concept. It implements tiered regulation of AI systems based on application scenarios, imposing strict pre-approval procedures and compliance obligations in high-risk areas.

The United States adheres to a "development through governance" philosophy, with the core objective of maintaining and expanding its international leadership in the AI industry. In October 2023, the Biden administration issued the *Executive Order on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.*

In October 2024, President Joe Biden issued a national security memorandum on AI, integrating AI technology into national security considerations to ensure that the U.S. retains a leading role in the development of advanced global AI systems.

The United Kingdom has adopted an "innovation-driven, decentralized regulation" approach, aiming to steer the international agenda for AI safety governance. The UK released *A Pro-Innovation Approach to AI Regulation Whitepaper,* directing sectoral authorities to assess risks based on AI usage within their specific fields, with a preference for lighter intervention methods such as industry guidelines, technical standards and toolkits.

China adopts a balanced approach to development and security, implementing prudent regulations, creating an environment conducive to growth, advocating for global cooperation in AI governance and emphasizing the importance of bridging the AI divide. In December 2021, China issued the *Ethical Norms for New Generation Artificial Intelligence,* introducing ethical guidelines across the entire AI lifecycle.

In July 2023, China released the world's first regulatory framework for generative AI, the *Interim Measures for the Administration of Generative Artificial Intelligence Services,* with a governance approach centered on enhancing model transparency. This initiative sent a positive signal for promoting innovation and regulating the development of generative AI.

In September 2024, China launched the *AI Safety Governance Framework.* Based on a risk management philosophy, the Framework addresses intrinsic model security risks and application safety risks with corresponding technical solutions and comprehensive prevention measures.

On the international stage, in October 2023, President Xi Jinping proposed the *Global AI Governance Initiative* at the Third Belt and Road Forum for International Cooperation. This initiative advocates for a "people-centered and AI for good" principle, urging countries to enhance information exchange and technological cooperation on the governance of AI, develop AI governance frameworks, norms and standards based on broad consensus and increase the representation and voice of developing countries in global AI governance.

In July 2024, the World AI Conference & High-Level Meeting on Global AI Governance held in Shanghai issued the *Shanghai Declaration on Global AI Governance.* The Declaration proposed a series of initiatives, including

promoting AI development, maintaining AI safety and developing the AI governance system.

To bridge the digital and AI divide, particularly to help the Global South benefit equally from AI development, China proposed the "AI Capacity-Building Action Plan for Good and for All", calling on all parties to step up investments in AI capacity-building.

Overall, major global economies are seeking a balance between innovative development and safety assurance, implementing governance practices from multiple perspectives, including ethics and value alignment, enhancing AI system transparency, governing training data, protecting intellectual property, ensuring content security and preventing misuse. In this phase of rapid AI technological evolution and significant risk uncertainty, both the EU and China have adopted a comprehensive, lifecycle-based regulatory model that emphasizes proactive regulation while also addressing mid- and post-development oversight. However, unlike the EU with more comprehensive AI legislation; China has adopted a "precisely targeted" legislative strategy, introducing regulatory requirements for specific application areas, reflecting an agile governance approach. In contrast, federal legislative progress in the United States has been slower, primarily consisting of policies and guidelines that emphasize industry self-regulation.

Table 1: AI-Related Policies and Regulations of Major Economies

Country	AI-Related Policies and Regulations	Date
EU	*Artificial Intelligence Act*	May 2024
USA	*Blueprint for an AI Bill of Rights*	October 2022
	AI Risk Management Framework (AI RMF 1.0)	January 2023
	Executive Order on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence	October 2023
	AI Risk Management Framework: Generative Artificial Intelligence Profile	June 2024
	Proposed Rule for Establishment of Reporting Requirements for the Development of Advanced Artificial Intelligence Models and Computing Clusters	September 2024
	Memorandum on Advancing the United States' Leadership in Artificial Intelligence; Harnessing Artificial Intelligence to Fulfill National Security Objectives; and Fostering the Safety, Security, and Trustworthiness of Artificial Intelligence	October 2024
UK	*Generative AI Framework*	January 2024
	A Pro-innovation Approach to AI Regulation	July 2023
China	*New Generation Artificial Intelligence Development Plan*	July 2017
	Ethical Norms for New Generation Artificial Intelligence	December 2021
	Provisions on the Administration of Algorithm-generated Recommendations for Internet Information Services	December 2021
	Provisions on the Administration of Deep Synthesis of Internet Information Services	November 2022
	Interim Measures for the Administration of Generative Artificial Intelligence Services	July 2023
	Measures for Scientific and Technological Ethics Review (for Trial Implementation)	September 2023
	Global AI Governance Initiative	October 2023
	AI Safety Governance Framework	September 2024

Source: China Academy of Information and Communications Technology

3.3 The UN as a key driver of global AI governance

The complex impacts of AI technology transcend geographic boundaries, necessitating global solutions. As an organization with the broadest membership,

founded on widespread acceptance of the UN Charter and embracing global cultural diversity, the UN holds a natural advantage and legitimacy in coordinating major issues of AI development and governance worldwide. It provides a crucial platform for stakeholders to share knowledge and experiences and discuss norms and principles.

Firstly, the UN General Assembly has adopted important resolutions on AI governance. In 2024, the General Assembly adopted two landmark AI resolutions: *Seizing the Opportunities of Safe, Secure and Trustworthy Artificial Intelligence Systems for Sustainable Development and Enhancing International Cooperation on Capacity-building of Artificial Intelligence.* These resolutions emphasize bridging the AI divide, promoting governance methods and frameworks for safe and reliable AI systems and enhancing international cooperation in capacity-building for developing countries.

The resolutions reflect the UN's proactive stance in leveraging AI for sustainable development and provide guidance on truly unleashing AI's potential and realizing inclusive, accessible and sustainable development of AI. Thus, they support the achievement of the UN's 2030 Sustainable Development Agenda.

Secondly, efforts are underway to establish a new institution for coordinating global AI governance. In September 2024, the High-level Advisory Body on Artificial Intelligence, convened by the UN Secretary-General, released its final report, *Governing AI for Humanity.* The report recommends various initiatives, including launching a policy dialogue on AI governance, creating an international scientific panel on AI, establishing an AI standards exchange, forming an AI capacity development network and creating a global fund for AI. It also suggests setting up an AI Office within the UN Secretariat to enhance a coherent UN-wide approach to AI governance.

Among these, the policy dialogue on AI governance and the international scientific panel on AI have been incorporated into the *Global Digital Compact* and will likely be implemented first, as they received authorization from member states at the upcoming Summit.

Thirdly, specialized UN agencies have been actively implementing AI governance

initiatives. UNESCO's 193 member states jointly adopted the *Recommendation on the Ethics of Artificial Intelligence,* creating the world's first ethical framework for AI. An expert group was also formed to develop the Readiness Assessment Methodology (RAM) to facilitate the implementation of ethical guidelines in different countries.

ITU has long engaged in AI standardization research, collaborating with various stakeholders to issue over 220 standards covering sectors like cyberspace, healthcare, transportation and emergency response. Currently, ITU is working with the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) on digital watermarking standards. Additionally, ITU regularly hosts the Artificial Intelligence for Good Summit and publishes resources such as the AI for Good-Innovate for Impact Final Report, fostering AI application exchange and cooperation.[①]

Other specialized agencies, such as the World Health Organization (WHO), International Labour Organization (ILO) and Food and Agriculture Organization (FAO), are accelerating research on AI applications and associated risks in their fields, producing guidelines, casebooks and recommendations to proactively address the transformative trends brought about by AI.[②]

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① "AI for Good-Innovate for Impact Final Report 2024", International Telecommunication Union,https://www.itu.int/net/epub/TSB/2024-AI-for-Good-Innovate-for-Impact-final-report/.

② "United Nations System White Paper on AI Governance", May 2 2024, https://unsceb.org/united-nations-system-white-paper-ai-governance.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

03

AI Development and Governance in China

- AI Technologies and Industrial Applications Grow Rapidly in China
- China Accelerates the Formation of AI Governance System
- China Participates Actively in the Development of Global AI Governance System

03 AI Development and Governance in China

In recent years, China has actively embraced transformative innovation, achieving significant progress in AI technology and industry development. Guided by the philosophy of people-centered and AI for good, China has established a forward-looking and systematic governance framework and has taken an open and inclusive approach to participating in-depth in global AI governance, actively promoting the benefits of AI for all.

1. AI Technologies and Industrial Applications Grow Rapidly in China

China's AI development began in the 1970s when AI-related projects were integrated into national research plans. This foundational research laid solid groundwork for the future progress of AI in China. Since the start of the 21st century, China's AI technology innovation and industrial applications have flourished, driven by the convergence of key domestic and international resources and effective collaboration between government, industry, academia and research institutions.

According to data from the China Academy of Information and Communications Technology, the core AI industry in China had reached a scale of RMB 578.7

billion in 2023, a year-on-year increase of 14%, with 4,482 AI companies. As of March 2024, China had 52 unicorn companies in the AI sector, 13 of which achieved this status within the past year.[①] *The 2023 Global AI Innovation Index Report* shows that China ranks first globally, accounting for 36.7% of top AI papers and 34.7% of AI patent grants among major countries, demonstrating strong AI innovation momentum.[②]

1.1 Strengthen policy guidance to create a favorable development environment

Since 2017, the Chinese government has continuously introduced AI development policies in response to evolving needs (Figure 8). In July 2017, the State Council released China's *New Generation Artificial Intelligence Development Plan,* outlining AI development directions at the national strategy level, including fundamental theoretical research, breakthroughs in key technologies and industrial applications, which sparked significant enthusiasm for AI investment across various sectors. In December 2017, the Ministry of Industry and Information Technology issued the *Three-Year Action Plan for Promoting the Development of New Generation Artificial Intelligence Industry (2018–2020),* which, following thorough research, proposed four key tasks and 17 targeted products and fields based on principles of systematic planning, focused breakthroughs, collaborative innovation and open and orderly development.

In July 2022, the Ministry of Science and Technology, together with five other departments, issued the *Guiding Opinions* on *Accelerating Scenario Innovation and Promoting High-quality Economic Development with High-level Application of Artificial Intelligence,* emphasizing scenario innovation to drive widespread AI application, encouraging companies and other stakeholders to open up application scenarios, thus accelerating AI integration across various industries. In March 2024, the government work report of China for the first time introduced the

① "Report on Development of Unicorn Enterprises in China (2024)", April 2024, https://www.gov.cn/yaowen/liebiao/202404/content_6948188.htm.

② "2023 Global AI Innovation Index Report", July 2024, https://www.thepaper.cn/newsDetail_forward_27971972.

"AI+" initiative, signaling China's accelerated efforts to establish new quality productive forces driven by AI and to promote the transformation of traditional industries and the enhancement of citizens' quality of life through AI.

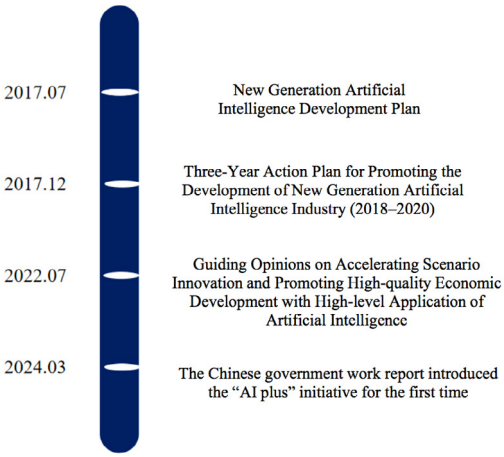

Figure 8. Continuous Policy Documents Issued by the Chinese Government
Source: China Academy of Information and Communications Technology

1.2 Accelerate the deployment of computing power infrastructure to solidify the foundation for development

As of September 2024, the total scale of operational computing centers in China exceeded 8.3 million standard racks, with a total computing capacity of 246 EFLOPS, placing it among the world leaders. The average power usage effectiveness (PUE) of computing centers dropped to 1.47, with 246 national green data centers established and over 140 centers achieving a green and low-carbon rating of 4A or higher. Driven by the promising applications of AI technology, China has seen a surge in the construction of intelligent computing centers. According to IDC data, the smart computing services market grew by RMB 8.16 billion year-on-year in 2023, with the generative AI IaaS market contributing 59% and the smart computing integration services market contributing 38%. Future computing infrastructure deployment will place greater emphasis on supporting large models to empower the real economy and promoting the integrated operation of industries.

1.3 Foster the coordinated development of general-purpose and vertical large models, creating a dynamic ecosystem for industrial innovation

In 2023, Chinese AI companies accelerated the commercial application of large models, which includes both foundational large models with general capabilities and industry-specific large models. Examples of the former include Baidu's ERNIE Bot, Alibaba's Tongyi Qianwen (Qwen), Zhipu AI's Zhipu Qingyan and ByteDance's Doubao, all representing China's exploration at the cutting edge of technology. Examples of the latter include Huawei's Pangu Mine Model, Pangu Weather Model, Pangu Ocean Wave Model and Pangu Financial OCR Model, leveraging China's vast market scale and diverse application scenarios.

As of October 2024, nearly 200 generative AI large models were available to the public in China. The companies releasing these models include not only leading AI enterprises but also new unicorns emerging in this wave of large model innovation, such as Zhipu AI, Moonshot AI and Minimax. This fully reflects the vibrant innovation ecosystem within China's AI industry.

