ADB

RKSI
ADB–PRC Regional Knowledge Sharing Initiative

Talk China
SEMINAR

Harnessing AI to Promote High-Quality Development

Shu Zhan
Alternate Executive Director, ADB

MDB mandate Evolving

ADB Strategy for Digital Transformation

- Poverty Reduction and Regional Public Goods
- Universal Digital Coverage
- Human Capital Transformation
- Strategic Partnership

Evolution of Development Theory

- Classical Economics: Land, Labor, Capital
- Institutional Economics: Institutions and governance
- Knowledge Economy: Innovation, IP, R&D
- Paul Romer's Theory: Knowledge as an endogenous growth driver
- MDBs must align with knowledge-driven development and more relevant in the new AI era.

1. Positioning

ADB+AI ⟶ AI+ADB(mainstreaming AI)?

+

ADB

Overview of AI in ADB-financed projects

ADB has supported 110 projects that incorporated artificial intelligence and machine learning between 2010 and 2024, with adoption accelerating after 2020 and peaking at 17 new projects in 2024.

Infrastructure leads in AI adoption.

Many AI applications focused in infrastructure sectors, led by Energy (33), followed by Transport (21), and Urban Development (21).

Other sectors are catching up on AI use.

Agriculture accounts for 11 projects, while Public Sector Management represents 7, and smaller portfolios exist in ICT, Education, and Health.

Geographical distribution of AI projects.

Geographically, AI investments are most concentrated in South and East Asia, growing momentum in Central Asia and the Pacific.

Smart Infra + Data Plumbing

The center of gravity is digital infra modernization (smart meters/grids, ITS, telecom backbones) with data plumbing (analytics, GIS, SCADA).

ADB AI and Big Infrastructure

AI Products

- ADB Genie (chatgpt,deepseek)
- Audit Genie
- CRFF Genie
- EVA

External Data Portal

- ERDI open data platform
- SPI Data Portal
- Climate Hub Portal

Data Products

Open source to subscription-based:

- Climada Open Source
- JPA Flood Maps
- Moody's API

2. How to transform

L E A D

L E A D

L - Learning

IAAS:
Infrastructure as a Service-stage 1

SAAS:
Software as a Service-stage 2

"I"AAS:
Intelligence as a Service-stage3 which enhances capacity support for remote areas in DMCs without adequate health staffs

New model:
Smart Diagnosis, Automated Workflow, Platform Services

L E A D

E - Equality

AI breaks barriers of geography and resources

Enables access to quality service for all

Optimizes processes to reduce costs and improve efficiency

Long-tail effect
AI Democratization

L E A D

A - Accountability and Autonomy loss

Compliance

Privacy Risk

Governance

L E A D

D – long-term Development

Transform from lending model and culture to investing model and culture for development finance

Paradigm shift of risk management and evaluation

More strategic Investment rather than strategic and financial investment

PRC Fund

AI for Advancing High-Quality Healthcare Services

This project aims to leverage PRC's experience and technologies in the field of AI in healthcare to support ADB DMCs(Indonesia, Bangladesh, and Pakistan) in developing localized AI healthcare solutions.

It will help optimize the allocation of healthcare resources especially fill the shortage of Doctors in the remote region and improve relevant legislation and regulatory frameworks.

South –south cooperation

3. Who leads who?

Computing Algorithm should be fundamentally about serving people

AI's mission is to enhance, not replace, human capital

Love,
Compassion, Respect,
Personalized Care

Thank you!

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Promoting AI Application for High-Quality Development in the People's Republic of China

WU Tongning

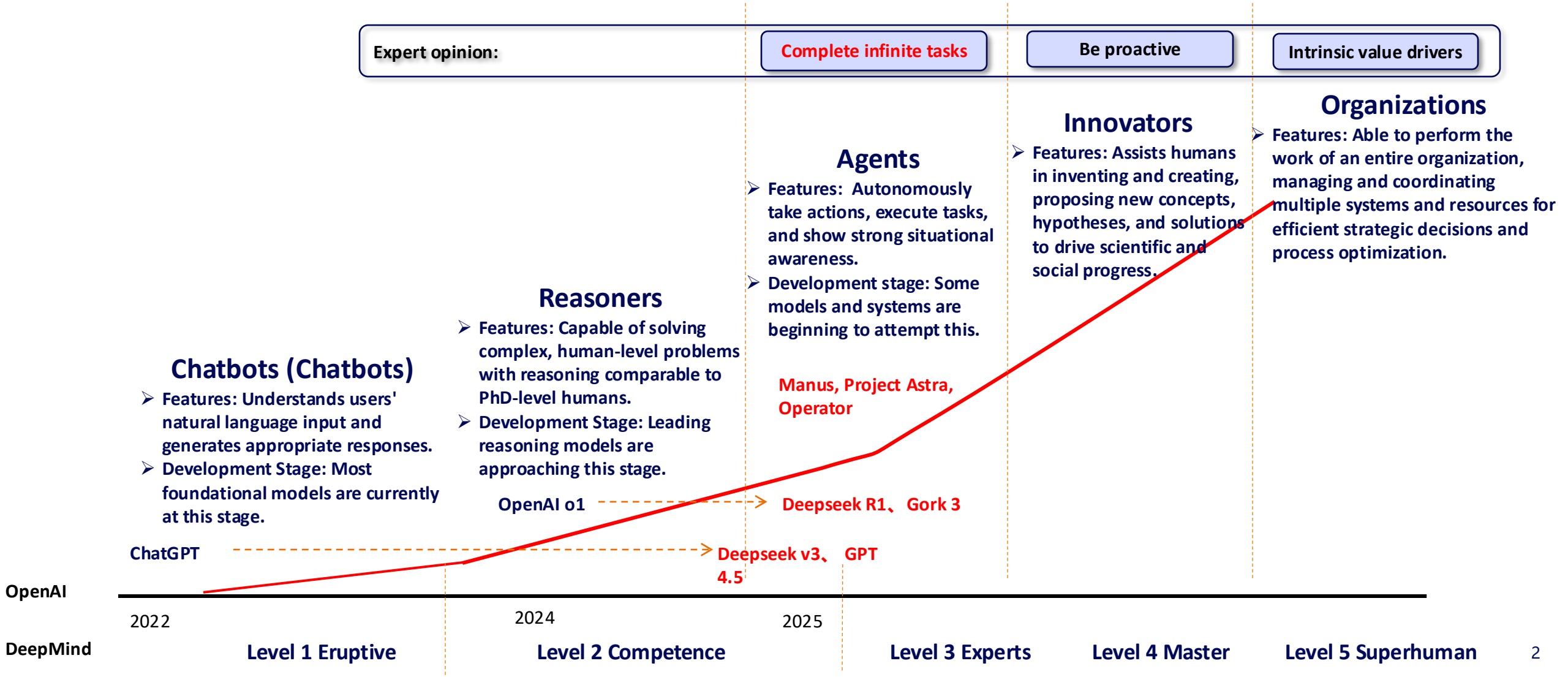
Artificial Intelligence Research Institute

China Academy of Information and Communications Technology (CAICT)

September 2025

The development level of cutting-edge AI is close to the threshold of AGI

- Since the end of 2024, artificial intelligence has made significant progress in generation, reasoning and agent, and is close to the threshold of AGI. The industry and academia are generally predicting that it will be realized within ten years.



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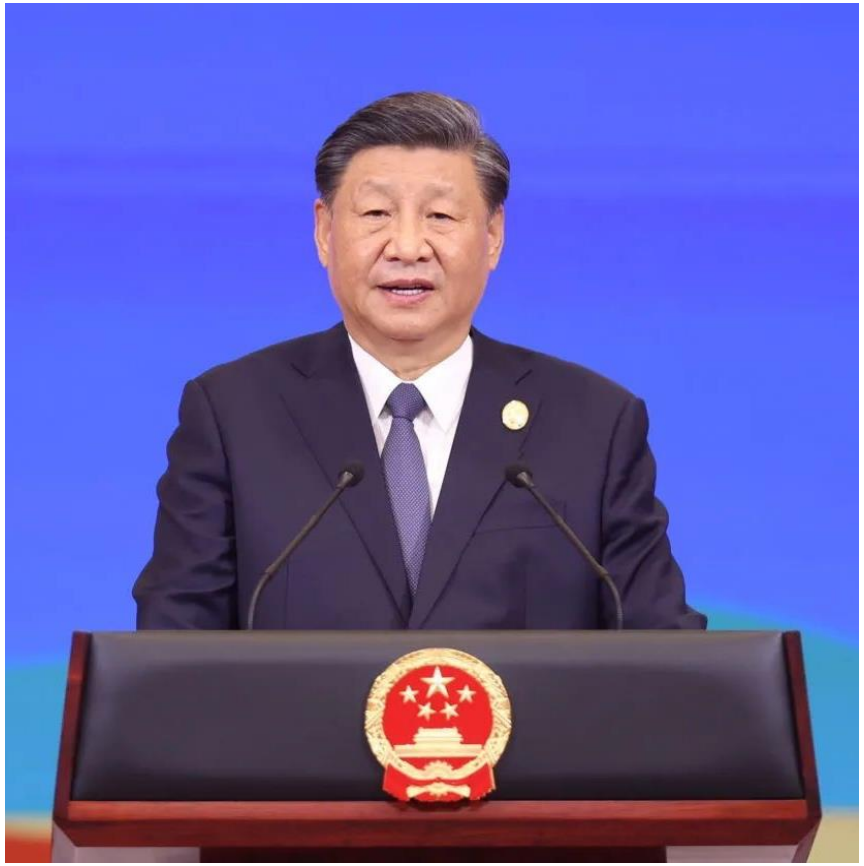
China upholds the principle of giving equal importance to development and security, advancing AI to benefit humanity



President Xi Jinping released China's plan for AI governance

On October 18, 2023, President Xi Jinping announced the launch of *the **Global AI Governance Initiative*** at the opening ceremony of the Third Belt and Road Forum for International Cooperation, systematically outlining China's plan from the strategic perspective of the Community with a Shared Future for Mankind.

