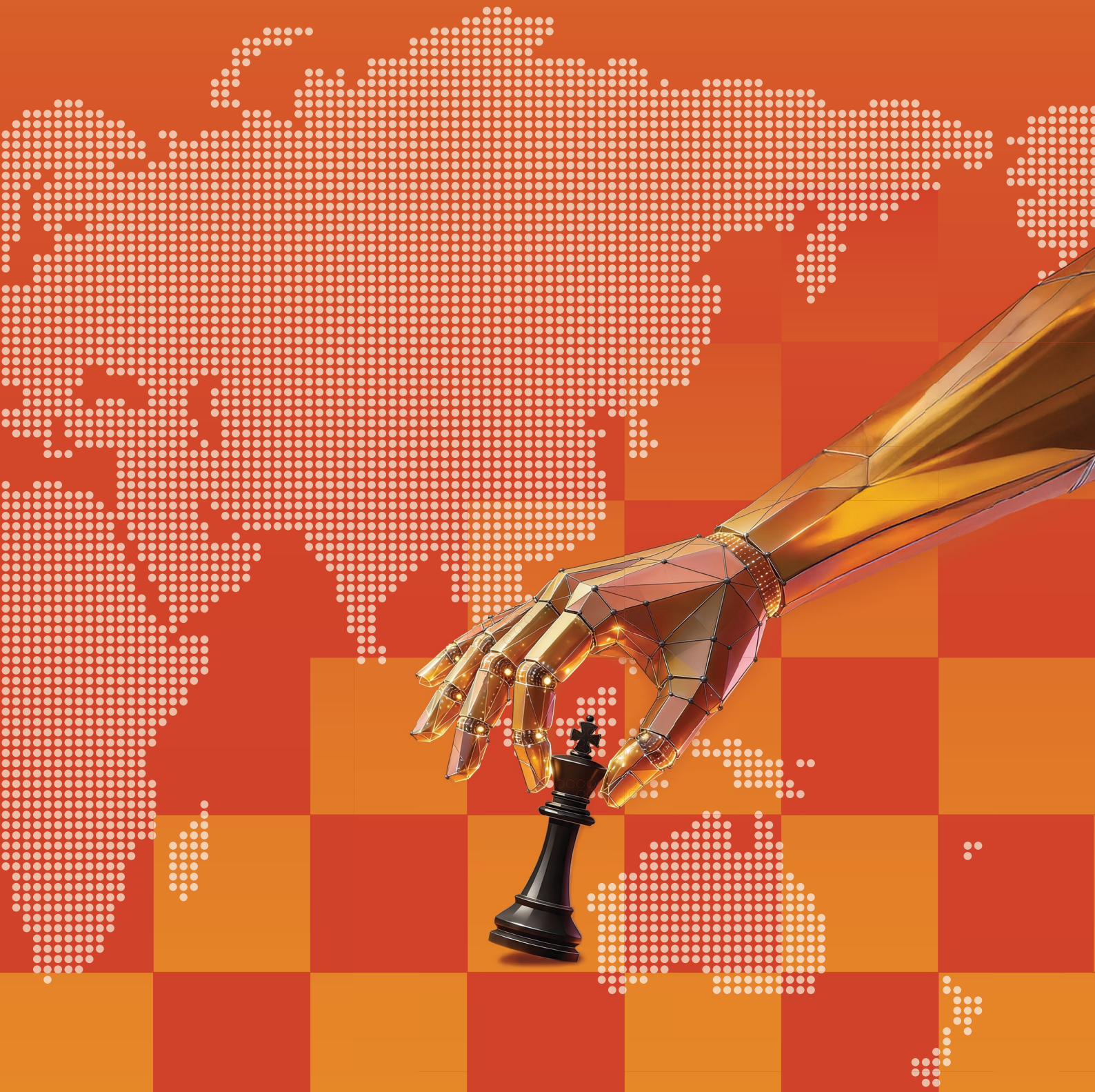
Shaping Power: AI's Impact on Grand Strategy in the Indo-Pacific



Kubernein Initiative

This report has been authored by Kubernein Initiative, an independent, female led, geopolitical advisory firm based in India working to mainstream issues that need greater intellectual capacity and focus.