1.4 Promote technological applications to empower economic and social development

In China, AI technology is now widely applied across agriculture, manufacturing and services (Figure 9). In **agriculture,** large models provide users with domain-specific knowledge and information in a question-and-answer format. For example, Yimutian Group's large model "Xiaotian" has learned data on agricultural product distribution across over 2,800 counties and professional knowledge across various agricultural subfields. It covers modules such as new varieties, new technologies, supply-demand trends and intelligent matching of production and sales, offering tailored advice to different user groups.

In **manufacturing,** Chinese companies are integrating AI technology into various stages—R&D, design, production, operations and management and product services—to enhance their level of intelligence. For instance, Haier's smart factories use machine vision technology for product quality inspections, reducing artificial errors.

In the **service industry,** China's wealth of human-machine interaction data accumulated during the mobile Internet era supports the use of large model technology to improve service quality and efficiency. This allows the industry to better serve the public, providing more convenient and secure services for both businesses and individuals.

In consumer services, for example, the healthcare sector uses AI technologies like Tencent AIMIS to alleviate medical resource shortages, enabling remote diagnosis, teleconsultation and diagnostic assistance, thereby enhancing the quality and accessibility of healthcare services.

In production services, the financial industry exemplifies AI integration. Ant Group leverages its foundational large model to develop a customized financial model. This model powers AI-driven tools for wealth advisory, insurance agencies, investment research, financial marketing and claims processing across various financial service areas.

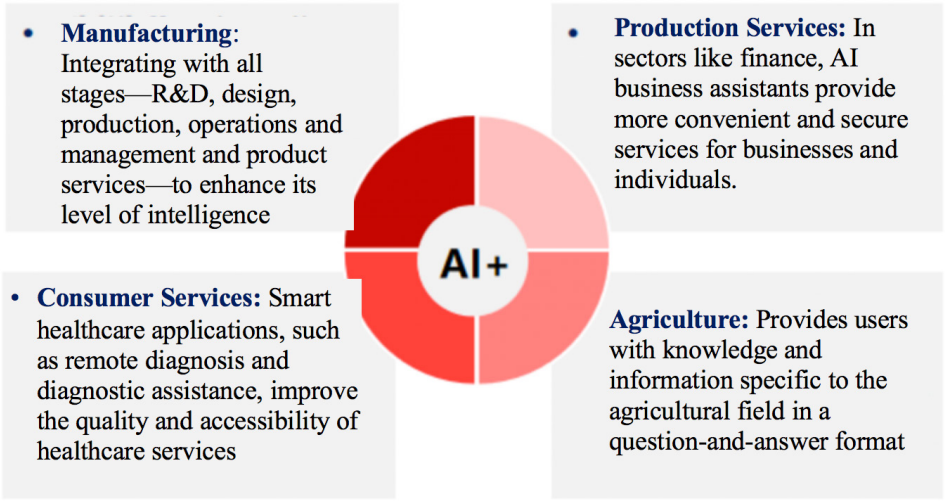

Figure 9. AI-Enabled Applications Across Various Fields

Source: China Academy of Information and Communications Technology

2. China Accelerates the Formation of AI Governance System

China's AI governance is steadily improving, and a comprehensive governance system—including scientific and technological ethics, laws and regulations and standards and guidelines—has initially taken shape (Figure 10).

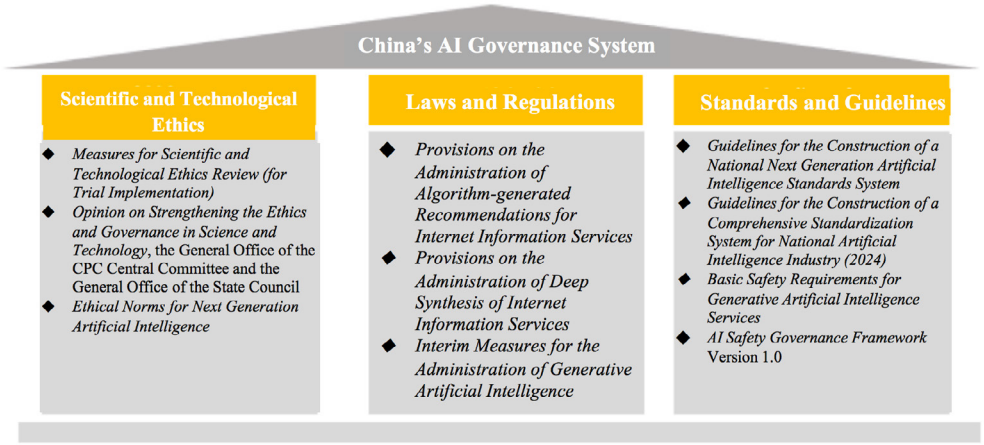

Figure 10. China's AI Governance System

Source: China Academy of Information and Communications Technology

2.1 Focus on AI safety governance to continuously enhance AI safety, reliability and controllability

China emphasizes ethics as a priority in AI governance. In September 2021, China's National Professional Committee on Next Generation AI Governance issued the *Ethical Norms for Next Generation Artificial Intelligence,* aiming to integrate ethics into the entire AI lifecycle and provide ethical guidance for natural persons, legal entities and other organizations engaged in AI-related activities.[①] In March 2022, the General Office of the State Council issued the

① "Ethical Norms for Next Generation Artificial Intelligence", September 2021, https://www.most.gov.cn/kjbgz/202109/t20210926_177063.html?ref=salesforce-research.

Opinion on Strengthening the Ethics and Governance in Science and Technology, listing AI alongside life sciences and medicine as priority fields for developing ethical guidelines and establishing science and technology ethics (review) committees.

In September 2023, the *Measures for Scientific and Technological Ethics Review (for Trial Implementation)* were introduced, providing clear guidance for conducting ethical risk assessments in AI-related activities. Currently, some companies have implemented ethics reviews as a prerequisite for product R&D projects.

China places great emphasis on developing governance tools to ensure the safety and reliability of AI products. For instance, it incorporates governance technologies such as digital watermarking into the design of legal and ethical frameworks. The Ministry of Industry and Information Technology has promoted the establishment of a public service platform for AI large models, developing tools such as safety testing datasets for large models and the "implicit watermarking solution" digital content steganographic marking system to support the secure and healthy development of the AI industry.

The industry and academia are also actively exploring governance tool development. For example, Alibaba, in collaboration with Tsinghua University, Zhejiang University and other institutions, completed the open-source project EasyRobust, which effectively enhances model robustness. This project was awarded the 2023 IEEE Open Source Science Award.

2.2 Continuously improve laws and regulations to explore agile governance

In December 2021, to address issues arising from recommendation algorithms, China introduced the Provisions *on the Administration of Algorithm-generated Recommendations for Internet Information Services.*[①] These provisions provide comprehensive rules for algorithm-generated recommendation services and require

[①] "Provisions on the Administration of Algorithm-generated Recommendations for Internet Information Services", December 2021, https://www.gov.cn/gongbao/content/2022/content_5682428.htm.

algorithmic filing to enhance transparency. This filing assists regulatory agencies in assessing algorithmic risks and promotes transparency of algorithms for the public to enhance broad oversight. In case of harm, the filing information provides a reference for regulatory responsibility assessments.

In November 2022, to curb the misuse of deep synthesis technology, China enacted the *Provisions on the Administration of Deep Synthesis of Internet Information Services,* requiring deep synthesis service providers to implement robust management and technical safeguards.[①] These include verifying user identities, establishing mechanisms for debunking misinformation, handling appeals and complaints and labeling generated or edited content.

Following the surge in generative AI models, China released in July 2023 the *Interim Measures for the Administration of Generative Artificial Intelligence Services* (referred to as the "Interim Measures"), the world's first legislation specifically on generative AI.[②] The Interim Measures promote healthy development and regulated use of generative AI, specifying a tiered regulatory approach and extending transparency through model filing. This legislation also explicitly supports the innovative application of AI technology across industries, sending a positive signal for the regulated growth of generative AI.

Furthermore, laws such as the *E-commerce Law, Personal Information Protection Law and Anti-monopoly Law* have been updated to include provisions related to AI algorithms within their respective regulatory scopes, forming a comprehensive legal framework for AI in China alongside dedicated AI regulations and departmental rules.

2.3 Accelerate the development of standards and guidelines to promote the implementation of rules and regulations

① "Provisions on the Administration of Deep Synthesis of Internet Information Services", November 2022, https://www.gov.cn/gongbao/content/2023/content_5741257.htm.

② "Interim Measures for the Administration of Generative Artificial Intelligence Services", July 2023, https://www.gov.cn/gongbao/2023/issue_10666/202308/content_6900864.html.

In the highly technical field of AI, both "hard law" (such as laws and regulations) and "soft law" (such as ethical guidelines) often require more specific standards and guidelines to be effectively implemented. In July 2020, the National Standardization Administration, along with four other departments, issued the *Guidelines for the Construction of a National Next Generation Artificial Intelligence Standards System*. In June 2024, the Ministry of Industry and Information Technology, in collaboration with three other departments, issued the *Guidelines for the Construction of a Comprehensive Standardization System for National Artificial Intelligence Industry (2024)*. This document identifies seven key areas—general foundational standards, foundational support standards, key technology standards, intelligent products and services standards, new industrialization-enabling standards, industry application standards and security/governance standards—that cover all segments of the AI industry chain and provide comprehensive standardization support for high-quality industry development.

The National Technical Committee 260 on Cybersecurity of Standardization Administration of China has published the *AI Safety Governance Framework* Version 1.0 and *Basic Safety Requirements for Generative Artificial Intelligence Services*. These documents propose technical responses and comprehensive measures to address intrinsic and application-specific security risks in AI and guide the safe development and use of AI.

China's industry actively participates in international standards-setting. For example, iFLYTEK, together with the China Electronics Standardization Institute and other partners, led the development of the international standard *ISO/IEC 5259-4:2024 Artificial Intelligence - Data Quality for Analytics and Machine Learning - Part 4: Data Quality Process Framework,* providing a basis of standards for data quality in the AI field.

3. China Participates Actively in the Development of Global AI Governance System

3.1 Raise Chinese proposals of global AI governance

In October 2023, Chinese President Xi Jinping proposed the Global AI Governance Initiative, outlining China's principles and propositions for global

AI governance. **First, it adheres to an approach of people-centered and AI for good,** where AI development should aim to enhance human well-being, with social security and respect for human rights as prerequisites, ensuring that AI consistently progresses in a direction beneficial to human civilization. AI governance should comply with applicable international laws, align with shared human values and work collectively to prevent and combat the misuse and abuse of AI technology.

Secondly, China emphasizes balancing development and security, affirming that all countries have equal rights to develop and utilize AI. It calls for an open, inclusive, non-discriminatory environment for AI development, allowing all countries to share AI's benefits. Simultaneously, AI should be developed to be safe and controllable, creating technologies that are monitorable, traceable and trustworthy and continuously improving legal and regulatory frameworks to keep AI under human control.

Thirdly, China upholds multilateralism, aiming to enhance the representation and voice of developing countries on AI issues. It supports the UN's central role in global AI governance and advocates for establishing an international AI governance body within the UN framework. This body would coordinate major issues in AI development, security and governance, allowing equal participation and benefits for all countries.

3.2 Respond to the concerns of developing countries by acting as an advocate and implementer of AI capacity-building

To help developing countries benefit equally from AI technology development, China has proposed focusing on capacity-building to bridge the digital and AI divides. The China-initiated resolution on *Enhancing International Cooperation on Capacity-building of Artificial Intelligence* was unanimously adopted at the 78th Session of the UN General Assembly, with 143 countries co-sponsoring it.[①]

① "A/RES/78/311, Enhancing international cooperation on capacity-building of artificial intelligence", July 2024, https://digitallibrary.un.org/record/4053588.

This resolution emphasizes AI capacity-building, encouraging policy exchanges, knowledge sharing, technology transfer, personnel training and research-related cooperation, supporting the UN as a main channel for international collaboration to achieve inclusive and sustainable AI development. Its unanimous adoption reflects the strong desire of countries, especially developing nations, to participate in AI development and governance and to strengthen international cooperation on capacity-building.

China is actively promoting the follow-up work of the resolution, In September 2024, China hosted the Workshop on AI Capacity Building, attended by representatives from over 30 countries, including Thailand, Singapore, Malaysia, Vietnam and Indonesia. During the same month, China and Zambia co-hosted the High-level Meeting on International Cooperation on Capacity-building of Artificial Intelligence with Zambia at the 79th Session of the UN General Assembly, where the *AI Capacity-Building Action Plan for Good and for All* was launched with strong support and response from various parties.[①] This initiative outlines "Five Visions" for cooperation in areas such as AI infrastructure, industry empowerment, talent cultivation, data development and security governance, along with "Ten Actions" by China. These actions include promoting AI and digital infrastructure connectivity, cooperating on model R&D and application, building language corpora, strengthening AI strategic alignment and policy exchange, and sharing technical practices to help developing countries benefit equally in the AI development process. To further advance the implementation of the initiative, China has also proposed the establishment of a group of friends for international cooperation on AI capacity-building.

3.3 Actively engage in international dialogue and cooperation on AI to foster mutual understanding and trust

The inaugural meeting of the China-U.S. Intergovernmental Dialogue on Artificial Intelligence was held in Geneva, Switzerland, in May 2024. The two

① "AI Capacity-Building Action Plan for Good and for All", Chinese Ministry of Foreign Affairs, September 27, 2024, https://www.mfa.gov.cn/eng/wjbzhd/202409/t20240927_11498465.html

sides engaged in in-depth, professional and constructive exchanges on topics such as AI-related technological risks, global governance and other issues of mutual concern.