Development	Security	Governance
People-centered, intelligence for good, mutual respect, equality and mutual benefit	Ensure that artificial intelligence remains under human control at all times	Improve legal frameworks, prioritize ethics, and discuss the establishment of an international AI governance body under the UN framework

Chinese Government attaches great importance to the development of the AI industry

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➢ **Since China released the *New-Generation Artificial Intelligence Development Plan* in 2017, it has elevated AI to a national strategy.**

Planning and Layout

- ***New Generation Artificial Intelligence Development Plan***
- ***Opinions on Strengthening the Governance over Ethics in Science and Technology***

Strengthen Implementation

- ***Three-Year Action Plan for Promoting the Development of the New-Generation Artificial Intelligence Industry***
- ***Implementation Opinions on Promoting the Innovative Development of Future Industries***

Focus On Industries and Pursue Efficient Governance

- scenario application
- standard system
- security assurance
- ethical governance

• Ministry of Science and Technology

- Coordinate and advance the development of the national governance system for science and technology ethics
- Jointly issue the *(Trial) Measures for Science and Technology Ethical Review*

• Cyberspace Administration of China

- Be responsible for the governance of AI cybersecurity and information security, and conduct algorithm filing
- Jointly issue the *Interim Measures for the Management of Generative AI Services*

• Ministry of Industry and Information Technology

- Take the lead in advancing the safe and healthy development of AI, and promote the development of the science and technology ethics system **in the field of industry and information technology**

5

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➢ **In August 2025, China released the <a guideline on deepening the implementation of its "AI Plus initiative " > setting key milestones : widespread and deep application by 2027, and comprehensively enables high-quality development by 2030.**

3 Steps

2027
Breakthroughs in Key Areas

- ✓ Deep integration in key sectors: **R&D, Industry, Consumption, Livelihood, Governance**
- ✓ Next-generation intelligent terminals and agents are used by over 70%, with the intelligent economy's core industries expanding rapidly

2030
Comprehensive Enablement

- ✓ **Comprehensively enables high-quality development**
- ✓ Next-generation intelligent terminals and agents are used by over 90%, with **the intelligent economy** becoming a **major growth driver of China's economy**

2035
Fully Enters Intelligent Society

- ✓ China enters a new stage of an intelligent economy and smart society, providing strong support for achieving socialist modernization.

6 Actions

+ R&D
+ Industrial Development
+ Consumption Upgrade
+ People's Livelihood
+ Governance Capacity
+ Global Cooperation

8 Supports

Model Capabilities | Data Supply | Intelligent Computing | Application Environment | Open Source Ecosystem | Talent Pool | Policies & Regulations | Security Level

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Technological Innovation: Deepseek contributes to diversifying the global AI landscape

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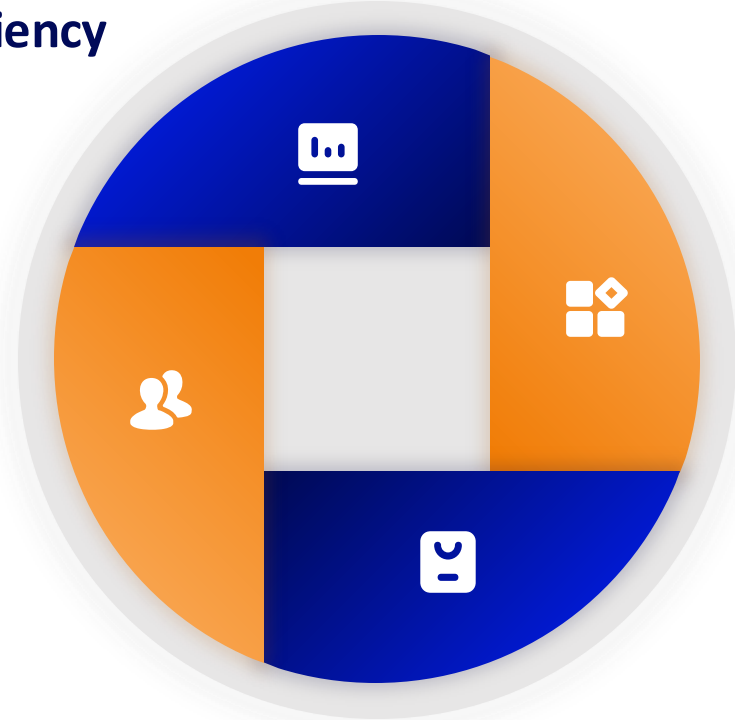
- The release of the DeepSeek series of cutting-edge models has triggered a strong response in many fields, including technology and the market, on a global scale. DeepSeek is promoting the gradual transformation of the global artificial intelligence landscape through innovative technologies at the source.

1. Improve Computing Resource Efficiency

Enhancing compute utilization is an effective solution to the global chip shortage.



2. Drive Original Technological Innovation

Innovation is key to breaking technical barriers and building a competitive edge.

3. Build an Open-Source Ecosystem

Open source fosters collaboration, avoids redundant R&D, accelerates innovation, and lowers entry barriers.

4. Assemble a Top-Tier R&D Team

Key enablers for developing world-leading large models

Industrial Ecosystems: China's AI industry ecosystem has taken initial shape

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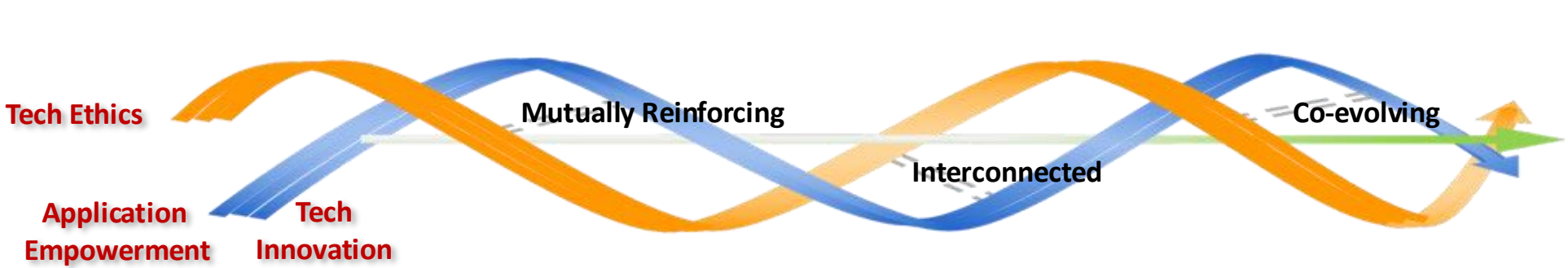
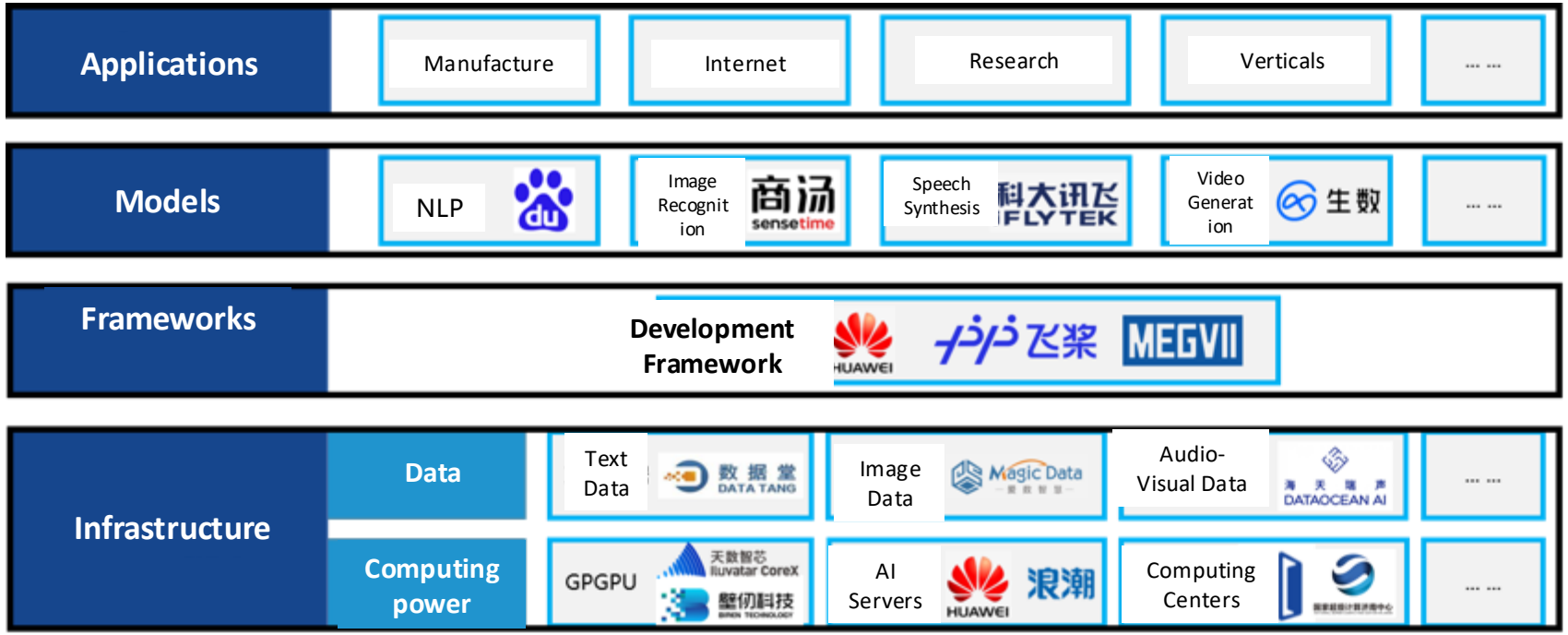
- **China has established a comprehensive tech-industrial system spanning: infrastructure, frameworks, models, and applications.**