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Introduction

Grand Strategy has traditionally been the domain of "great powers", as scholars focused on ways to influence the global system, which historically only a few states have been capable of doing. Balzacq, Dombrowski and Reich write of moving away from this framing that keeps grand strategy in the domain of a few states, and towards a framework that lets you establish who can strategise, and with what goals in mind.[1] This opens up the discussion immensely, as different countries are bound to have different responses to emerging global challenges, and in today's interconnected world, the smallest of responses can have global repercussions. The nature of threats has also shifted, where military threats remain ever-present even in the face of deterrence, but others such as climate change and technology related have also come to the fore.

The framings of grand strategy for a country can be seen through its ideological consideration that drives its approach towards traditional security, and economic and developmental concerns. Through research, interviews, and scenario based exercises we have tried to assess how countries react when emerging Artificial Intelligence (AI) related technology is added to the mix, whether approaches will remain the same? Or will their actions differ? The role of the private sector vis a vis the public sector is critical here, as the former holds the reins for the development of the technology, while the latter controls the freedom to deploy. This research is particularly significant within the context of the vast and varied Indo-Pacific landscape as:

(A) Countries in the Indo- Pacific are looking to emerging technology for solutions to their fundamental survival such as food security, economic security, infrastructure development, and disaster mitigation and management.

(B) The Indo-Pacific is increasingly the theatre for US-China competitions: two countries that are innovators of cutting edge emerging AI technology and likely to influence its growth and adoption. Domestic technological aspirations of countries within the Indo-Pacific are tied to global geopolitics, whether they like it or not.

Further, this research will add to the growing body of work on grand strategy which is limited for countries within the Indo-Pacific region. Most of the literature surrounding grand strategy is ideological and primarily rooted in American history and events, and tends to focus on the path the United States should take. This is in part due to the assumption that grand strategy is a domain of "great powers", because they alone "have the institutional resources to design and implement a grand strategy".[2] Through this research we present rough blueprints for framings of grand strategy within the region, which we hope will lead to greater intellectual inquiry within the region.

Understanding Grand Strategy

The various uses of a grand strategy as put forward by experts include - whether it is relevant as an organising principle, a plan, or an attempt to understand how a country conducts its foreign policy.[3] The origins of grand strategy literature and thinking are tied to the objectives of victory in war, and security and peace in its aftermath. B.H. Liddel Hart, a famous proponent of the concept wrote, "the role of grand strategy—

higher strategy—is to co-ordinate and direct all the resources of a nation, or band of nations, toward the attainment of the political object of the war—the goal defined by fundamental policy."[4] Later, Edward Mead Earle re-defined the scope beyond military means and objectives:[5] "The highest type of strategy— sometimes called grand strategy— is that which so integrates the policies and armaments of the nation that the resort to war is either rendered unnecessary or is undertaken with the maximum chance of victory."[6] John Frederick Charles Fuller's writings underscore the importance of a grand strategy in times of peace, accounting for and including non-military instruments.[7] Barry Posen wrote, "Grand strategy is "a state's theory about how it can best 'cause' security for itself".[8] Writers including Hal Brands and Stephen Brooks and William Wohlforth, incorporated economic opportunities and military threats in the definition, and wrote of deploying a nation's resources in order to secure its goals.[9] Peter Feaver suggests that "grand strategy refers to the collection of plans and policies, that comprise the state's deliberate effort to harness political, military, diplomatic, and economic tools together to advance that state's national interest."[10]

Grand Strategy Framings in this Report

We have focused on the ends (highest national goals), ways (course of action in pursuit of national goals) and means (instruments of national power) to understand how grand strategy operates.[11] *"What factors explain a country's grand strategy? What are the goals of the country's grand strategy? What are the means of the country's grand strategy?"*[12] We have looked at country specific national priorities/ objectives on military, economic, and ideology under these broad framings, to determine a country's potential reaction to global upheavals. We have then examined approaches to the emerging AI technology within these country frameworks, to see convergences and divergences between public and private sector thinking.

Methodology

Recognising the vast and varied geopolitical landscape of the Indo-Pacific and the short duration of this research project, we have limited our focus to five countries - India, Indonesia, Republic of Korea (ROK), Japan, and Fiji. The selection of these countries was based on a number of factors including (but not limited to) institutional knowledge, countries that stood out in terms of either adoption or potential for developing further AI related technologies, and those that have historically played pivotal roles in great power competition.