The first meeting of the China-Singapore Digital Policy Dialogue Mechanism was held in Beijing in June 2024, where discussions were held on trusted commercial data flows and AI capacity cooperation, fostering mutual understanding in the area of AI governance frameworks.

The *Joint Statement between the People's Republic of China and the French Republic on Artificial Intelligence and Global Governance* decided to deepen discussions between the two countries on international governance models, uphold the purpose of AI for good and promote safe, reliable and trustworthy AI systems. The statement advocates that AI must serve the public interest and respect cultural and linguistic diversity.

The *2024 China-Africa Internet Development and Cooperation Forum Chair's Statement on China-Africa Cooperation on AI* proposed strengthening policy dialogue and communication, advancing technology R&D and applications, promoting industrial cooperation and development, fostering talent exchange and capacity-building and reinforcing network and data security.[①] These recommendations reflect a shared vision, determination and confidence in deep collaboration between both sides.

On May 30, the China-Arab States Cooperation Forum convened its 10th Ministerial Meeting, adopting the *Beijing Declaration of the 10th Ministerial Conference of the China-Arab States Cooperation Forum.* Both sides emphasized adhering to the principle of balancing development and security, bridging the AI divide, jointly addressing risks and exploring the establishment of an international AI governance framework with the UN as the main channel. The two sides also agreed to strengthen policy coordination, establish dialogue

① "Chair's Statement on China-Africa Cooperation on AI", 2024 China-Africa Internet Development and Cooperation Forum, April 3, 2024, https://www.cac.gov.cn/2024-04/03/c_1713731793842754.htm.

mechanisms, deepen practical cooperation and leverage complementary strengths.

In October 2024, China and ASEAN jointly issued the *ASEAN-China Joint Statement on Facilitating Cooperation in Building a Sustainable and Inclusive Digital Ecosystem,* pledging to facilitate the exchange and communication of best practices in AI principles, development, safety and governance.[①] Chinese Premier Li Qiang announced that China would launch an initiative to enhance ASEAN's technological capacity for development through AI empowerment.

3.4 Build open, inclusive and equally participatory multilateral cooperation platforms for AI

Since 2018, the World Artificial Intelligence Conference (WAIC) has been successfully held seven times, gradually becoming one of the most influential events in the global AI industry. In July 2024, WAIC and the High-Level Meeting on Global AI Governance were held in Shanghai, attracting approximately 1,000 representatives from governments, international organizations, industry, academia and research institutions worldwide. The conference issued the *Shanghai Declaration on Global AI Governance,* emphasizing the shared need to promote the development and application of AI technologies while ensuring safety, reliability, controllability and fairness in the process and encourage leveraging AI technologies to empower the development of human society.

The China-BRICS Artificial Intelligence Development and Cooperation Center was officially launched in July 2024, upholding the BRICS spirit of openness, inclusiveness and win-win cooperation. The center focuses on practical cooperation in AI technology R&D and innovation, industrial cooperation ecosystems and governance practices, injecting vitality and momentum into AI development for BRICS and BRICS+ countries.

The United Nations Industrial Development Organization (UNIDO) Global

① "ASEAN-China Joint Statement on Facilitating Cooperation in Building a Sustainable and Inclusive Digital Ecosystem", October 10, 2024, https://asean.org/asean-china-joint-statement-on-facilitating-cooperation-in-building-a-sustainable-and-inclusive-digital-ecosystem/.

Alliance on AI for Industry and Manufacturing Center of Excellence was also officially established in Shanghai in July 2024. With its dual focus as a “Global AI Industry Accelerator” and an “International AI Salon”, it aims to promote the application of AI in industrial sectors and help developing countries share the benefits of AI.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

04

AI Development and Governance in ASEAN

- **ASEAN Countries Possess Significant Potentials for AI Development**
- **AI Governance is Rapidly Taking Shape in ASEAN Countries**

04 AI Development and Governance in ASEAN

In recent years, ASEAN countries have prioritized the application and development of AI technology, implementing AI development strategies at both national and regional levels. ASEAN is also committed to addressing the various risks, challenges and ethical issues brought about by AI, and it actively engages in international dialogue on AI governance with an open stance.

1. ASEAN Countries Possess Significant Potentials for AI Development

1.1 ASEAN countries introduce policies to promote AI development and application

Six ASEAN countries have developed their own national AI strategies (Table 2). Since Singapore's pioneering release of the National AI Strategy 1.0 in November 2019, other Southeast Asian countries have followed suit, creating national strategies or roadmaps tailored to their domestic needs and economic development levels. The goal is to accelerate digital transformation, boost productivity and drive economic growth through AI development, ultimately securing a more favorable position in global technological competition.

Table 2: AI-Related National Strategies of ASEAN Countries

Country	AI-Related National Strategy	Date of Issue
Singapore	*National AI Strategy 1.0*	November 2019
	National AI Strategy 2.0	December 2023
Indonesia	*2045 Artificial Intelligence National Strategy (Stratnas AI)*	August 2020
Vietnam	*National Strategy on R&D and Application of Artificial Intelligence (2021-2030)*	January 2021
Malaysia	*Malaysia Digital Economy Blueprint, including the National AI Roadmap*	April 2021
Philippines	*National AI Strategy Roadmap*	May 2021
	National AI Strategy Roadmap 2.0	July 2024
Thailand	*Thailand National AI Strategy and Action Plan (2022-2027)*	January 2022

**Other ASEAN countries, such as Cambodia, Laos, Myanmar and Brunei, have not yet established specific AI-related national strategies. However, they are gradually developing and advancing overall digital economy plans and AI-related policies.

ASEAN has begun coordinating regional AI development policies. Although a unified AI strategy has not yet been established, ASEAN is strengthening cooperation on data flow, privacy protection and cross-border e-commerce through existing regional economic frameworks, such as the Regional Comprehensive Economic Partnership (RCEP), to lay the groundwork for AI development. In the ASEAN Digital Masterplan 2025, ASEAN envisions promoting AI development through regional cooperation and plans to conclude negotiations on the *ASEAN Digital Economy Framework Agreement* (DEFA) by 2025. This agreement aims to reduce fragmentation in regional digital policies and advance the integration of AI policies within ASEAN.

ASEAN is focused on advancing AI cooperation with non-ASEAN countries. As external countries increasingly recognize ASEAN's potential in AI development and application, ASEAN countries have strengthened collaborations with them, fostering technology exchange, policy alignment and rule-making.

In November 2022, ASEAN and China released the *Plan of Action to Implement the ASEAN-China Strategic Partnership for Peace and Prosperity (2022-2025),*

highlighting enhancing cooperation in fields such as artificial intelligence and cyber and data security to embrace the Fourth Industrial Revolution.

In September 2023, ASEAN and China jointly proposed the *Joint Initiative on Advancing the China-ASEAN Science, Technology and Innovation Enhancing Program,* exploring collaboration in AI, the digital economy and smart cities to bridge the digital divide. In October 2024, ASEAN and China issued the *ASEAN-China Joint Statement on Facilitating Cooperation in Building a Sustainable and Inclusive Digital Ecosystem* committed to building a sustainable and inclusive digital ecosystem.

1.2 ASEAN countries advance digital infrastructure development to lay the foundation for AI growth

ASEAN countries are accelerating improvements to digital infrastructure and enhancing connectivity, creating conditions for the widespread adoption of AI, cloud computing and other digital technologies. In recent years, the number of data centers in ASEAN countries has steadily increased (Figure 11), providing essential computational and storage support for AI development and reducing privacy and security risks associated with cross-border data transfers. To meet the growing demand for digital services and applications, ASEAN's data center capacity has expanded significantly, with projections indicating an increase from 1,677 MW in 2024 to approximately 7,589 MW by 2028—a fourfold growth.[①]

5G network infrastructure development is also progressing steadily. According to the United Nations Conference on Trade and Development (UNCTAD), ASEAN's annual investment in 5G infrastructure is expected to reach around US$14 billion from 2020 to 2025, mainly for upgrading communication facilities, networks and equipment to meet the rapidly growing demand for

① "ASEAN Investment Report 2020–2021 Investing in Industry 4.0", The ASEAN Secretariat and United Nations Conference on Trade and Development, September 8, 2021, https://investasean.asean.org/files/upload/ASEAN%20Investment%20Report%202020-2021.pdf.

5G.[①] To support the significant energy demand of data centers while also meeting green development goals, ASEAN countries, through frameworks such as the *ASEAN Plan of Action for Energy Cooperation* (APAEC), are promoting intra-regional energy cooperation, increasing the use of clean energy and enhancing energy efficiency. Collaborative digital infrastructure projects have also increased between ASEAN countries, such as the undersea cable and fiber optic connections between Singapore and Malaysia, as well as Indonesia's partnerships with the Philippines and Malaysia on undersea cable projects, effectively leveraging intra-regional resources and strengthening ASEAN's digital infrastructure connectivity.

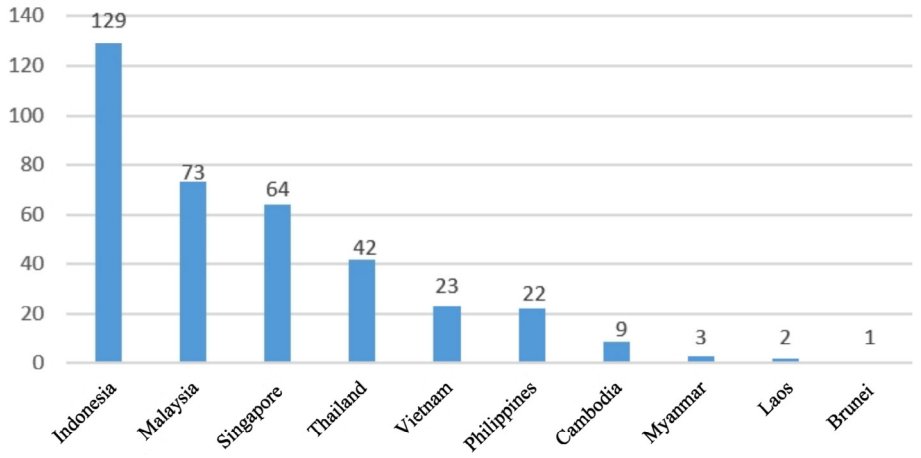

Figure 11. Number of Data Centers in ASEAN Countries in 2024
(As of October 30, 2024)
Source: https://www.datacentermap.com/datacenters/

1.3 ASEAN countries attract international investment to support the rapid growth of AI enterprises

In November 2023, Google, Temasek and Bain jointly released the *e-Conomy SEA,* which shows that since 2021, Southeast Asia's digital economy revenue

[①] Ibid.

has grown at a compound annual growth rate (CAGR) of 27%. By 2025, the region's digital economy revenue is expected to grow at a CAGR of 16%, reaching US$295 billion. The middle-class population is projected to reach 363 million, accounting for 52% of the total population. The increase in young labor and real wage growth will continue to unlock digital dividends.[①] ASEAN projects that Southeast Asia's digital economy will reach US$1 trillion by 2030.[②]Once the ASEAN DEFA comes into effect, its progressive rules could expand the scale of ASEAN's digital industry to as much as US$2 trillion.[③]

The promising outlook for digital economy development in Southeast Asia continues to attract foreign investment. According to a report by Georgetown University, 60% of investment transactions in Singapore, the Philippines, Thailand, Indonesia and Malaysia are from foreign sources.[④]

Chinese companies, including Alibaba's Lazada, Tencent's Shopee and ByteDance's TikTok Shop, operate e-commerce platforms in Southeast Asia, using AI to enhance user experience. Alibaba Cloud, Tencent Cloud and Huawei Cloud have invested in data centers in Singapore, Thailand and Indonesia to provide cloud computing and AI infrastructure support. Additionally, Alibaba DAMO Academy, iFLYTEK and Zhipu AI have launched large multilingual AI models to support the promotion of AI technology across Southeast Asia.

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① "e-Conomy SEA 2023", Google, TEMASEK, BAIN & COMPANY, November 01, 2023, https://services.google.com/fh/files/misc/e_conomy_sea_2023_report.pdf & "Future of ASEAN, Forecast to 2025: GDP is forecast to increase from $2.4 Trillion in 2015 to $5.2 Trillion in 2025, largely due to the ongoing implementation of the AEC - Research and Markets", April 28, 2017, https://www.businesswire.com/news/home/20170428005791/en/Future-of-ASEAN-Forecast-to-2025-GDP-is-forecast-to-increase-from-2.4-Trillion-in-2015-to-5.2-Trillion-in-2025-largely-due-to-the-ongoing-implementation-of-the-AEC---Research-and-Markets.

② "Digital Economy Framework Agreement (DEFA): ASEAN to leap forward its digital economy and unlock US$2 Tn by 2030", August 19, 2023, https://asean.org/asean-defa-study-projects-digital-economy-leap-to-us2tn-by-2030/.

③ Ibid.

④ Ngor Luong, Channing Lee and Margarita Konaev, "Chinese AI Investment and Commercial Activity in Southeast Asia", February 2023, https://cset.georgetown.edu/publication/chinese-ai-investment-and-commercial-activity-in-southeast-asia/.

The continuous influx of foreign capital has provided significant growth momentum for startups in the ASEAN region. According to a joint report by the UNCTAD and ASEAN released in October 2024, the number of ASEAN startups that raised over $1 million nearly doubled from 2015 to 2021, reaching 1,920, and further grew by 150% to 4,710 by the first half of 2024. Among these startups, those in the digital sector have experienced rapid growth, with expanding business scopes covering areas such as automation, healthcare, finance, content creation, entertainment and retail.