Defining a New Model of AI Development

Enabling sustainable development
Enhancing shared human well-being



Enabling Applications: accurate and intelligent decision-making in the whole process of production and operation

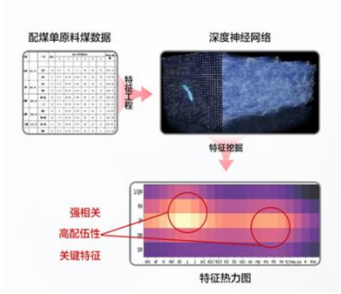
- **AI is gradually integrated into core areas of enterprise quality, production, safety, and sustainability, optimizing and stabilizing industrial structures and driving the transformation and upgrading of traditional industries.**

Several more segmented and focused intelligent applications of new scenarios have emerged

格物优信
YOSEEN INFRARED

YOSEEN INFRARED: Using sintering layer thickness, speed, and other data, AI accurately predicts layer penetration and cross-section temperature.

Deeper integration with mechanistic knowledge, moving toward industrial-focused cognitive intelligence



Shiheng Special Steel: AI-based coal blending modeling uncovers coal property correlations, achieving over 97% accuracy in coke quality prediction.

Evolving from isolated scenario-based AI to multi-step integrated decision-making aimed at global optimization

Xiaomi: AI integrated into integrated die-casting enables intelligent alloy development, injection parameter optimization, and equipment monitoring across multiple stages.

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Actively contributing Chinese solutions to global AI governance

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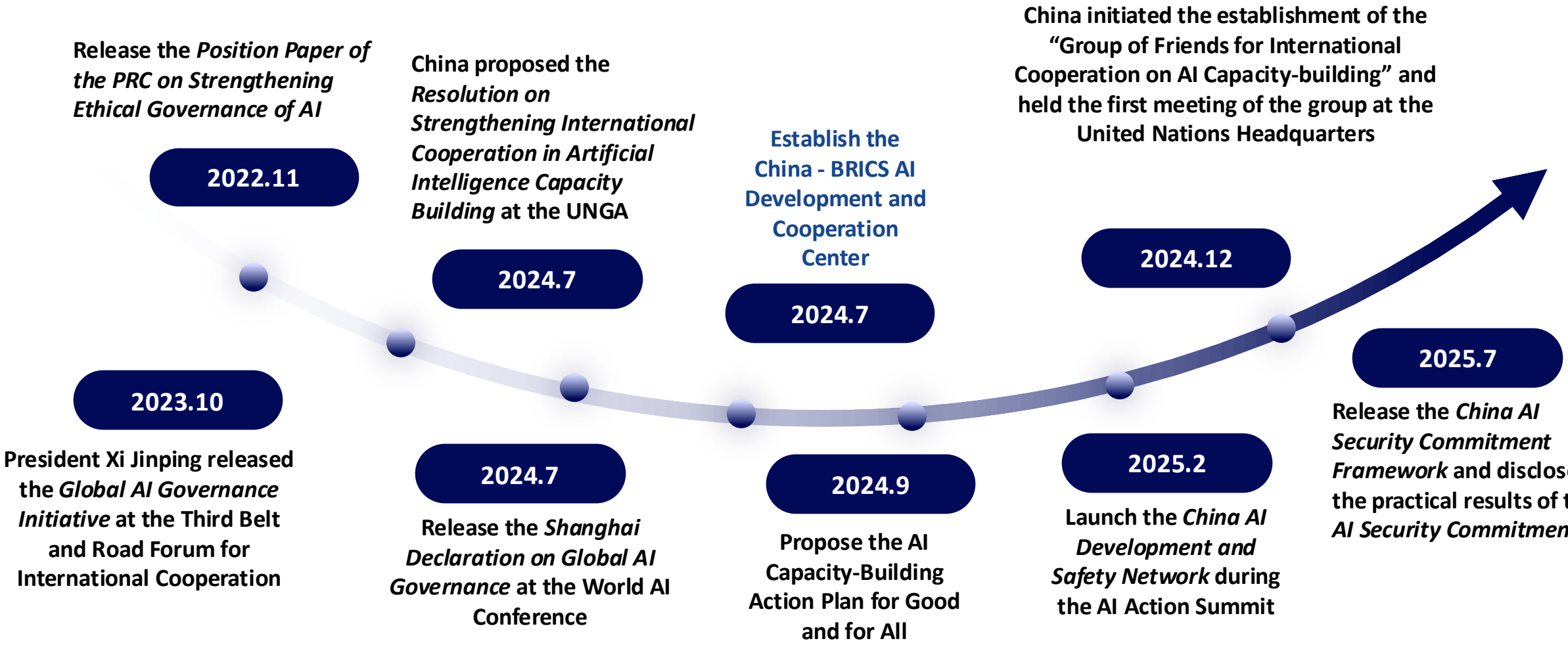
- **China adheres to the principles of putting people first and promoting the goodness of AI. It actively participates in the governance of AI-related rules within the framework of the United Nations, puts forward initiatives such as the *Global AI Governance Initiative*, contributes Chinese solutions to global AI governance.**



China - BRICS Artificial Intelligence Development and Cooperation Center

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- **In Oct. 2024, "China has recently launched the China-BRICS Artificial Intelligence Development and Cooperation Center. We are ready to deepen cooperation on innovation with all BRICS countries to unleash the dividends of AI development," announced by President Xi Jinping at the 16th BRICS Summit. Since its establishment, the Center has conducted international AI policy research and industry analysis, spearheaded initiatives under the BRICS framework, and expanded its global AI collaboration.**

Jul 2024: Inauguration of the China–BRICS AI Development and Cooperation Center.

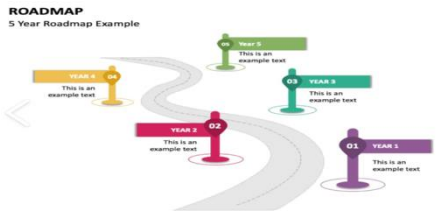
Sep 2024: AI Forum under the BRICS Partnership on New Industrial Revolution (PartNIR) framwork.

May 2025:hosted the BRICS High-Level Forum on Artificial Intelligence. The forum received enthusiastic support from 4 Brazilian vice ministers who delivered opening addresses. The event was included as an official side event of the 2025 BRICS Industry Ministers' Meeting.

Jul 2025: Hosted the seminar "Innovating for Impact: Successful AI Application Cases" in Geneva

May 2025: Release of the "AI Typical Products and Application Casebook" in Chinese, English and Portuguese, featuring industrial large-model products and implementation practices.

May 2025: AI Development and Cooperation Outlook in BRICS Countries (2025) co-authored by 23 experts from BRICS countries (Brazil, Russia, China, South Africa, Egypt, UAE, Iran, Ethiopia) and UNIDO.



Jul 2025 : Release of the "Guidance Framework for the International Cooperation of AI Enterprises" at the World AI Conference, offering guidance for Chinese AI firms going global.

Actively engage in practical cooperation with Asian countries

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➢ **CAICT has carried out a series of practical collaborations under key Asian multilateral mechanisms such as APEC, SCO, China-Japan-ROK cooperation, and China-ASEAN cooperation, contributing China's think tank expertise to deepening AI cooperation across Asia.**

Asia-Pacific Economic Cooperation

- **APEC Project:** ***Telemedicine in the Asia-Pacific Region: Network Architecture, Capacity, and Feasibility***

Shanghai Cooperation Organization

- **Build China-SCO Big Data Cooperation Center**
- **Participate in China-SCO Digital Technology Cooperation Development Forum**
- **Participate in Chia-SCO AI Cooperation Forum**

China–Japan–ROK

- **Conduct joint research on the digital society in collaboration with Nomura Research Institute (NRI) of Japan.**
- **Co-host an AI industry-academia collaboration matching event with Hansung University of South Korea.**

China-ASEAN

- **Participate in *ASEAN AI Malaysia Summit 2025***
- **Held *the China-ASEAN Digital Ecosystem Cooperation Forum* during the 5th ASEAN Digital Ministers Meeting**
- **Hosted high-level delegations from Asia countries including Singapore, Laos, Cambodia, Vietnam, Indonesia, and Malaysia.**

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Call for International Cooperation on AI

Strengthening Technology Exchange, Deepening Industrial Cooperation

- Focusing on **AI-powered manufacturing, agriculture, tourism** and other pillar industries and widely recognized scenarios across Asian countries， enhance technological exchange, pool innovation resources
- Encourage **exploration of diverse and emerging cooperation models**, activate data, talent, and capital as production factors, and **jointly build an industrial ecosystem** to share development dividends.

Building AI Capacity, Sharing Platforms and Tools

- **Jointly organize AI training programs** to cultivate AI talent and enhance AI capacity building in developing countries.
- **Build an open-source AI ecosystem in Asia,** promoting in-depth integration of data, computing power, and typical applications.
- **Collaborate to establish AI governance models suited to Asia, facilitate mutual recognition of technical standards**.

Advancing International Cooperation, Achieving Common Development

- Continue to deepen international AI cooperation through APEC, SCO, China-Japan-ROK Trilateral Cooperation, and China-ASEAN collaboration.
- Establish **dedicated cooperative institutions,** developing practical and sustainable working mechanisms
- **build a regional cooperation hub and create a new model of collaboration.**

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Thanks!

AI Applications in Primary Health Care in 3 Selected Chinese Provinces

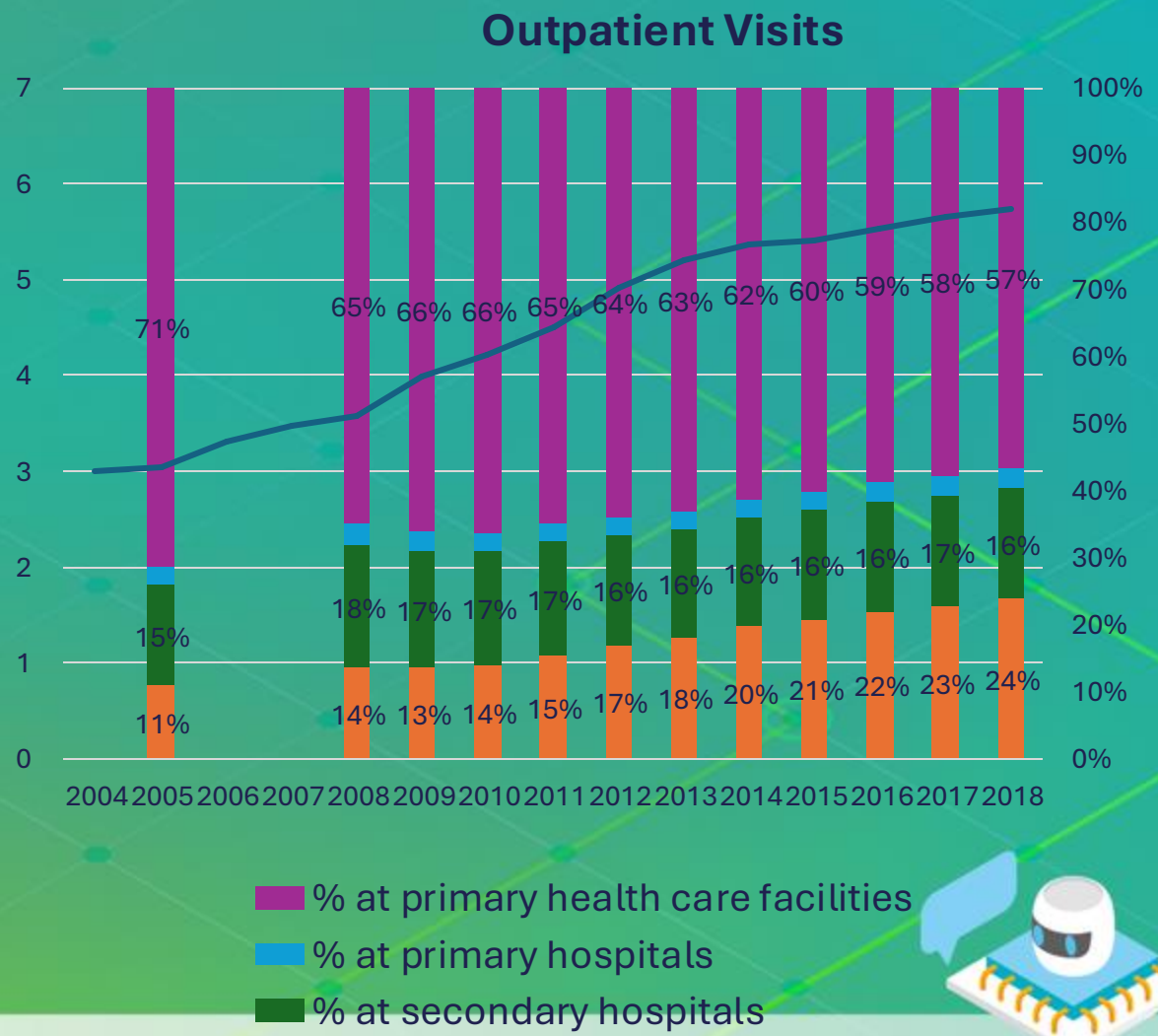
Sen GONG

Centre for International Studies on Development and Governance

Zhejiang University

Traditional approach to strengthening primary health care in China

- Resolution in 2011 to establish the general practitioner system in China.
- Target: 2-3 qualified GPs per 10,000 residents.
- By 2022, China: 3.28
  Zhejiang: 3.99
  Jiangxi: 1.67
  Guizhou: 2.27



AI-Empowered Primary Health Care: Zhejiang Pilots

- The “Smart Mobile Clinic” model in Jingning County
- 7 AI-equipped mobile clinics now serve all remote mountain villages, providing over 100,000 medical services.
- Standardized management rates for chronic diseases exceeding 70%.
- Per-visit costs for residents have dropped 20.83% on a year-to-year basis.

AI-Empowered Primary Health Care: Zhejiang Pilots

- The AI-assisted diagnosis system in Zhuji City.
- Adopted in all primary healthcare institutions;
- Assisted over 12 million consultations, automatically identifying and correcting 79,000 non-compliant medical records.
- Its AI-empowered triage supports self-assessment for over 13,000 symptoms.

AI-Empowered Primary Health Care: Jiangxi Pilots

- The province-wide “Smart Medical Care System”:

- Reviewed over 48 million prescriptions and generated 26.34 million standardized medical records.

AI-Empowered Primary Health Care: Jiangxi Pilots

- AI's immediate oversight effect in Pingxiang City:

- Before: only 3-4 out of 10 village clinics could provide standardized medical records;
- NOW: The number of non-compliant records has dropped to few.

- Enhancing efficiency in a township hospital, Nanchang City:

- Treatment time: cut 40%;
- Medical insurance violations eliminated .

AI-Empowered Primary Health Care: Guizhou Pilots

- The “Smart ECG (Electrocardiogram) Network” in Qiandongnan Prefecture:
- AI-assisted interpreting over 14,000 electrocardiograms, successfully identifying and treating more than 20 acute myocardial infarction patients;
- Diagnosis time: cut down from a few hours to 30 minutes

AI-Empowered Primary Health Care: Guizhou Pilots

- AI-driven digital management of chronic diseases in Qingzhen City, Guiyang:

- Standardized management rates: over 96% for hypertension and diabetes;
- Residents' health literacy levels exceed the national average by 11.76 percentage points.