With the support of capital, many leading AI startups have emerged in ASEAN, invigorating the region's economy. For instance, Thailand's Social+ and Singapore's Wiz, Kroolo, Ai Palette and Mindverse, along with the Philippines' Sprout Solutions and Malaysia's Shieldbase, are developing robotics or process automation tools to enhance customer interaction and experience, significantly boosting productivity.

The healthcare sector also hosts key AI startups, such as Singapore's KeyReply and Thailand's Meticuly, which improve treatment outcomes through AI solutions like intelligent virtual assistants and smart scheduling systems. Additionally, some AI startups focus on innovations in human resources, finance, IT, media entertainment and e-commerce. For example, the Philippines' Sprout Solutions offers an HR and payroll management platform, while Singapore's Bluesheets uses AI to enhance the efficiency of financial services. Singapore's Locofy.ai specializes in software development and information services to accelerate app development, and Vietnam's AI Hay is dedicated to synthetic media and digital asset creation, promoting AI applications in social and digital life. Moreover, Singapore's Pebblely and Vietnam's Modeli are advancing e-commerce through AI-powered personalized product recommendations, automated inventory management and intelligent customer service, strongly supporting innovation and efficiency in the sector.[①]

[①] Laura Nguyen and Denning Tan, "ASEAN Genai Startup Report 2024", September 2024, https://genaifund.ai/wp-content/uploads/2024/09/ASEAN-GenAI-Startup-Report-2024-by-GenAI-Fund.pdf.

1.4 ASEAN countries take measures to attract and nurture digital talent

The advent of AI has transformed traditional employment structures, making talent proficient in new technologies and skills a crucial factor for sustaining economic vitality. ASEAN countries have implemented various measures to increase the pool of AI talent in the region.

Firstly, they are attracting global talent through visa policies. Singapore, for instance, has introduced diversified visa programs, particularly targeting entrepreneurs and technology specialists. These programs attract top talent in AI and other high-tech fields, injecting innovation and vitality into its tech and startup ecosystem. Malaysia's "DE Rantau" visa program facilitates entry for tech professionals and digital nomads, aiming to integrate as much global high-skilled talent as possible into Malaysia's rapidly growing digital economy.[①]

Secondly, ASEAN countries are accelerating the development of local tech talent and providing opportunities for workforce skill transformation. Singapore's SkillsFuture program offers lifelong learning opportunities for Singaporeans, helping them adapt to changing social and economic needs and continuously upskill throughout their careers. This program provides over 7,000 courses, covering data analysis, tech support, digital media, cybersecurity and more, to help workers build digital skills.[②] The Malaysia Digital Economy Blueprint of Malaysia emphasizes the importance of retraining and upskilling in industries heavily impacted by automation. Thailand has increased education spending to explore innovative educational models, introducing technology and innovation courses in primary education to unlock talent potential. Several ASEAN countries are also enhancing tech skill training for employees, with Cambodia's government, for example, collaborating with vocational training institutions to

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① "Attracting Global Talents: Bringing Digital Nomads and the Highly Skilled into ASEAN", Economic Research Institute for ASEAN and East Asia, November 2023, https://www.eria.org/uploads/media/policy-brief/FY2023/Bringing-Digital-Nomads-Highly-Skilled-into-ASEAN-web.pdf.

② "New SkillsFuture Series To Train 50,000 Annually In Eight Priority And Emerging Skills Areas", October. 2017, https://www.skillsfuture.gov.sg/newsroom/new-skillsfuture-series-to-train-50-000-annually-in-eight-priority-and-emerging-skills-areas.

provide digital skills training for the workforce.[①] Vietnam is training a large number of engineers and IT professionals to establish a stable talent pipeline for AI innovation.[②]

Finally, ASEAN countries are collaborating with international companies and organizations to advance talent development and align technology with international standards. For example, numerous ASEAN tech companies have partnered with the World Economic Forum through the ASEAN Digital Skills Vision 2020, training millions of SME employees with a focus on enhancing digital skills. In September 2022, the ASEAN Foundation and Huawei co-hosted the Asia Pacific Digital Talent Summit, discussing ways to build a future-ready ICT talent pool in the Asia-Pacific region and unlock digital potential.[③] In Indonesia's Digital Talent Scholarship program, companies like Huawei, Cisco and Google offer scholarships and internship opportunities, enabling young people to acquire cutting-edge skills that support Indonesia's digital economy transformation and Industry 4.0 development.[④] ASEAN enterprises also emphasize international cooperation and talent exchange. Indonesia's tech giant GoTo, for example, launched multiple international talent development programs, providing employees worldwide with training in AI and data utilization. The Philippines' Aboitiz Group collaborates with international universities and companies to promote AI applications in public policy and healthcare while offering global training and work opportunities for its employees. These initiatives enhance ASEAN's competitiveness in tech talent, establishing a foundational workforce

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① "Driving ASEAN's talent transformation through technology", Accenture, November 2017, https://cariasean.org/publications/advancing-asean-in-the-digital-age/driving-aseans-talent-transformation-through-technology/.

② "Harnessing AI to rapidly accelerate Vietnam's economic expansion", September 2024, https://www.thestar.com.my/business/business-news/2024/09/03/harnessing-ai-to-rapidly-accelerate-vietnams-economic-expansion.

③ "Huawei and ASEAN Foundation Call for Action to Groom Digital Talent in APAC", September 2022,https://www.telecomreviewasia.com/news/industry-news/2957-huawei-and-asean-foundation-calls-for-action-to-groom-digital-talent-in-apac/.

④ "Indonesia Government to Boost Digital Talent for Industry 4.0", November. 2021, https://opengovasia.com/2021/11/18/indonesia-government-to-boost-digital-talents-for-industry-4-0/.

for intra-regional digital transformation and AI applications.

Overall, AI development in Southeast Asia is vibrant and dynamic. However, it is essential to recognize that disparities in AI capabilities among Southeast Asian countries may exacerbate regional imbalances, posing a potential threat to inclusive growth within the region.

Firstly, there is a broad digital skills gap. Many workers and citizens lack access to digital technology training, have a limited understanding of AI, and have insufficient capacity to access and use digital services. For instance, residents in rural areas across Southeast Asia often lack the means and skills to use smartphones and digital platforms. Secondly, high costs are a barrier to AI development in several ASEAN countries. In some less developed ASEAN nations, the costs of internet access, mobile data, and computing centers remain unaffordable, especially in rural and remote areas.

Thirdly, the lack of diverse local services and content has created a "left shoe on the right foot" dilemma. In less developed regions, many digital platforms have not yet adapted content to local languages, cultures and practices, significantly limiting technology availability rate, diminishing user experience and preventing the full realization of digital technology's potential value.

Lastly, network infrastructure remains insufficiently advanced. Despite improvements in internet coverage, unstable connections and slow speeds are still common in rural and remote areas across ASEAN.

If these challenges are not effectively addressed, they could significantly hinder the pace of AI application and development in ASEAN countries, deepening both intra- and inter-country AI divides. This would cast a shadow over ASEAN's strategies for inclusive, resilient and sustainable development.

2. AI Governance is Rapidly Taking Shape in ASEAN Countries

2.1 ASEAN countries actively forming AI governance frameworks

ASEAN countries largely integrate AI governance into their national AI

strategies, accelerating the governance process through multi-layered regulatory measures. For instance, Singapore's *National AI Strategy 1.0 and National AI Strategy 2.0,* Indonesia's National *Strategy for Artificial Intelligence 2020-2045,* Vietnam's *National Strategy on R&D and Application of Artificial Intelligence 2021-2030* and Thailand's *National AI Strategy and Action Plan (2022-2027)* all include governance elements such as AI transparency, fairness, data security and privacy protection, providing policy and legal frameworks for AI development and application.

Some ASEAN countries have enacted specific laws and regulations to further refine governance. For example, Malaysia implemented the *Personal Data Protection Act and issued the National Guidelines on AI Governance and Ethics* (AIGE), establishing seven key governance principles. Indonesia released a draft *Artificial Intelligence Ethics Guidelines,* emphasizing algorithm transparency, data privacy and fairness. The Philippines introduced the *Data Privacy Act* to address privacy risks brought about by technology, while Vietnam has updated its draft of the *Law on Personal Data Protection* (PDPL), set for release in 2026, to better safeguard personal data. Although countries like Cambodia and Laos have not yet developed explicit AI governance strategies or dedicated regulations, they are gradually establishing AI regulatory frameworks as they promote technology development.

ASEAN is building and refining a regional governance framework. In January 2021, ASEAN adopted the *ASEAN Digital Masterplan 2025,* providing unified guidance for ASEAN member states on digital economy development. In terms of digital governance, the plan proposes to ensure the reliability of digital services by implementing data security regulations and strengthening measures against cybercrime. It also aims to establish unified intra-regional digital trade rules and standards, promote cross-border digital trade, enhance participation in the digital economy and create an inclusive digital society.

In February 2024, at the 4th ASEAN Digital Ministers' Meeting, ASEAN released the ASEAN Guide on AI Governance and Ethics, marking the region's first AI governance guidance document. This guide aims to promote responsible AI development and use through regional cooperation. The meeting also decided to establish a Working Group on AI Governance to discuss and address

pertinent issues concerning AI governance in ASEAN, fostering safe, responsible and ethical use of AI.[①] In June 2024, the ASEAN Committee on Science, Technology and Innovation (COSTI) launched Tracks on AI (ACT on AI) for 2024-2025 to complement and enhance the existing governance framework.

2.2 ASEAN prioritizes bridging the intra-regional "AI divide"

According to Oxford University's "2023 Government AI Readiness Index", Singapore leads significantly in AI readiness with a score of 81.97 (out of 100), well above the ASEAN regional average of 55.49 (see Figure 12 for specific scores). The index ranking reveals substantial disparities in AI development levels among ASEAN countries, with Singapore, Malaysia and Thailand performing relatively well.

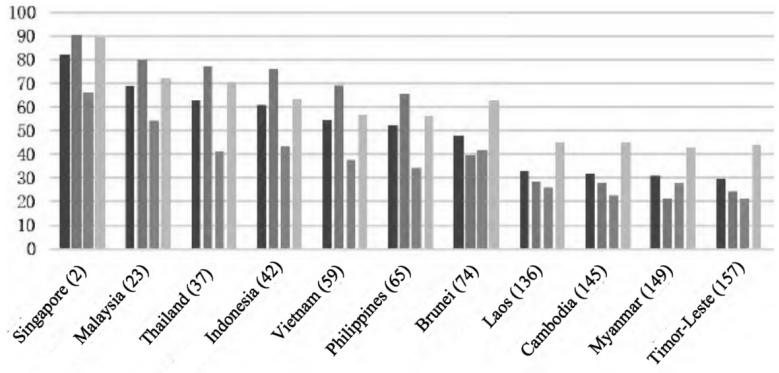

Figure 1: 2023 AI Readiness Index of Southeast Asian Countries

Note: The numbers in parentheses indicate each country's AI Readiness Index ranking.
Source: Emma Hankin, Pabol Fuentes Nettel, Livia Martinescu, et al, 2023 Government Al Readiness Index [R/OL]. (2023-12-20) [2023-12-29]. https://oxfordinsights.com/wp-content/uploads/2023/12/2023-Government-AI-Readiness-Index-2.pdf.

Figure 12
Source: Liu Xiaoqi, The Impact of Artificial Intelligence on Order Building in Southeast Asia, World Economy and Politics Forum, No. 4, 2024, P. 90.

① "ASEAN Ministerial Meeting on Science, Technology and Innovation (AMMSTI) Statement on Artificial Intelligence (AI)", June 2024, https://asean.org/wp-content/uploads/2024/06/ADOPTED-AMMSTI-Statement-on-AI_7June2024.pdf.

ASEAN is actively integrating resources and optimizing governance measures to bridge the intra-regional "AI divide." In January 2021, the *ASEAN Digital Masterplan 2025* (ADM2025) was introduced to guide ASEAN's digital cooperation from 2021 to 2025, helping digitally underdeveloped countries strengthen their digital infrastructure and promoting regional connectivity and cybersecurity. ASEAN also provides financial and technical support to countries with insufficient digital infrastructure through regional cooperation mechanisms and prioritized funding projects, such as the ASEAN Infrastructure Fund (AIF, launched in 2011) and the ASEAN Catalytic Green Finance Facility (ACGF, launched in 2019, an AIF initiative) jointly initiated by the Asian Development Bank and ASEAN. ASEAN is deepening international cooperation to leverage external support for balanced intra-regional development. For example, UNESCO's International Centre for Higher Education Innovation (ICHEI) collaborates with multiple ASEAN countries on digital transformation projects in higher education, offering online courses and training to improve the digital skills of teachers and students, fostering AI education and reducing the disparity in AI talent across countries.

ASEAN countries encourage multi-stakeholder involvement in bridging the "AI divide." Governments, businesses and civil society work together to provide policy guidance, financial support and technical training, helping less-developed regions and communities access smart technologies more rapidly and narrowing the digital gap.