Difficulties and Challenges

- Reliability of Infrastructure: 5G in remote and mountainous areas.
- Large initial investment in AI systems: a few million yuan.
- Data security and privacy protection risks.
- Ethical and legal responsibilities poorly defined: regulatory frameworks lagging behind technological advancements.
- willingness and capabilities of primary care providers to accept.
- AI hard to replace human because of lack of communication with and empathy for patients.

Towards a new approach?

- Medical professionals led: not necessarily a GP.
- Collaborated with IT persons.
- State action plan for AI applications:

To explore and scale up high quality AI health aids for all residents, and to facilitate AI applications in health management scenarios.

- Can AI win the trust of residents?

AI Empowering Agriculture

Smart Agriculture：Technological Innovation and Practice in China

Zhang Huijie
Agricultural Information Institute,
China Academy of Agriclutural Sciences (CAAS)

24 September, 2025

Chinese agricultural development

key words: **Digitization, intelligence, greening, branding**

Digital Agriculture: From "**Sweat** Agriculture" to "**Smart** Agriculture"

Digital technology is deeply changing traditional agricultural production methods.

插秧机以“雁阵”型匀速前进

Digital technology,
is profoundly changing traditional agricultural operating methods

阳原县电商从业者正在直播带货。仝辉 摄

阳原县优质杂粮种植产业基地。河北省农业农村厅供图

Intelligent Equipment:
Agricultural Machinery Revolution Shapes New Productivity

***Guiding Opinions on Developing Smart Agriculture*：** need to comprehensively improve the **application level of smart agriculture, promote precision planting** of major crops, **digitalization of facility planting**, **intelligence of animal husbandry** & **fishery production**, and **breeding mechanisms**, and digitalization of the entire agricultural chain.

***The National Action Plan for Smart Agriculture (2024-2028)*：** need to implement actions to enhance the **public service capacity** of smart agriculture, create a national agricultural and rural **big data platform**, jointly build a " **one map**" of agricultural and rural land, and develop **basic models** for smart agriculture; To implement the application expansion action in key areas of smart agriculture, empower the large-scale yield improvement of major crops, cultivate a number of smart agriculture (animal husbandry, fishery) farms, and promote the digital transformation of the entire agricultural industry chain; To implement the demonstration and driving action of smart agriculture, promote the pilot and exploration of the future direction of smart agriculture.

Promoting AI Application in Asia and the Pacific and ADB's Role

Albert Park, ADB

Talk China Seminar | 24 Sep 2025
East Asia Forum, Beijing, PRC

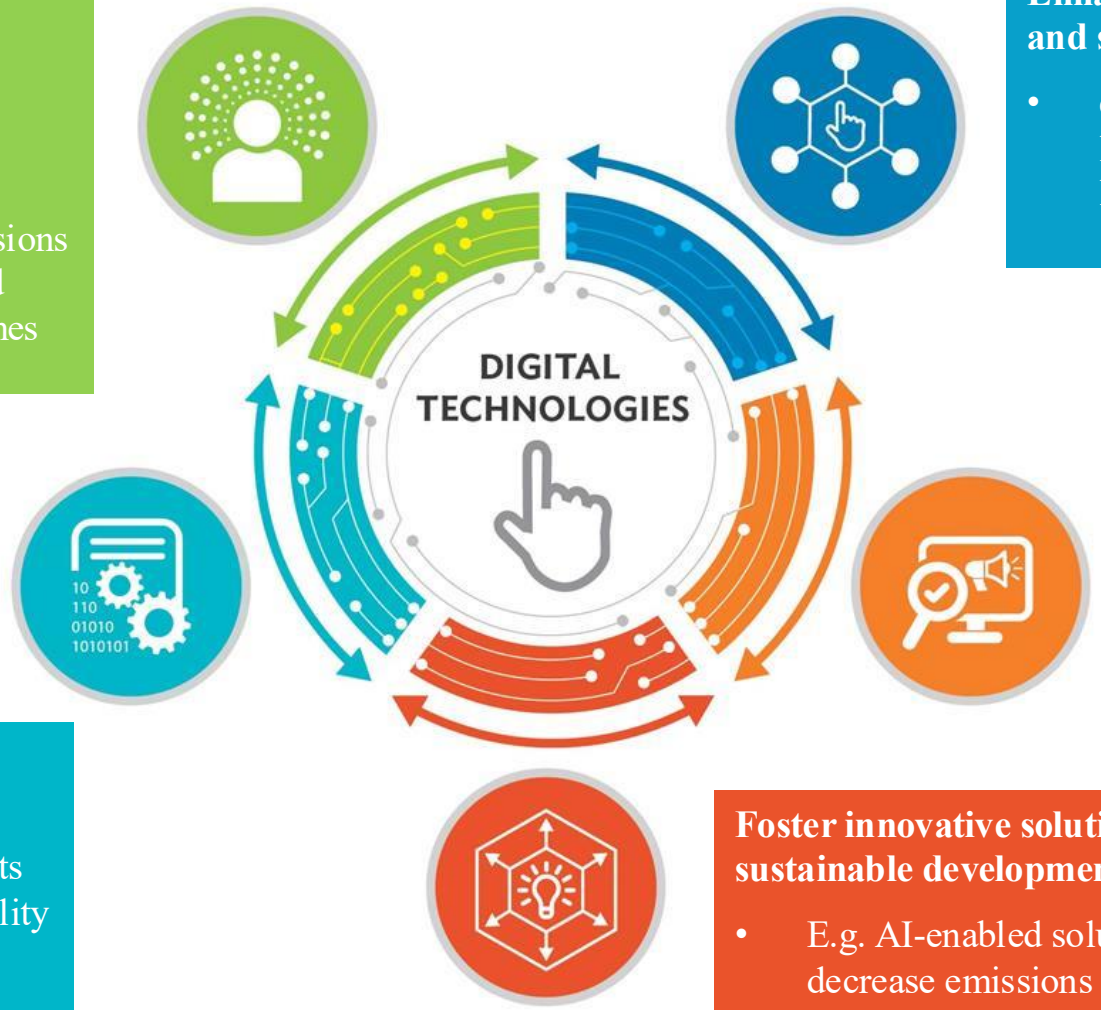
AI applications promote inclusive and sustainable development through five channels

Promote sustainability and nudge behavioral changes

- E.g. AI enabled "Energy Expert" by Alibaba help businesses within the ecosystem measure emissions and carbon footprints and develop mitigating schemes

Enhance access to information and services

- e.g. AI-enabled help identify learning gaps and personalize learning experience



Strengthen monitoring and response

- Greater resilience via AI-enabled disasters nowcasting
- AI-enabled analytics can provide advisory to farmers on resistant crop varieties

Improve productivity and efficiency

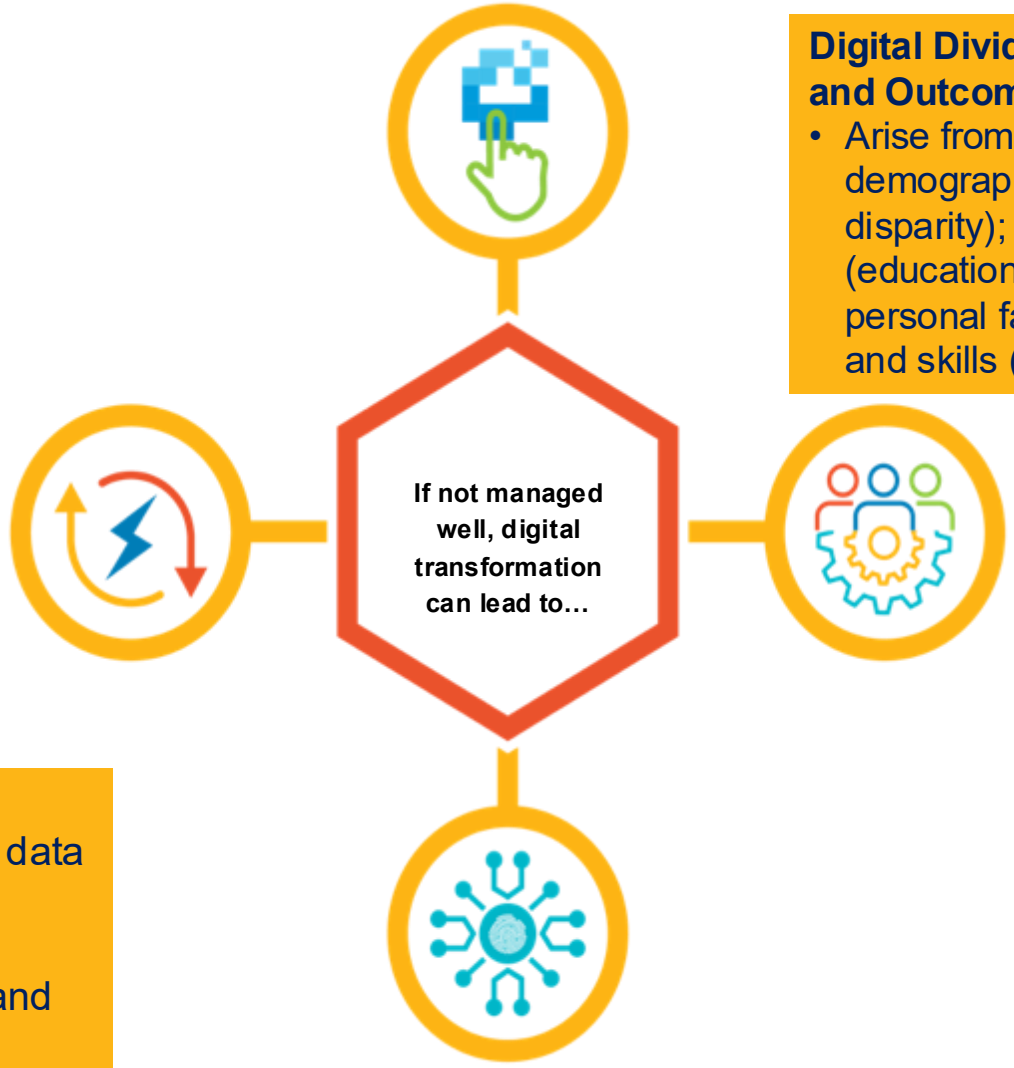
- E.g. AI-enabled chatbots improve service capability and quality.