2.3 ASEAN countries begin to carry out data governance

ASEAN countries place great importance on data risk management, actively working to improve data quality and strengthen the alignment and unification of data standards. The *ASEAN Guide on AI Governance and Ethics* specifies that throughout the AI system lifecycle, data collection, storage, processing and deletion must comply with relevant data protection laws, data governance regulations and ethical principles. Several ASEAN countries have already begun establishing data protection laws to mitigate risks associated with data use in the lifecycle of AI systems, including Malaysia's *Personal Data Protection Act* (2010), the Philippines' *Data Privacy Act* (2012), Singapore's *Personal Data Protection Act* (2012), Thailand's *Personal Data Protection Act* (2019), Indonesia's *Personal*

Data Protection Act (2022) and Vietnam's draft of the *Law on Personal Data Protection* (2024).

ASEAN countries are important global hubs for the data annotation industry. Companies in Indonesia, the Philippines and Vietnam, such as Kata.ai, Straive and Viettel, play key roles in providing image, text and video data annotation services, enhancing data accuracy and reliability.

Singapore employs advanced data collection mechanisms to systematically and in real time gather data used in sectors such as transportation, healthcare and logistics, optimizing operational efficiency across industries. Malaysia's *Malaysia Digital Economy Blueprint* promotes data sharing between public and private sectors and opens government data to increase transparency. In social media content regulation, Malaysia mandates that platforms using AI technology must ensure that users' information is not excessively collected or disclosed without proper safeguards.

ASEAN countries prioritize the unification and alignment of data standards to facilitate data flow. Both the RCEP and the ongoing ASEAN DEFA treat cross-border data flow as a key issue, underscoring ASEAN's goal to enhance regional economic competitiveness through data connectivity and standardization. Additionally, at the ASEAN Ministerial Meeting on Science, Technology and Innovation held in June 2024, member states reached a consensus to strengthen data governance and protection, promote regional standard alignment and ensure regular data updates and reviews.

2.4 ASEAN countries begin to regulate algorithms

AI algorithms, which use mathematical and statistical principles to help computers learn, infer, and perform tasks from data, are a core component of AI applications. However, the complexity of their internal logic can create a "black box" effect, raising concerns over bias, inaccuracies and information security risks. The *ASEAN Guide on AI Governance and Ethics* lists algorithmic transparency and explainability as key governance principles, asserting that deployers are responsible for explaining algorithmic decision-making logic and implementing consistent transparency standards to mitigate distrust stemming

from the "black box" effect. Singapore's Model *AI Governance Framework* similarly emphasizes the need for explainability in algorithm design to enhance transparency and reduce the "black box" effect.[①]

AI automated analysis systems are highly sensitive to changes in technical parameters. On some social media platforms, adjustments in algorithm-generated recommendation parameters can lead to variations in output, potentially fostering social division or spreading misinformation. Some ASEAN countries have already taken measures to address the potential risks of algorithm-generated recommendations. For example, Indonesia imposes strict regulations on algorithm-generated recommendation systems of foreign social media platforms to prevent the misuse of algorithms that could influence public opinion.

In highly sensitive sectors such as finance and healthcare, ASEAN countries are also striving for transparency, compliance and information security. For instance, the Monetary Authority of Singapore (MAS) supports companies in testing and developing innovative AI solutions through risk frameworks and regulatory sandboxes, ensuring compliance and security while protecting trade secrets. Thailand enforces strict regulations on AI applications in high-risk fields like finance and healthcare to minimize risks and biases associated with algorithms.

2.5 ASEAN countries focus on the robustness and reliability of AI systems

AI systems encompass key components such as models, products, computing power and the supply chain. Ensuring their robustness and reliability is crucial for mitigating overall risk and building societal trust. The *ASEAN Guide on AI Governance and Ethics* explicitly identifies "Safety and Security" as core principles, emphasizing the assessment and management of known risks in AI applications to safeguard systems against potential malicious attacks.

① Model Artificial Intelligence Governance Framework (Second Edition), Info-communication Media Development Authority (IMDA)and Personal Data Protection Commission (PDPC), January 21 2020, https://www.pdpc.gov.sg/-/media/Files/PDPC/PDF-Files/Resource-for-Organisation/AI/SGModelAIGovFramework2.pdf.

Several ASEAN countries and companies have implemented specific measures to verify and enhance the robustness of AI systems. For example, Indonesia's multi-service and payment platform Gojek conducts offline benchmark testing of machine learning models before deployment to ensure performance and reliability. Singapore's UCARE.AI collaborates with clients to create a validation framework, gathering patient feedback to ensure the accuracy and reliability of AI models. Additionally, in May 2022, Singapore launched AI Verify, a platform that provides a comprehensive assessment of AI systems' computing power, security and data protection through a system security review checklist, helping companies identify and address potential risks.

Moreover, ASEAN countries have intensified security reviews for specific AI application scenarios, such as finance and healthcare. Countries like Singapore, Malaysia, Thailand and Vietnam have established stringent control mechanisms, conducting regular inspections of critical digital infrastructure to ensure its security and robustness.

In terms of AI system supply chains, which often involve multiple sectors and even multiple countries, ASEAN countries have implemented cross-departmental security monitoring measures and actively promote cross-border cooperation. For example, ASEAN has partnered with Japan to establish a digitalised supply chain ecosystem aimed at enhancing the transparency, traceability, connectivity and sustainability of supply chains.[①]

2.6 ASEAN strives to enhance its influence in global AI governance

In recent years, ASEAN member states have increased their involvement in global AI governance issues. Singapore actively participates in AI governance discussions at the UN and other global forums, contributes to the development of AI-related standards, and collaborates with other ASEAN countries to align

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① "Vision for the Digitalisation of Supply Chains in ASEAN and Japan", Economic Research Institute for ASEAN and East Asia (ERIA), February 2024, https://www.eria.org/uploads/Vision-for-the-Digitalisation-of-Supply-Chains-in-ASEAN-and-Japan.pdf.

intra-regional AI policies with international developments.

During the formulation of UNESCO's *Recommendation on the Ethics of Artificial Intelligence,* ASEAN member states—particularly Singapore, Malaysia and Thailand—played a proactive role, contributing regional insights. These countries not only support the implementation of this ethical framework within ASEAN but also promote regional values of diversity, inclusion and sustainable development to enhance the global AI governance system.

Through active participation in international cooperation, ASEAN countries bring a unique regional perspective to global AI governance. They advocate governance principles that align with ASEAN values and emphasize resource equity and social ethics. This values-based approach not only fosters international collaboration and cross-cultural understanding but also offers new insights into the responsible and sustainable global application of AI technology, thereby strengthening ASEAN's influence in global AI governance.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

05

AI Cooperation Between China and ASEAN

- **China-ASEAN AI Development Cooperation Has a Solid Foundation**
- **China-ASEAN Cooperation in AI Governance Has Promising Prospects**

05 AI Cooperation Between China and ASEAN

AI cooperation between China and ASEAN is rooted in ASEAN-China digital economy collaboration and forms a key part of the Digital Silk Road. Guided by the principles of amity, sincerity, mutual benefit and inclusiveness, China partners with ASEAN countries in AI industry and technology cooperation, advancing governance and regulatory alignment. This collaboration focuses on building a regional AI ecosystem that actively contributes to bridging the digital divide and enhancing the inclusiveness, sustainability and resilience of economic development.

1. China-ASEAN AI Development Cooperation Has a Solid Foundation

1.1 China and ASEAN maintain smooth alignment of digital policies

Policy alignment between China and ASEAN on AI development cooperation began in 2019. In November of that year, the ASEAN-China Summit adopted the *ASEAN-China Leaders' Statement on Smart City Cooperation Initiative,* proposing enhanced exchanges and collaboration in building a smart cities ecosystem. The year 2020 was designated as the ASEAN-China Year of Digital

Economy Cooperation. In 2021, the China-ASEAN Summit endorsed the *Initiative on Building ASEAN-China Partnership on Digital Economy,* aligning China's digital economy development plan with the *ASEAN Digital Masterplan 2025*. This partnership aims to foster cooperation in 5G, big data, AI and smart cities, building a digital economy partnership based on mutual trust, mutual benefit, inclusiveness, innovation and win-win cooperation. In October 2024, during the 27th ASEAN-China Summit, the two sides issued the *ASEAN-China Joint Statement on Facilitating Cooperation in Building A Sustainable and Inclusive Digital Ecosystem,* outlining further cooperation in strengthening policy exchange and strategic alignment, advancing digital infrastructure and accelerating the innovative application of emerging digital technologies. Chinese Premier Li Qiang announced an initiative to enhance technological capacity in ASEAN through AI empowerment.

China and ASEAN's digital economy regulatory bodies maintain close cooperation. In 2021, the first ASEAN-China Digital Ministers' Meeting was held. In 2022, at the second meeting, the *Action Plan on Implementing the ASEAN-China Digital Economy Cooperation (2021-2025)* and the *2022 ASEAN-China Digital Work Plan* were adopted, providing specific guidance and planning for cooperation in digital infrastructure, digital trade, digital technology innovation, digital industries and digital talent development. In subsequent annual meetings, both parties have developed the *ASEAN-China Digital Work Plan* for the following year. At the fourth China-ASEAN Digital Ministers' Meeting held in 2024, the two sides signed the *ASEAN-China Memorandum of Understanding (MoU) on Cooperation in Communications, Digital and Technology for 2024-2029.*

China and ASEAN have established a range of dialogue and forum mechanisms in the fields of AI and digital governance. In July 2023, the first China-ASEAN Artificial Intelligence Cooperation Forum was held in Nanning, Guangxi. At the forum, China's Ministry of Science and Technology launched the *Artificial Intelligence Development and Cooperation Initiative towards ASEAN,* calling for stable cooperation mechanisms to advance joint AI R&D and application collaboration. The initiative emphasized the importance of further exchanging AI development policies and governance principles and building a governance framework and standards with broad consensus. In June 2024, the Cyberspace

Administration of China hosted the China-ASEAN Digital Governance Dialogue in Guangxi, focusing on AI governance, data governance and cybersecurity emergency response cooperation.

1.2 China and ASEAN hold active AI industry cooperation

Digital infrastructure cooperation has advanced connectivity within ASEAN. Key components of digital infrastructure, such as communication networks, data centers, cloud services, computing centers and satellite navigation systems, form the foundation of AI industry development. Chinese companies are actively involved in building infrastructure, such as 4G and 5G communication base stations and fiber broadband access, in ASEAN countries like Thailand, the Philippines and Cambodia. In data centers and cloud services, Chinese enterprises like Alibaba Cloud, GDS and Tencent Cloud have partnered with Thailand, Indonesia, Cambodia, Myanmar and Laos, investing in local data centers and offering high-quality, cost-effective cloud computing services. In September 2023, the China-ASEAN Artificial Intelligence Computing Center was officially launched. This center boasts a globally leading AI multi-computing power architecture, primarily supporting deep learning model development, training and inference across various industries and providing a public computing power platform for diverse sectors. Additionally, China's Beidou system has begun serving ASEAN countries in land surveying, precision agriculture and geological disaster monitoring, helping to bridge the digital divide.

AI industry cooperation enhances quality, reduces costs and increases efficiency for enterprises. The application of AI technology in production, supply chain management and engineering can significantly boost productivity, improve quality control and reduce energy consumption and operational costs for enterprises. Institutions like the China-ASEAN Technology Transfer Center (CATTC) provide platform support for technology transfer and collaboration in smart manufacturing between China and ASEAN countries. The China-ASEAN (Huawei) AI Innovation Center promotes the integration of "AI + Industry" by implementing benchmark projects in sectors like sugar production and non-ferrous metals, advancing smart development in these industries. In 2018, China's HYDATA signed an MOU with Indonesia's Meikarta to collaborate on AI industry aggregation and incubation. In 2019, SenseTime and Malaysia's G3

Global, alongside China Harbour Engineering, signed a strategic cooperation agreement to establish Malaysia's first AI industrial park, which is also ASEAN's first AI-driven tech city. This industrial park serves as a platform for developing AI solutions, fostering ecosystem growth and industry development in Malaysia's AI sector.

Smart city projects optimize urban governance. A smart city is a brand-new concept of city construction which integrates technologies like IoT and cloud computing into city management and operations, creating a comprehensive system that enhances industrial development, municipal governance and social interactions. This approach improves urban efficiency and residents' quality of life while promoting sustainable urban development. In 2018, Alibaba Cloud signed the City Brain project with the Malaysian government, applying AI technology to traffic management, urban planning and environmental protection. In 2019, the MAKATI smart city project in the Philippines, developed with Chinese involvement, was shortlisted for the SCEWC Global "Innovation Idea Award." Significant progress has been made in the smart city development of the Sino-Singapore Tianjin Eco-City, where a smart city application development base and a Sino-Singapore Smart City Research Center have been established, with a Phase II strategic cooperation agreement signed in 2023. Additionally, Shenzhen and Singapore signed multiple MOUs and established the Singapore-China (Shenzhen) Smart City Initiative (SCI) Joint Implementation Committee to enhance cooperation in areas such as e-trade, mutual recognition of digital identities and cross-border arbitration. Companies like Huawei, Inspur and Tencent are also actively participating in smart city projects across Thailand, Laos and Indonesia, focusing on sectors such as healthcare and education.

AI large models are accelerating the spread of digital applications. The year 2023 marked the beginning of widespread AI large model applications. In June, iFLYTEK launched its Spark large model and C-end smart hardware in Singapore, with products like the generative smart cockpit, iFLYTEK Tingjian for simultaneous interpretation, iFLYTEK Zhizuo and smart voice panels entering the Southeast Asian market. Around the same time, Alibaba International Station introduced AI-powered foreign trade tools, covering functions such as smart product listing, market analysis, video chat and real-time translation. In November, ByteDance launched ChitChop, an AI tools platform based on the

Skylark large language model (now known as the Doubao large model), offering over 200 intelligent bots for various work and life scenarios to users overseas. Notably, at the end of 2023, Alibaba DAMO Academy released SeaLLM, the first AI large model trained in Southeast Asian languages. This model addresses the region's lack of localized language models. It is expected to accelerate AI adoption locally and provide support for underrepresented communities in the digital realm.