Foster innovative solutions for sustainable development

- E.g. AI-enabled solutions help decrease emissions in hard to abate sectors

If not managed well, digital transformation can exacerbate inequality and compromise sustainability

Uncertain Impacts on Energy Consumption and Emissions
- Energy efficiency gains versus increased energy consumption from expanded production and behavior responses
- Emission is related to energy sources used to power digital technologies



Digital Divides (Disparity in Access, Use, and Outcome)
- Arise from various factors including demographic factors (age, geographic disparity); socioeconomic factors (education, employment, income); personal factors (risk perception, trust); and skills (competency)

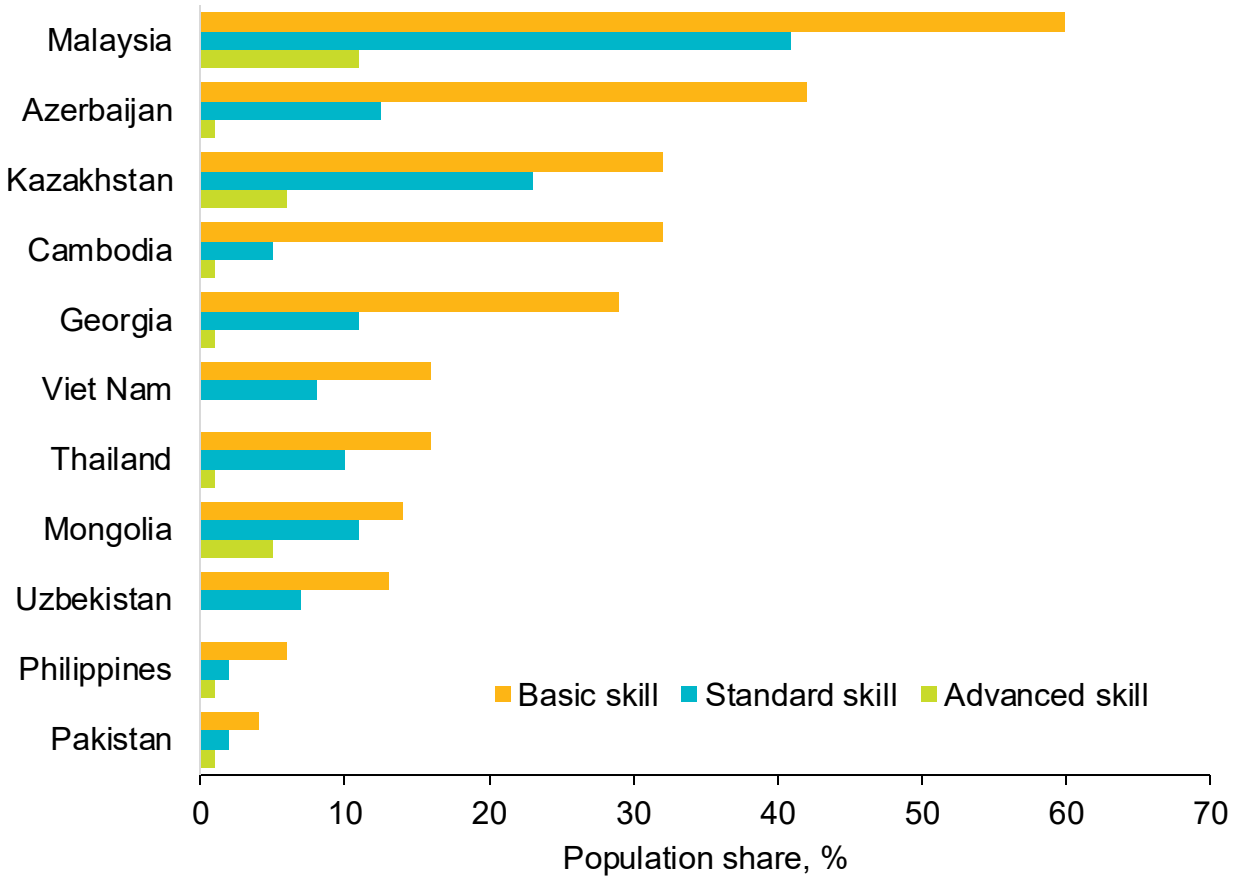
Complex Job Market Impacts
- Substitution effects due to automation versus increased employment from expanded production and new job tasks

Weak Digital Governance
- Concerns over cybersecurity, data privacy, misinformation, and market competition
- Erodes trust in technologies and disproportionately impacts vulnerable groups, potentially widening inequalities

Source: ADB. 2025. *Harnessing Digital Transformation for Good: Asian Development Policy Report.*

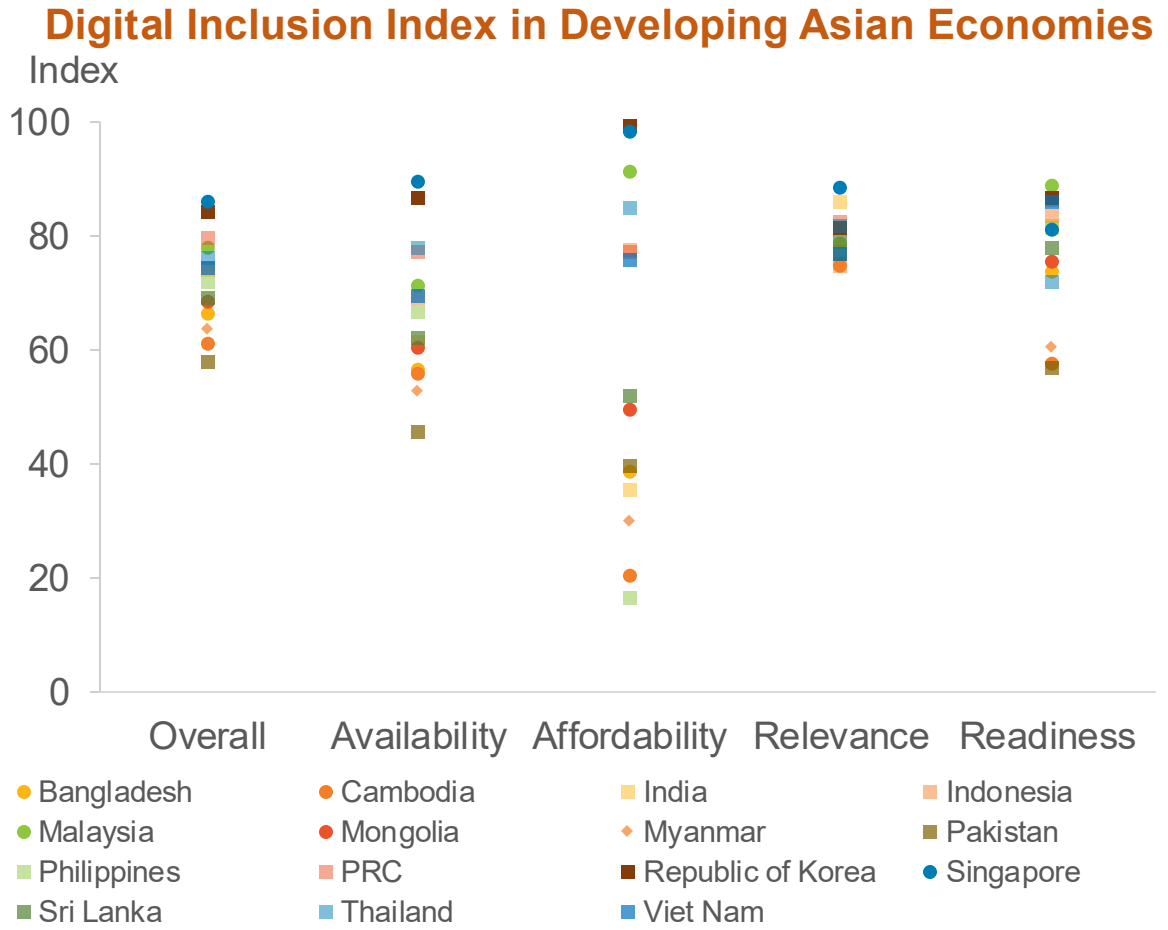
Digital divides are a real concern

Digital skills remain generally low in developing Asia.



Source: ADB. 2025. *Harnessing Digital Transformation for Good: Asian Development Policy Report.*

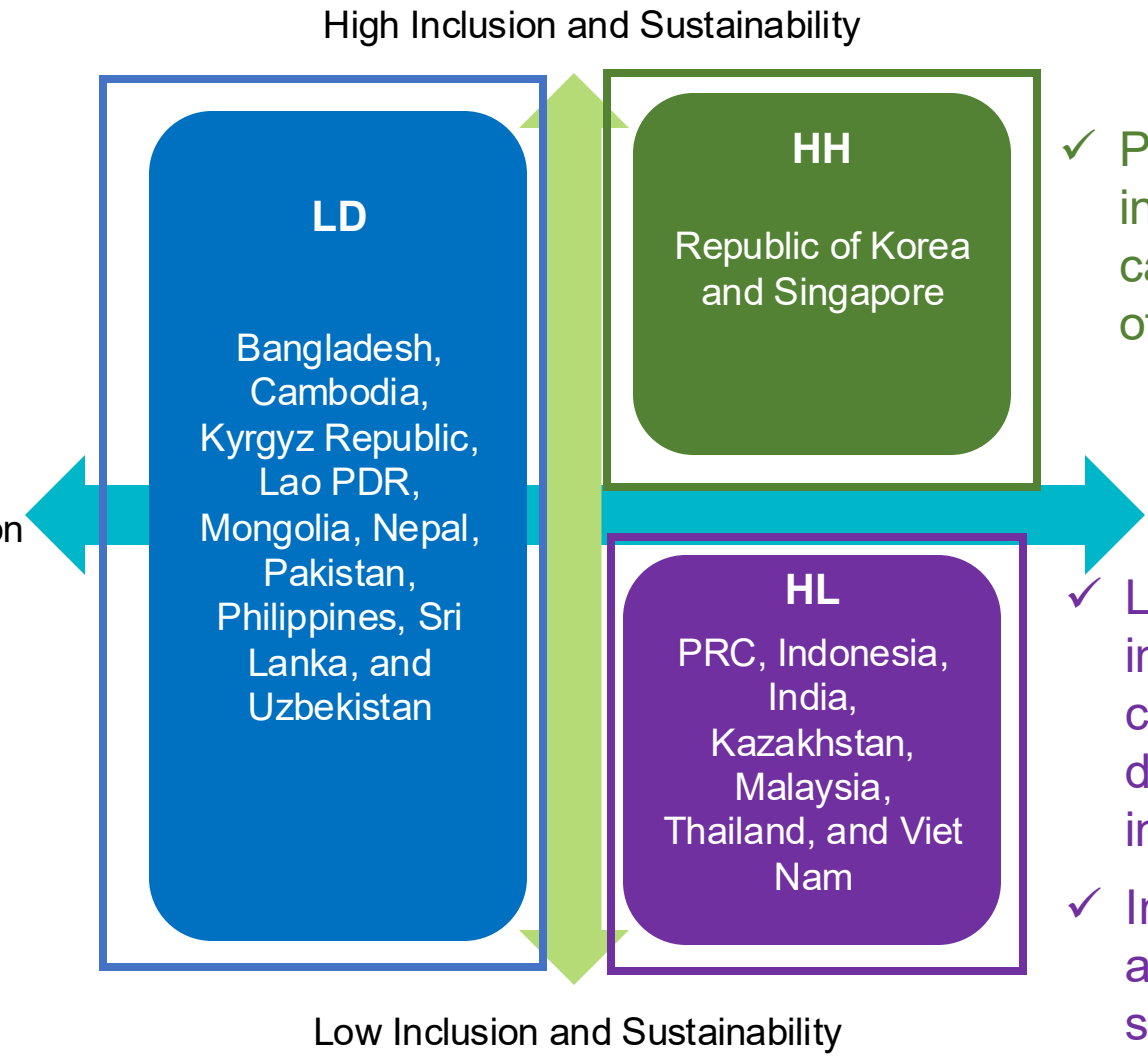
Developing Asian economies vary significantly in digital inclusion, especially in affordability.



PRC = People's Republic of China.
Source: ADB. 2025. *Harnessing Digital Transformation for Good: Asian Development Policy Report.*

The right policy mix for digital transformation depends on country circumstances such as institutional capacity and policy priorities

- ✓ Accelerate digital transformation by investing in digital infrastructure and skills.
- ✓ Use cost efficient solutions, e.g., infrastructure sharing, spectrum sharing, virtual facilities such as cloud-based solutions.
- ✓ Promote adoption of digital technologies that build resilience and strengthen disaster risk management.



- ✓ Push the frontier with sound institutions, infrastructure, and capacity, and act as the model of best practice.
- ✓ Leverage existing digital infrastructure and skills to close digital divides and decarbonize digital infrastructure.
- ✓ Incentivize innovation and adoption of inclusion and sustainability friendly technologies.

HH = High-Digitalization, High Inclusion and Sustainability; HL =High-Digitalization, Low Inclusion and Sustainability; Lao PDR = Lao People's Democratic Republic; LD = Low-Digitalization; PRC = People's Republic of China.
Source: ADB. 2025. *Harnessing Digital Transformation for Good: Asian Development Policy Report.*

Challenges to applying AI tools in developing countries

- **Lack of Local AI Talent:** Effectively using or customizing AI tools requires skilled professionals, yet many developing countries face shortages of talents in AI and data science
- **Need for Regulatory Frameworks:** Governments need to develop appropriate regulations and guidelines to ensure safe, fair and responsible use of AI, including data protection laws and guidelines on AI in critical domains
- **Promoting Ethical AI Use and Literacy:** Raising awareness about AI's limitations and promoting critical thinking among users is essential for fostering informed and responsible engagement with the technology

AI applications: Health

- **Automated imaging analysis and report generation**
- Where there is lack of doctors, **administer screening or tests** so that only complicated cases need to be seen by doctors
- **Facilitate diagnostics** for tuberculosis and other diseases
- **Voice-to-Prescription (V2P) system** captures and processes real-time conversations to improve quality of care
- **Preventive medicine** app, designed specifically to promote lifestyle changes that reduce cardiovascular disease risk
- **Predict the outbreak of emerging infectious diseases** such as dengue, identifying hotspots, triggering alerts, and guiding actions
- **Claim settlements, fraud control and monitoring** to improve the effectiveness of national health insurance programs

AI for inclusive education

Enable Tailored Learning

- GenAI enables teachers to tailor learning content for specific groups.
- Personalized learning assistance is more beneficial to students in developing economies where education quality and resources are more limited.

Address Language Barriers

- The high-quality translation and content generation of large language models can integrate teachers and students excluded from other global resources due to language barriers.
- Non-native English speakers can benefit from GenAI-enabled personalized language tutoring and translation to access more educational resources.

Support Disadvantaged Groups

- GenAI can assist learning among disadvantaged groups, such as students with disabilities.
- Note-taking may be facilitated by converting audio lecture into texts, which can be studies along with course slides using large language models.

Source: Child (2025).

AI applications: Education

Requests from DMCs for ADB support:

- **Policy guidelines** for use of AI
- **Student personalized learning** (including chatbot in local language)
- **AI solutions for teachers**: AI question generator, AI lesson plan, AI chatbot, semi-automated essay graders, also teacher training
- **AI readiness assessment framework** for higher education institutions
- **Design AI course electives** for senior high school
- **Provide career guidan**ce

AI applications: Agriculture

- In agricultural research, **identify genetic markers** for desired traits (nutritious, resilient to diseases and climate stresses)
- **Image analysis for identifying plant health and diseases, cropping areas, and crop damage** due to disasters (e.g., 2022 Pakistan flood)
- **Precision farming** for efficient use of inputs (e.g., by using AI-assisted mobile devises)
- Enhance **disaster risk forecasting and risk management** responses such as evacuation planning

How can ADB help?

- Support digital transformation strategies (infrastructure, skills)
- Support regulatory frameworks for responsible and ethical use of AI
- Invest in socially impactful AI innovation through venture capital, R&D grants (e.g. Bangladesh)
- Pilot and evaluate use of AI applications
- Build capacity of users to understand and utilize AI applications
- Finance investments to scale up use of AI solutions

Thank You!