Consumer AI tools are enhancing and enriching the everyday life of the public. Chinese smart appliances, robots and wearable devices, with their versatile functions and affordable prices, are highly popular among Southeast Asian consumers. The overseas AI education app Question.AI by Zuoyebang has shown strong performance in the Southeast Asian market, with nearly 1.2 million weekly active users in the Philippines and ranking second among educational apps in Indonesia. Short video platforms, led by TikTok, have also seen rapid user growth in the region. Long-form video streaming services like Tencent's WeTV and iQIYI International have gained popularity by lowering the viewing barrier through optimized translations, contextual adaptations and localized dubbing. Chinese game developers have also achieved notable success in the Southeast Asian mobile gaming market. On the other hand, Singapore's Nanyang International Club Pte. Ltd. has invested RMB 2 billion in Hezhou, Guangxi, China, to establish an intelligent healthcare and elderly care center. This project was developed and designed by the Singapore-ASEAN Artificial Intelligence Center and includes facilities such as an intelligent elderly care center, smart senior apartments, a smart elderly medical rehabilitation center and intelligent healthcare residences. It represents a significant investment by ASEAN AI enterprises in China's healthcare and elderly care sector.

2. China-ASEAN Cooperation in AI Governance Has Promising Prospects

2.1 China and ASEAN share cultural connections

Traditional Chinese culture centers around the concept of *harmony and cooperation* (和合), emphasizing the primacy of harmony, harmony within diversity and harmony and solidarity towards common progress. This is complemented by values like *benevolence* (仁), *righteousness* (义), *propriety* (礼), *wisdom* (智)

and *integrity* (信).

Benevolence reflects kindness and compassion, fostering harmonious social relationships. *Righteousness* emphasizes justice and prioritizing the collective good, promoting the idea that serving the public interest is the highest personal fulfillment. *Propriety* involves adherence to basic etiquette and social norms to maintain order. *Wisdom* highlights the importance of rationality, truth-seeking, discernment and innovation. *Integrity* underscores truthfulness, honesty, trustworthiness and loyalty to beliefs and principles.

Grounded in these traditional values, China advocates for building a community of shared future for mankind on the international stage, promoting equality, mutual accommodation and win-win cooperation among countries with diverse social systems, ideologies, histories, cultures and development levels. China emphasizes shared interests, equal rights and joint responsibilities in global affairs. Additionally, China has introduced the *Global Development Initiative, Global Security Initiative and Global Civilization Initiative,* supporting a world order that is multipolar and orderly, with inclusive and equitable economic globalization. These initiatives call on all nations to work together in building an open, inclusive, clean and beautiful world that enjoys lasting peace, universal security and common prosperity.

ASEAN countries share values similar to China's. Through the *ASEAN Charter*, the *ASEAN Community Vision 2025*, and the *Declaration of ASEAN Concord I, II, III and IV,* ASEAN's three core values are clearly expressed.

Firstly, ASEAN values peace and stability. Founded amid the Cold War in 1967, ASEAN was not established as a confrontational military alliance but as a regional organization committed to promoting peace and stability. Its founding reflects Southeast Asian nations' weariness of regional conflicts and desire for peace. In 1971, ASEAN issued the Zone of Peace, Freedom and Neutrality Declaration, emphasizing non-alignment and its dedication to maintaining regional peace, stability and security. For over 50 years, ASEAN has advocated for tolerance and moderation, resolving differences through dialogue, building inter-state trust and reinforcing regional peace.

Secondly, ASEAN prioritizes development and shared prosperity. At the end of 2015, ASEAN announced the establishment of the ASEAN Community, emphasizing that this milestone marked the beginning, not the end, of its integration journey. ASEAN is committed to building a dynamic, sustainable and highly integrated economy, strengthening internal connectivity and addressing poverty and internal development gaps through practical cooperation, ensuring no one is left behind. ASEAN also aspires to be a central hub for regional economic growth and a driving force in the global economy.

Thirdly, ASEAN supports diversity, inclusiveness and equal dialogue. With 10 member countries, ASEAN embodies diversity not only in language and culture but also in social systems and levels of development. ASEAN's unique "ASEAN Way" emphasizes equal sovereignty, consensus-building and sensitivity to each member's comfort level. Inclusiveness is a guiding principle in ASEAN's policy-making. In foreign relations, ASEAN emphasizes multilateralism based on the UN Charter and international law, fostering friendly, inclusive, non-discriminatory and mutually beneficial relations with other countries grounded in ASEAN centrality.

2.2 China and ASEAN share similar AI governance principles

China and ASEAN's AI governance principles share three common characteristics: advocating for inclusiveness and universal benefit, emphasizing a human centricity approach and supporting a comprehensive, open governance structure.

2.2a Advocating for inclusiveness and benefit for all

China views AI governance as a matter of shared concern for humanity and a common challenge faced by all nations. The UN, as the most authoritative and representative intergovernmental international organization, should serve as the primary channel for global AI governance. Global AI governance should adhere to the principles of broad participation and consensus-building, establishing an open and inclusive governance mechanism worldwide. China particularly emphasizes that international AI cooperation and global AI governance should uphold an open, inclusive, equitable and non-discriminatory development environment, and should not be an exclusive club. Additionally, China advocates

for enhancing the representation and voice of developing countries in global AI governance, ensuring equal rights, opportunities and rules for AI development and governance across nations. To bridge the AI divide and governance capacity gap and help developing countries participate more effectively in global AI governance, China led the UN General Assembly in July 2024 in passing a resolution on enhancing international cooperation on AI capacity-building. In September of the same year, China introduced the *AI Capacity-Building Action Plan for Good and for All* and co-hosted the first AI capacity-building seminar with the UN in Shanghai.

Inclusive and universally beneficial AI development is also a key objective for ASEAN. *The ASEAN Digital Masterplan 2025* envisions ASEAN as a leading digital community and economic bloc, with one specific goal being the creation of a digitally inclusive society within ASEAN. The *ASEAN Guide on AI Governance and Ethics reflects* ASEAN's commitment to accommodating diverse national contexts and development levels while promoting shared progress. They emphasize respecting national sovereignty and legal jurisdiction. In June 2024, the ASEAN Ministerial Meeting on Science, Technology and Innovation issued the *Statement on AI,* recognizing the potential of leveraging AI technologies to foster inclusive and equitable economic growth and mitigate socio-economic disparities within the ASEAN societies, with a commitment to ensuring the equitable distribution of AI benefits across all segments of society. It commits to fostering collaboration and partnerships among ASEAN Member States, as well as with Dialogue Partners and regional and international organisations, etc., with a view to advance ASEAN economies and societies in an inclusive, responsible and sustainable way.

2.2b Emphasizing human centricity and AI for good

Human centricity means that AI development must aim to enhance human welfare and advance the common good of humanity. The *Global AI Governance Initiative* states that the development of artificial intelligence should adhere to the philosophy of "human centricity and AI for good", with the goal of increasing the common well-being of humanity and on the premise of ensuring social security and respecting the rights and interests of humanity, so that AI

always develops in a way that is beneficial to human civilization.[①] The *ASEAN Guide on AI Governance and Ethics* also enshrines "human centricity" as a core guiding principle, stating that "AI systems should respect human-centered values and pursue benefits for human society" and "ensure that people benefit from AI design, development and deployment while being protected from potential harms."[②] For both China and ASEAN, this commitment to human-centered values is not limited to these statements; it is a fundamental principle running through their entire AI governance philosophy.

Human centricity and AI for good are reflected in the requirements for guiding AI technology to empower human work, improve quality and efficiency, enhance the quality of life and promote sustainable development. AI can make positive contributions in areas closely related to public life—such as healthcare, education and eldercare—as well as in long-term challenges like environmental protection, disaster prevention, resource management and energy efficiency. These applications enable AI to drive continuous progress in human society.

The human centricity and AI for good approach also require ensuring that human interests are not harmed by AI algorithms. Both China and ASEAN emphasize the protection of data privacy and advocate that algorithmic decisions should avoid biases or discrimination against different groups and should not further disadvantage vulnerable populations. Algorithms should not be used to manipulate users or to induce decisions they would not otherwise make.

The human centricity and AI for good philosophy also entails addressing AI's impact on the job market and mitigating long-term societal risks posed by AI. The widespread adoption of AI could lead to large-scale unemployment and excessive reliance on AI technology may result in decreased human cognitive abilities and a dramatic loss of control over technology. To prevent such

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① "Global AI Governance Initiative", Chinese Ministry of Foreign Affairs, October 20, 2023, https://www.mfa.gov.cn/web/ziliao_674904/1179_674909/202310/t20231020_11164831.shtml.

② "ASEAN Guide on AI Governance and Ethics", https://asean.org/wp-content/uploads/2024/02/ASEAN-Guide-on-AI-Governance-and-Ethics_beautified_201223_v2.pdf.

outcomes, it is essential to promote AI education and skills training as widely and rapidly as possible. This includes cultivating more professionals capable of managing AI, redesigning job roles to help affected individuals transition to higher-value work and raising public awareness of AI to improve technological literacy, equipping people to confidently engage with the AI era.

2.2c Advocating a multi-stakeholder, full-chain governance structure

AI technology and products are highly pervasive and involve multiple risks, including data security, algorithmic safety, cybersecurity and cognitive security, across the phases of design, development, deployment and use. Both China and ASEAN advocate for a multi-stakeholder governance structure for AI, implementing comprehensive, full-chain and diverse forms of regulation over AI systems.

In its *AI Safety Governance Framework,* China proposes that AI safety governance should involve governance mechanisms that engage all stakeholders, integrate technology and management and ensure coordinated efforts and collaboration. This includes establishing a comprehensive governance system with active involvement from research institutions, service providers, users, government agencies, industry associations and social organizations. The framework calls for comprehensive rules and mechanisms for AI safety education, industry self-regulation and social oversight. China adopts a flexible, multi-faceted governance approach across different stages of AI development, deployment and use, implementing standards such as data collection and usage rules, safety development protocols, ethical review guidelines and risk-level testing systems. Additionally, the framework promotes mechanisms for sharing security risk information and emergency response, advances research on AI explainability and emphasizes training a robust workforce in AI safety.

The *ASEAN Guide on AI Governance and Ethics* proposes the establishment of an ASEAN Working Group on AI Governance composed of experts from various ASEAN countries and disciplines who would oversee and advance AI governance across the region. The guide calls for designated agencies to develop standards, guidelines, tools and templates to help businesses and institutions design, develop and deploy AI responsibly, with clear legal frameworks that

lay out the responsibilities of those involved in AI systems at each stage. The Guide recommends fostering public-private partnerships to manage AI systems throughout their lifecycle, encompassing project governance and problem statement definition, data collection and processing, modelling, outcome analysis, deployment and monitoring.

China and ASEAN share similar principles for AI governance, creating promising prospects for consensus on AI governance issues. Both advocate for equality, peaceful cooperation and dialogue to resolve differences among nations with diverse social systems, histories, cultures and development levels. This shared foundation of mutual respect and understanding facilitates communication and joint exploration of AI development and governance paths. China and ASEAN emphasize the inclusiveness of international AI governance mechanisms and advocate for fair representation of countries at different development levels. Their cultural traditions contain minimal biases toward specific races or religions, fostering AI systems that better serve diverse cultures and prevent discrimination or incitement of hatred. Both China and ASEAN are committed to common prosperity and sustainable development. In their AI governance collaboration, they emphasize guiding AI technology to support economic, social and environmental sustainability. They prioritize the sharing of AI resources and governance expertise through technical training and capacity-building programs, fostering balanced AI capability and industry growth within the region.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

06

Outlook

- **Promote Infrastructure Development to Lay the Foundation for Application of AI Technologies**
- **Accelerate Technology Applications and Jointly Build Innovative Ecosystems**
- **Promote Dialogues and Cooperation on AI Governance to Build Strong Shields for AI Safety and Ethics**

05 Outlook

AI represents a new frontier for human development. At present, the rapid advancement of AI technology globally offers significant development opportunities while also presenting numerous risks and challenges. China and ASEAN share a common will of development in AI development and similar governance philosophies. The two sides can strengthen cooperation by increasing discussions and coordination on AI-related issues under existing cooperation mechanisms. Through establishing AI dialogue mechanisms, hosting seminars and engaging in other diverse exchange activities, China and ASEAN can jointly seize new opportunities in AI development, work together to address the challenges posed by the rapid application of new technologies, and pool their efforts to promote the establishment of an inclusive and sustainable AI ecosystem and share the developmental benefits brought by AI advancements.

On the basis of mutual respect and in alignment with the willingness, capabilities and needs of all parties, China and ASEAN can take the following measures to advance AI development and governance cooperation:

1. Promote Infrastructure Development to Lay the Foundation for Application of AI Technologies

Enhance alignment in development strategies and exchanges on policies.