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SCAN ME

What is the experiences and progress in Empowering Artificial Intelligence Applications for High-Quality Development in Indonesia? How ADB can better support it?

Presented in
East Asia Forum 2025: Advancing High-Quality Development in East Asia: Productivity, Innovation, and Economic Openness
and
Talk China Seminar: Harnessing AI to Promote High-Quality Development

ADB and RKSI

Deputy Chairman for Research and Innovation Policy,
National Research and Innovation Agency of the Republic of Indonesia

Beijing, The People's Republic of China,
23-24 September, 2025

01

White Paper on the National Artificial Intelligence Roadmap (Indonesia)

Main Objectives of Indonesia's National AI Roadmap

1. Drive Economic Growth

- Through the development and utilization of Artificial Intelligence
- Focused on the President's Priority Programs and *Quick Wins* under the *Asta Cita* agenda

2. Enhance Global Competitiveness

- Strengthening Indonesia's capacity in AI development and application
- Positioning Indonesia as a competitive player in the global AI ecosystem

02

The strategy covers seven key aspects

The National Artificial Intelligence Roadmap sets out recommendations for national strategies by taking into account the evaluation of current conditions, international benchmarks, desired future scenarios, and an analysis of internal and external factors.

1 **Ethics**

Covering three aspects—operational AI code of ethics, AI ethics validation, and an AI ethics observatory—the national ethics framework for AI in Indonesia can be comprehensively established.

2 **Policy**

Pro-innovation policies, grounded in ethical principles, are anticipated to drive the development of Artificial Intelligence that is ethical, human-centered, and responsible.

3 **Talent Development**

The development of AI talent is managed through an integrated learning ecosystem, encompassing both formal and non-formal education pathways. Each year, the number of AI talents is targeted to increase by at least 25% to meet the needs of industry, MSMEs, and government institutions in adopting AI technologies.

4 **Infrastructure and Data**

The national AI infrastructure will serve as a key enabler for a wide range of applications—ranging from smart public services.

5 **Research and Industrial Innovation**

The initial step that needs to be taken is to strengthen the coordination of research activities through an integrated collaboration network.

6 **Investment and Financing**

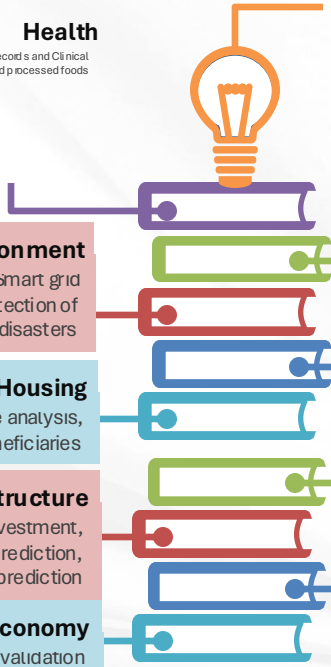
A financing system that is strategic, inclusive, and adaptive, capable of effectively supporting AI-based economic activities.

7 **Development of Use Cases**

The potential use cases are broad, tailored to the specific needs of each sector. Strategic areas such as food security, health, education, and the creative economy can leverage AI to accelerate the achievement of various priority programs.

03 (Indonesia) National Priority Areas

The National Priority Areas encompass specific sectors that are strategically directed for the development and utilization of AI use cases, ensuring maximum impact, effectiveness, and sustainability. The determination of these National Priority Areas refers to the National Long-Term Development Plan (RPJPN) 2025–2045, the National Medium-Term Development Plan (RPJMN) 2025–2029, and the Asta Cita agenda, so that AI initiatives are aligned with national development goals and digital transformation priorities.



Health

Early detection of stunting, Screening and monitoring of latent TB, Monitoring of chronic and elderly patients, Structured medical records and Clinical Decision Support, Free health check-ups, Fraud detection and optimization of JKN claims, Monitoring of pharmaceutical supplies and processed foods

Food Security

Crop yield prediction, Land productivity enhancement, MBG menu development, Raw material supply monitoring, Region-based demand forecasting, Distribution and logistics optimization, Food waste management, Kitchen condition monitoring

Education

Strengthening teacher capacity with adaptive AI training, Adaptive learning and curriculum personalization, Talent management and specific competency development, Real-time data-based monitoring and evaluation, Data-driven teacher incentives and welfare

Energy, Natural Resources, and Environment

Energy demand forecasting, Waste collection route optimization, Smart grid management optimization, Investment scenario modeling, Early detection of energy supply risks, Early detection of natural disasters

Economy and Finance

Identification of downstream product potential, Performance monitoring of Merah Putih Cooperatives, State financial management, Inflation forecasting

Housing

Automation of housing project prioritization, Land-based housing price analysis, Eligibility assessment for housing assistance beneficiaries

Bureaucratic Reform

Procurement of goods and services, Public service performance, Anomaly analytics for detecting illegal levies and permits

Transportation, Logistics, and Infrastructure

ROI (Return of Investment) prediction for physical infrastructure investment, Logistics cost reduction, Integrated smart city implementation, Crowd prediction, Traffic congestion detection and prediction

Politics, Legal/Law, and Security

Monitoring disinformation potential, AI-based complaint system, Strengthening cybersecurity with AI, AI-based public accountability dashboard

Arts, Culture, and Creative Economy

Preservation of arts, culture, and the creative economy, Verification and validation of cultural data, Local tourism destination recommendations

04 BRIN Research Roadmap 2025–2029

Health and Pandemic Response
AI is applied for detection, response, and recovery from COVID-19. This includes early warning systems, anomaly detection, analysis of medical imagery and symptom data, probability assessment of exposure, and tracing transmission chains. AI is also used for drug prediction, vaccine prototyping, and supporting healthcare services through robots, virtual assistants, and chatbots

Sports Sciences
Research involves developing AI-based predictive models for therapy response and human physical potential, as well as obesity risk analysis and data-driven sports therapy

Bioinformatics and Drug Development
AI is integrated into bioinformatics for molecular modeling, computer-aided drug design, multi-omics analysis, and computer vision for satellite image object identification. The roadmap also includes research on Generative AI for applications in health, food, environment, and cybersecurity

Industry and Economy
Within the program on industrialization and inclusive business, the roadmap highlights AI adoption to strengthen science and technology competitiveness, precision agriculture, digital finance, and the national digital-based logistics system

05

Empowering AI Applications for High-Quality Development in Indonesia

Industry, MSMEs, and Digital

AI in manufacturing (quality control, predictive maintenance); Gojek's machine learning for service personalization; Tokopedia's AI-driven product innovation; BRI's chatbot "Sabrina"; Telkomsel's AI assistant "Veronika"

Digital Government and Smart Cities

AI-based one-stop public services and citizen chatbots; 100 Smart Cities initiative (real-time traffic, air quality monitoring); Nodeflux for video analytics in Jakarta

Health Services

BRIN's AI model for malaria diagnosis (80% accuracy); AI in telemedicine and smart hospitals to expand healthcare access in remote areas

Education and Research

Universitas Terbuka integrated AI assistants in 1,000 virtual classes reaching 60,000 students; Ruangguru using AI for personalized learning; BRIN's AI & Cybersecurity Research Center

Agriculture, Fisheries, and Food

"NN Marlin" app predicts fishing zones via satellite data, reducing fuel costs; smart farming trials for crop recommendation and pest detection; eFishery platform for aquaculture advice

06

ADB's Role and Support Going Forward

Financing Pilot Projects in Priority Sectors

ADB is expected to support pilot AI projects in strategic areas, such as:

- ❑ Health: Tuberculosis (TB) and stunting screening in community.
- ❑ Education: AI tutors for vocational schools.
- ❑ Agriculture: AI applications for smart farming, including irrigation and fertilization optimization.
- ❑ ADB-funded pilot projects can serve as proof-of-concept models that can later be scaled up nationwide.

Strengthening Digital and AI Infrastructure

ADB plays a crucial role in financing the development of digital infrastructure such as national data centers, cloud computing facilities, broadband expansion, and high-performance computing for research.

This support will extend AI access to remote areas, enabling telemedicine, digital education, smart farming, and data-driven public services.

Developing AI Talent and Literacy

ADB can help build human capital through training programs, scholarships, and exchange opportunities for students and researchers with regional AI centers. ADB may also support large-scale bootcamps and online learning platforms, accelerating Indonesia's target of producing one million AI talents.

Supporting Research, Innovation, and Startup Incubation

ADB can provide technical assistance and research grants for applied AI projects aligned with development goals—such as AI for public health, precision agriculture, and climate adaptation. ADB could also contribute to establishing innovation labs, incubators for AI startups, and linking to BRIN resources with global AI networks through collaboration with BRIN.

Terima Kasih