Continuously enhance alignment in AI strategies to deepen policymakers' understanding of the critical role digital infrastructure plays in supporting AI development. Encourage policymakers to increase investment and provide policy guidance, foster mid- to long-term digital infrastructure development plans and properly make forward-looking investments, so as to create a solid foundation and healthy environment for AI growth. Encourage the creation of a favorable market environment to attract more enterprises to participate in the construction and application of digital infrastructure. Develop diverse financing models to support the advancement of AI technologies and industries for all parties involved. Policies can be tailored to each country's conditions. Countries with weaker connectivity could give priority to network connectivity to bridge the infrastructure gap. Countries with stronger connectivity could focus on accelerating the deployment of next-generation network infrastructure.

Continuously promote network coverage upgrades. Invest in broadband development to ensure widespread internet access and improve network infrastructure coverage, accessibility and affordability. Optimize network capacity to achieve 4G coverage and advance 5G deployment in regions where conditions permit. Strengthen power supply security to ensure stable and reliable power for digital infrastructure.

Accelerate collaboration on computing infrastructure. Encourage the joint development of data centers between Chinese and ASEAN industries, so as to provide adequate and accessible computing power services to meet the demands of AI development and application. Establish compatible and mutually beneficial regulatory policies for data centers and cloud computing to continuously expand mutual investment. Given that the AI era will witness far greater computing power demand and increasing electricity consumption and carbon emission, the two sides can encourage cooperation in areas such as optimized computing power allocation, technological innovation in industry, and the use of clean energy to support the sustainable development of computing infrastructure.

2. Accelerate Technology Applications and Jointly Build Innovative Ecosystems

Jointly build an open, inclusive and sustainable AI ecosystem. Encourage AI

startups and innovation groups from all parties to engage in mutual openness and accelerate ecosystem integration. Support enterprises, universities and research institutions in strengthening collaboration, conducting joint AI technology R&D, building minority language corpora and developing large models based on local languages. Establish shared AI application service platforms and encourage enterprises from different segments of the industry chain to cooperate by providing foundational models, capability support and fine-tuning large models, with the goal of developing AI applications that meet industry demands and address user pain points, unlocking potential in vertical domains and fostering a vibrant AI innovation ecosystem.

Jointly conduct demonstration projects for AI application scenarios to better empower economic and social development. Collect AI application case studies from businesses in China and ASEAN to actively share successful applications in agriculture, education, healthcare, transportation and smart manufacturing, stimulating and connecting market demand for AI products and services in both regions. To inspire and stimulate all stakeholders to improve their understanding of AI technology and its applications, China and ASEAN can select a group of cities to host rotating exhibitions of AI products and also consider setting up virtual exhibitions to facilitate cross-border exchanges and cooperation among businesses.

Jointly nurture AI talents and enhance capacity-building. Talent shortages are a significant constraint on AI industry development. Encourage leading companies from China and ASEAN to assist relatively underdeveloped areas in talent cultivation, establish professional skill certification programs and develop courses related to emerging ICT industries like big data, IoT and AI. Given the role of companies as key actors in AI applications, invite executives from less-developed regions to visit leading enterprises and research institutions for short-term training, so as to help them be acquainted with technological developments and applications and better understand how AI can enhance efficiency, transform production and reshape organizational structures, thereby promoting the application of AI technologies in these enterprises.

3. Promote Dialogues and Cooperation on AI Governance to Build Strong Shields for AI Safety and Ethics

Strengthen governance for the security of digital infrastructure. Given AI models' heavy reliance on data and the Internet, ensuring the security and sustainability of data and networks is essential. China and ASEAN can collaborate on key areas such as data center security, data encryption and access control to enhance protection measures. Data centers greatly require stable power and network support; thus, the two sides can promote data center support within ASEAN's energy networks, improving energy efficiency and establishing comprehensive disaster recovery plans to ensure business continuity. In terms of cybersecurity, faced with increasing transnational cyberattacks, data breaches and ransomware threats, the two sides can establish a joint security standards framework, and set up a joint cybersecurity working group to periodically review and update cybersecurity standards, regulations and compliance requirements. Additionally, they can create a cooperative mechanism based on existing Internet emergency response centers to enable rapid responses to cross-border cyber incidents.

Enhance cooperation on safe cross-border data flows. China and ASEAN can promote more efficient data usage, support digital transformation across industries and accelerate digital economic growth by facilitating safe cross-border data flows. Based on frameworks such as the *Regional Comprehensive Economic Partnership Agreement (RCEP),* the *Provisions on Regulating and Promoting Cross-border Data Flow* and the upcoming ASEAN *Digital Economy Framework Agreement (DEFA),* the two sides can hold discussions and work towards harmonizing data flow regulations and safety standards. With due respect for digital sovereignty, China and ASEAN can consider establishing safety mechanisms for cross-border data flows, fostering mutual trust in and recognition of respective digital governance rules to enhance the safety and convenience of data flows. Building on this, China and ASEAN can have deeper exchanges on data protection laws and join efforts to combat illegal personal data collection, cyber fraud and other abuses or monopolistic practices related to data. Additionally, the two sides could further explore governance pathways for

data flows within multilateral frameworks, striving to balance data security with the demand for free data flows, ultimately creating a more open and secure cross-border data ecosystem.[①]

Promote alignment of AI safety standards and risk management frameworks. To ensure the safe application of AI, China and ASEAN can work toward establishing consensual safety standards for AI governance. The two sides can enhance discussions on technical standards, policy coordination and alternative technical solutions, preventing fragmented standards that could negatively impact regional development and ensuring stability and sustainability within industrial and supply chains. In formulating global AI governance rules, China and ASEAN can cooperate to jointly propose international AI standards that encompass safety, privacy and ethics, helping them have a greater say in international rule-making. This collaboration will not only enhance consistency in standard alignment and risk management but also lay the foundation for a secure and sustainable regional technology ecosystem.

Deepen cooperation on AI ethics standards. In response to the rapid development of technology and its associated social and ethical risks, China and ASEAN could adopt a forward-looking approach to foster the establishment of AI ethics standards, creating a solid safety foundation for a future intelligent society. The two sides could establish a multidisciplinary expert group to proactively identify and address potential social and ethical challenges posed by AI technologies. To mitigate potential social risks, such as large-scale unemployment, they can jointly promote AI skills education to help workers adapt to job transitions brought about by technological advancements. Additionally, China and ASEAN could explore forward-looking topics, including societal risks brought by AI, AI in healthcare, deep synthesis technology, computational jurisprudence and human-machine co-governance. Incorporating perspectives from East Asian and Southeast Asian cultural viewpoints, the two sides can introduce a humanistic stance into AI governance to ensure that humanity remains central to

[①] Zhang Li, Sun Feiyang, "Cross-border Data Flow: Global Governance Trends and China's Regulation Strategies", Publishing House of Electronics Industry, 2022, P. 282.

technological progress.[①] By establishing preemptive risk assessment and public feedback mechanisms, this cooperation will shift governance from reactive to proactive, ensuring that AI development remains focused on benefiting humanity in a safe and responsible manner.

[①] Liu Zhengyi, Liang Zheng, Zheng Yejie, "Black Mirror and Order - AI Ethics and Governance in a Digital Risk Society", Tsinghua University Press, 2022, P. 60-61.

China-ASEAN Cooperation on AI Development and Governance: Observations on Progress and Suggestions for Advancement

07

Annex

- Global AI Governance Initiative
- Shanghai Declaration on Global AI Governance
- AI Capacity-Building Action Plan for Good and for All
- ASEAN Guide on AI Governance and Ethics

Annex 1

Global AI Governance Initiative

Artificial intelligence (AI) is a new area of human development. Currently, the fast development of AI around the globe has exerted profound influence on socioeconomic development and the progress of human civilization, and brought huge opportunities to the world. However, AI technologies also bring about unpredictable risks and complicated challenges. The governance of AI, a common task faced by all countries in the world, bears on the future of humanity.

As global peace and development faces various challenges, all countries should commit to a vision of common, comprehensive, cooperative, and sustainable security, and put equal emphasis on development and security. Countries should build consensus through dialogue and cooperation, and develop open, fair, and efficient governing mechanisms, in a bid to promote AI technologies to benefit humanity and contribute to building a community with a shared future for mankind.

We call on all countries to enhance information exchange and technological cooperation on the governance of AI. We should work together to prevent risks, and develop AI governance frameworks, norms and standards based on broad consensus, so as to make AI technologies more secure, reliable, controllable, and equitable. We welcome governments, international organizations, companies, research institutes, civil organizations, and individuals to jointly promote the governance of AI under the principles of extensive consultation, joint contribution, and shared benefits.

To make this happen, we would like to suggest the following:

We should uphold a people-centered approach in developing AI, with the goal of increasing the wellbeing of humanity and on the premise of ensuring social

security and respecting the rights and interests of humanity, so that AI always develops in a way that is beneficial to human civilization. We should actively support the role of AI in promoting sustainable development and tackling global challenges such as climate change and biodiversity conservation.

We should respect other countries' national sovereignty and strictly abide by their laws when providing them with AI products and services. We oppose using AI technologies for the purposes of manipulating public opinion, spreading disinformation, intervening in other countries' internal affairs, social systems and social order, as well as jeopardizing the sovereignty of other states.

We must adhere to the principle of developing AI for good, respect the relevant international laws, and align AI development with humanity's common values of peace, development, equity, justice, democracy, and freedom. We should work together to prevent and fight against the misuse and malicious use of AI technologies by terrorists, extreme forces, and transnational organized criminal groups. All countries, especially major countries, should adopt a prudent and responsible attitude to the research, development, and application of AI technologies in the military field.

We should uphold the principles of mutual respect, equality, and mutual benefit in AI development. All countries, regardless of their size, strength, or social system, should have equal rights to develop and use AI. We call for global collaboration to foster the sound development of AI, share AI knowledge, and make AI technologies available to the public under open-source terms. We oppose drawing ideological lines or forming exclusive groups to obstruct other countries from developing AI. We also oppose creating barriers and disrupting the global AI supply chain through technological monopolies and unilateral coercive measures.

We should promote the establishment of a testing and assessment system based on AI risk levels, implement agile governance, and carry out tiered and category-based management for rapid and effective response. R&D entities should improve the explainability and predictability of AI, increase data authenticity and accuracy, ensure that AI always remains under human control,

and build trustworthy AI technologies that can be reviewed, monitored, and traced.

We should gradually establish and improve relevant laws, regulations and rules, and ensure personal privacy and data security in the R&D and application of AI. We oppose theft, tampering, leaking, and other illegal collection and use of personal information.

We should adhere to the principles of fairness and non-discrimination, and avoid biases and discrimination based on ethnicities, beliefs, nationalities, genders, etc., during the process of data collection, algorithm design, technology development, and product development and application.

We should put ethics first. We should establish and improve ethical principles, norms, and accountability mechanisms for AI, formulate AI ethical guidelines, and build sci-tech ethical review and regulatory system. We should clarify responsibilities and power boundaries for entities related to AI, fully respect and safeguard the legitimate rights and interests of various groups, and address domestic and international ethical concerns in a timely manner.

We should uphold the principles of wide participation and consensus-based decision-making, adopt a gradual approach, pay close attention to technological advancements, conduct risk assessments and policy communication, and share best practices. On this basis, we should encourage active involvement from multiple stakeholders to achieve broad consensus in the field of international AI governance, based on exchange and cooperation and with full respect for differences in policies and practices among countries.

We should actively develop and apply technologies for AI governance, encourage the use of AI technologies to prevent AI risks, and enhance our technological capacity for AI governance.

We should increase the representation and voice of developing countries in global AI governance, and ensure equal rights, equal opportunities, and equal rules for all countries in AI development and governance. Efforts should be made to conduct international cooperation with and provide assistance to

developing countries, to bridge the gap in AI and its governance capacity. We support discussions within the United Nations framework to establish an international institution to govern AI, and to coordinate efforts to address major issues concerning international AI development, security, and governance.

Annex 2

Shanghai Declaration on Global AI Governance

We are fully aware of the far-reaching impact of artificial intelligence (AI) on the world and its great potential, and acknowledge that AI is leading a scientific and technological revolution and profoundly affecting the way people work and live. With the rapid development of AI technologies, we are also facing unprecedented challenges, especially in terms of safety and ethics.

We underline the need to promote the development and application of AI technologies while ensuring safety, reliability, controllability and fairness in the process, and encourage leveraging AI technologies to empower the development of human society. We believe that only through global cooperation and a collective effort can we realize the full potential of AI for the greater well-being of humanity.

1. Promoting AI development

We agree to actively promote research and development to unleash the potential of AI in various fields such as healthcare, education, transportation, agriculture, industry, culture and ecology. We will encourage innovative thinking, support interdisciplinary research collaboration, and jointly promote breakthroughs of AI technologies and AI for good. We will closely watch and mitigate the impact of AI on employment, and guide and promote the improvement of the quality and efficiency of AI-enabled human work.

We advocate the spirit of openness and shared benefit, and will promote exchanges and cooperation on global AI research resources. We will establish cooperation platforms to facilitate technology transfer and commercialization, promote fair distribution of AI infrastructure, avoid technical barriers, and jointly strengthen global AI development.

We agree to safeguard high-quality data development with high-level data security, promote the free and orderly flow of data in accordance with the law, oppose discriminatory and exclusive data training, and collaborate in the development of high-quality datasets, so as to better nourish AI development.

We will establish cooperation mechanisms to vigorously promote AI empowerment across industries, starting with accelerating smart application in such fields as manufacturing, logistics and mining, and simultaneously promoting the sharing of relevant technologies and standards.

We are committed to cultivating more AI professionals, strengthening education, training and personnel exchanges and cooperation, and improving AI literacy and skills around the world.

We call upon all countries to uphold a people-centred approach and adhere to the principle of AI for good, and ensure equal rights, equal opportunities and equal rules for all countries in developing and using AI technologies without any form of discrimination.

We respect the right of all countries to independent development, encourage all countries to formulate AI strategies, policies and laws and regulations based on their own national conditions, and call for abiding by the laws and regulations of countries receiving the goods and services, observing applicable international law, and respecting their economic and social systems, religious and cultural traditions and values in carrying out international cooperation on AI technologies, products and applications.

2. Maintaining AI safety

We attach great importance to AI safety, especially to data security and privacy protection. We agree to promote the formulation of data protection rules, strengthen the interoperability of data and information protection policies of different countries, and ensure the protection and lawful use of personal information.

We recognize the need to strengthen regulation, and develop reliable AI technologies that can be reviewed, monitored and traced. Bearing in mind the evolving nature of AI, we will use AI technologies to prevent AI risks and enhance the technological capacity for AI governance, on the basis of human decision-making and supervision. We encourage countries, in light of their national conditions, to formulate laws and norms, and establish a testing and assessment system based on AI risk levels and a sci-tech ethical review system. On this basis, we encourage the formulation of more timely and agile self-discipline norms for the industry.

We resolve to strengthen AI-related cybersecurity, enhance the security and reliability of systems and applications, and prevent hacking and malware applications. We decide to jointly combat the use of AI to manipulate public opinion, and fabricate and disseminate disinformation on the premise of respecting and applying international and domestic legal frameworks.

We will work together to prevent terrorists, extremist forces, and transnational organized criminal groups from using AI technologies for illegal activities, and jointly combat the theft, tampering, leaking and illegal collection and use of personal information.

We agree to promote the formulation and adoption of ethical guidelines and norms for AI with broad international consensus, guide the healthy development of AI technologies, and prevent their misuse, abuse or malicious use.

3. Developing the AI governance system

We advocate establishing an AI governance mechanism of a global scope, support the role of the United Nations as the main channel, welcome the strengthening of North-South and South-South cooperation, and call for increasing the representation and voice of developing countries. We encourage various actors including international organizations, enterprises, research institutes, social organizations, and individuals to actively play their due roles in the development and implementation of the AI governance system.

We agree to strengthen cooperation with international organizations and

professional institutes to share policies and practices of AI testing, assessment, certification and regulation to ensure the safety, controllability and reliability of AI technologies.

We agree to strengthen the regulatory and accountability mechanisms for AI to ensure compliance and accountability in the use of AI technologies.

4. Strengthening public participation and improving literacy

We agree to establish mechanisms for diverse participation, including public consultation, social surveys, etc., to include the public in decision-making on AI.

We will increase the public's knowledge and understanding of AI and raise public awareness about AI safety. We will carry out communication activities to popularize AI knowledge and enhance digital literacy and safety awareness among the public.

5. Improving quality of life and increasing social well-being

We will actively promote the application of AI in the field of sustainable development, including industrial innovation, environmental protection, resource utilization, energy management, and biodiversity promotion. We encourage innovative thinking in exploring the potential of AI technologies in contributing to the resolution of global issues.

We are committed to using AI to improve social well-being, especially in such fields as healthcare, education, and elderly care.

We are fully aware that the implementation of this declaration requires our joint efforts. We look forward to positive responses from governments, sci-tech communities, industrial communities and other stakeholders around the world. Together, let us promote the healthy development of AI, ensure AI safety, and empower the common future of mankind with AI.

Annex 3

AI Capacity-Building Action Plan for Good and for All

To bridge the AI and digital divides, especially to help the Global South benefit equitably from AI developments, China believes it is important to uphold the central and coordinating role of the United Nations (U.N.) in international development cooperation, pursue true multilateralism, fully implement the U.N. General Assembly Resolution on Enhancing International Cooperation on Capacity-Building of Artificial Intelligence (A/RES/78/311), and promote the implementation of the U.N. 2030 Agenda for Sustainable Development, through North-South, South-South and triangular cooperation and based on the principles of sovereign equality, development orientation, people-centred, shared benefits and inclusiveness, and multi-party coordination and cooperation. To this end, China proposes the AI Capacity-Building Action Plan for Good and for All, and calls on all parties to step up investments in AI capacity-building.

I. Vision and Goals

1. Promote AI and Digital Infrastructure Connectivity

Improve the global layout and interoperability of AI and digital infrastructure, actively assist all countries, especially those in the Global South, to develop AI technologies and services, and help the Global South truly access AI and keep up with the pace of AI advancements.

2. Empower Industries Through the AI Plus Application

Explore ways for AI to empower the real economy across all fields, chains and scenarios to advance the empowering application of AI in areas such as

industrial manufacturing, traditional agriculture, green transition and development, climate change response, and biodiversity conservation, and build robust and diverse ecosystems that enable the sound development of AI for the greater good based on local realities.

3. Enhance AI Literacy and Strengthen Personnel Training

Actively promote the application of AI in education, carry out exchange and training of AI professionals, increase the sharing of expertise and best practices, promote AI literacy among the public, protect and strengthen the digital and AI rights of women and children, and share AI knowledge and experience.

4. Improve AI Data Security and Diversity

Jointly promote the orderly and free cross-border flow of data in accordance with the law, explore the possibility of the establishment of a global data-sharing platform and mechanism, and protect personal privacy and data security. Promote equality and diversity in AI data sets to eliminate racism, discrimination, and other forms of algorithmic bias, and promote, protect, and preserve cultural diversity.

5. Ensure AI Safety, Reliability and Controllability

Uphold the principles of fairness and nondiscrimination, and support the establishment of global, interoperable AI risk assessment frameworks, standards and governance system under the framework of the U.N. that take into account the interests of developing countries. Conduct joint risk assessment on AI R&D and applications, actively develop and improve technologies and policies to address AI risks, and ensure that the design, R&D, use and application of AI contribute to the well-being of humanity.

II. China's Actions

—China is ready to engage with all countries on AI capacity-building

cooperation, including through North-South, South-South and triangular cooperation, jointly implement the outcomes of the U.N.'s Summit of the Future, actively work with other countries, especially fellow developing countries, to jointly develop AI infrastructure, build joint laboratories.

—China is ready to carry out cooperation on the R&D of AI models and the empowering application of AI, especially in areas such as poverty reduction, health care, agriculture, education and industrial manufacturing, to deepen international cooperation on AI industry and supply chain, and to unlock the dividends of AI as a new quality productive force.

—China is ready to work with other countries, especially fellow developing countries, to tap the potential of AI in green development, climate change response and biodiversity conservation, thereby contributing to global climate governance and sustainable development.

—China is ready to establish an international cooperation platform for AI capacity-building, and Chinese AI industries and industrial alliances are ready to engage in diverse forms of exchange with other countries, especially fellow developing countries, to share best practices, build open-source and inclusive AI communities in a responsible manner, and foster a multilevel cooperation ecosystem that encompasses various forms of business.

—The Chinese government will hold short and medium-term AI capacity-building programs for fellow developing countries, share relevant AI education resources and jointly carry out AI education and exchange programs to help them cultivate high-caliber professionals in AI technology and its applications.

—The Chinese government is ready to strengthen assistance and cooperation with other countries, especially fellow developing countries, on relevant human resources cooperation. Building on the first Workshop on AI Capacity-Building this year, the Chinese government will hold 10 AI workshops and seminars primarily aimed at fellow developing countries by the end of 2025.

—China is ready to work with other countries, especially fellow developing countries, to promote AI literacy among the public, disseminate AI knowledge and expertise across multiple dimensions, at multiple levels and by multiple

means, both online and offline, and strive to improve AI literacy and skills within their populations, with a particular focus on protecting and advancing the digital rights of women and children.

—China is ready to work with other countries, especially fellow developing countries, to develop AI language or data resources, take proactive steps to eliminate racial, algorithmic and cultural discrimination, and promote, protect, and preserve linguistic and cultural diversity.

—China is ready to work with other countries, especially fellow developing countries, to develop and improve data infrastructure and promote the fair and inclusive use of global data.

—China is ready to work with other countries, especially fellow developing countries, to better synergize AI strategies and strengthen policy exchanges, actively share policies and technical practices in AI testing, evaluation, certification, and regulation, and jointly address AI risks related to ethics, safety and security.

Annex 4

ASEAN Guide on AI Governance and Ethics

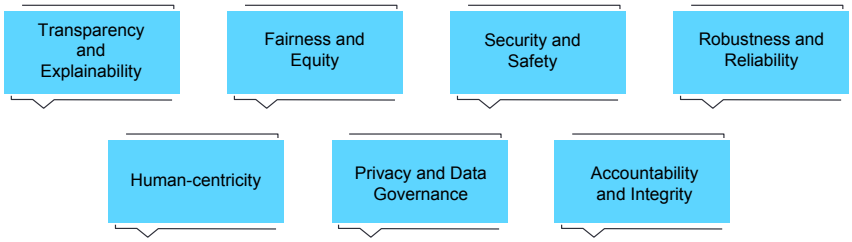
Contents

Executive Summary

What the Guide is about

This document serves as a practical guide for organisations in the region that wish to design, develop, and deploy traditional AI technologies in commercial and non-military or dual-use applications. This Guide focuses on encouraging alignment within ASEAN and fostering the interoperability of AI frameworks across jurisdictions. It also includes recommendations on national-level and regional-level initiatives that governments in the region can consider implementing to design, develop, and deploy AI systems responsibly.

Guiding Principles for the Framework



4 Key Components

Internal governance structures and measures

- Multi-disciplinary, central governing body, such as an AI Ethics Advisory Board, to oversee AI governance efforts
- Develop standards, guidelines, tools, and templates to help organisations design, develop, and deploy AI responsibly
- Clearly lay out the roles and responsibilities of personnel involved in the responsible design, development and/or deployment of AI

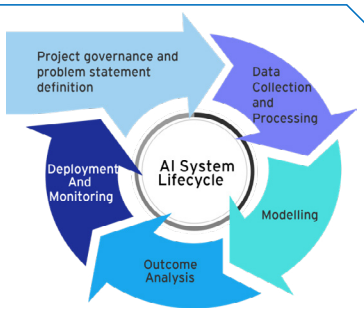
Determining the level of human involvement in AI-augmented decision-making

- Conduct relevant risk impact assessments to determine level of risk
- Three broad categories of human involvement based on level of risk – human-in-the-loop, human-over-the-loop, human-out-of-the-loop
- Mitigating risks helps build trust towards the acceptance and greater use of AI technologies in the region

ASEAN Guide on AI Governance and Ethics

Operations management

- The AI System Lifecycle consists of various stages and is often an iterative process
- Conduct risk-based assessments before starting any data collection and processing or modelling
- Mitigate risks of unjust bias due to insufficiently representative training, testing and validation datasets



Stakeholder interaction and communication

- Develop trust with stakeholders throughout the design, development, and deployment of AI
- Provide general disclosure of when AI is used in products and/or service offerings
- Put in place measures to help employees adapt to an AI-augmented work environment

National-level Recommendations

Nurturing AI talent and upskilling workforce

Work closely with public and private sectors to ensure that a country's workforce can adapt to the new ways of working and possesses enough digital skills to interact effectively with AI systems.

Supporting AI innovation ecosystem and promoting investment in AI start-ups

Work closely with public and private sectors to create a supportive environment for AI development, where companies are able to access and leverage data, digital technologies, and infrastructure.

Investing in AI research and development

Keep abreast of the latest developments in AI and encourage research related to the cybersecurity of AI, AI governance, and AI ethics to ensure that the safety and resiliency of AI systems and tools also advance in parallel with new use cases.

Promoting adoption of useful tools by businesses to implement the ASEAN Guide on AI Governance and Ethics

Deploy tools to enable the implementation of AI governance in operations and ensure that documentation and validation processes are more efficient.

Raising awareness among citizens on the effects of AI in society

Raise awareness of the potential risks and benefits of AI so citizens can make informed decisions about the appropriate use of AI and take appropriate actions to protect themselves from harmful uses of AI systems.

4

Regional-level recommendations

Setting up an ASEAN Working Group on AI Governance to drive and oversee AI governance initiatives in the region

The Working Group can consist of representatives from each of the ASEAN member states who can work together to roll out the recommendations laid out in this Guide, as well as provide guidance for ASEAN countries who wish to adopt components of this Guide, and where appropriate, include consultation with other industry partners for their views and input.

Adaptation of this Guide to address governance of generative AI

Risks include:

- Mistakes and anthropomorphism
- Factually inaccurate responses and disinformation
- Deepfakes, impersonation, fraudulent and malicious activities
- Infringement of intellectual property rights
- Privacy and confidentiality
- Propagation of embedded biases

Governance should include:

- Adaptation of existing frameworks and tools
- Guidance on developing a shared responsibility framework
- Guidance on increasing the capacity to manage risks of generative AI
- Guidance on how to distinguish AI-generated content versus authentically generated ones

Compiling a compendium of use cases demonstrating practical implementation of the Guide by organisations operating in ASEAN

A compendium of use cases showcases the commitment of these organisations to AI governance and helps them promote themselves as responsible AI practitioners.

Use Cases

Illustration of components of the ASEAN Guide on AI Governance and Ethics through use cases of organisations operating in ASEAN that have implemented AI governance measures in AI design, development, and deployment.

- Gojek
- Aboitiz Group
- Smart Nation Group (SNG), Singapore
- UCARE.AI
- EY
- Ministry of Education, Singapore

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