Using both secondary research as well as an expert interview process we constructed grand strategy framings defining national priorities on military, economic, and ideology for each of these countries using the "ends, ways and means framework". Our secondary research included working through grand strategy literature (both general theory as well as focused on the countries chosen), white papers released by respective governments, foreign policy, military and economic documents that detailed each country's vision, as well as expert analysis on the selected countries. Within these framings, we tested for reactions to emerging technology and AI from the perspectives of the private sector, that is driving technology growth and adoption vis a vis the public sector (through the research and policy community as well as government sources where feasible), that controls government responses and policy actions to emerging technology.

To chart the differences and commonalities between the two viewpoints, we used fictional scenario-based exercises that were designed in collaboration with Forum for the Future, that specialises in the use of Participatory Futures Methodology, to help stakeholders move beyond immediate concerns and engage with uncertainty. The focus of these exercises was not prediction but expanding the space of possibility using systemic analysis and creative tools to challenge assumptions, surface signals, and co-develop narratives that inform strategic choices.

We conducted over 65 virtual interviews that were based on a fictional scenario where subsea cable interference led to large scale internet disruptions. We then used the trends coming out of these scenario interviews, along with our own secondary research, to design a day long scenario game, which was conducted in Mumbai, India. The scenario game was used to test some of our assumptions arising from the interview and research process. We developed two disruptive scenarios for the in-person exercise: one centred on an AI-driven payments failure in 2025 and another on AI infrastructure as geopolitical leverage in 2030. Both were anchored in plausible Indo-Pacific dynamics to keep discussions grounded, yet forward-looking.

During the in-person scenario play we worked with characters that acted as anchors, making visible the contrasting incentives of governance and corporate power. As one participant noted, "A CEO could absorb reputational damage, but governments couldn't afford even short-term uncertainty," highlighting tensions between national security priorities and private sector incentives. The design unfolded in phases: first, participants played as AI or geopolitics experts, applying technical expertise; then, they represented Indo-Pacific countries, negotiating trade-offs and alliances. This shift forced them to reconcile professional depth with national interests, surfacing dilemmas such as whether smaller states should prioritise sovereignty or accept deeper dependency on foreign technology. This participatory structure produced

both debate and negotiation under pressure, enabling participants to see ripple effects and systemic vulnerabilities. Insights centred on the challenges of building collaboration between private-sector technology firms and geopolitical actors, the fragility of regional coordination, and how evolving AI capabilities may redistribute influence across the Indo-Pacific.

Participants across the virtual and in person process included academics, civil servants, Chief Technology Officers (CTOs) of AI startups, and researchers looking at AI policy, from all five countries. We are deeply grateful to the community of well-wishers and supporters created through the process of this project, who invested their time and perspectives, helping us shape this report into one that is both relevant and well-rounded.

Limitations and Challenges

Language barriers during the research process has meant that we have relied on information from translated sources, and individuals who could communicate with us in English. We acknowledge the potential for inherent biases that may result from much of this research being based on materials that were available or could be translated into English.

INDIA

GRAND STRATEGY FRAMINGS

The term "grand strategy" is not commonly used in Indian security thinking, however, India has a long history of strategic thinkers - tracing back to Kautilya, and epics like the Ramayana and Mahabharata, with treatises on war conduct.[13] In contemporary India, approaches to counter national challenges can be found from various schools of thought including Nehruvian, Neoliberal, Hyperrealism, Marxism, Hindu Nationalism, and Gandhian.[14]

"India - a state standing on a geopolitical threshold, deliberately navigating ambiguity to preserve flexibility and autonomy in a global order that is not simply cleaving in two but fracturing in more complicated ways. India's foreign policy is best understood through the lens of liminality, the condition of existing between worlds rather than in a fixed role or within a bloc. India is not a classic great power, but neither is it merely a regional actor."[15]

- Ambassador Nirupama Rao for Foreign Affairs

Ideology

India's current foreign policy is a shift from non - alignment to one of issue-based multi-alignment to secure its national interests. This has been achieved through the building of economic and military partnerships and other strategic choices, including soft power tools, overseas development partnerships, and issue based alignments such as on climate change. Issue driven partnerships however give rise to dualities. For example, India continues to have robust bilateral economic engagement with China despite a hard stance on border security issues.

Post independence in 1947, the Gandhian ideas of 'Ahimsa' (non-violence) and self-reliance defined strategies[16] were reflected[17] in the Panchsheel Principles (1954)[18] crafted by then Prime Minister Jawaharlal Nehru. These principles included mutual respect and territorial integrity and sovereignty; mutual non-aggression; mutual non-interference; equality and mutual benefit; and peaceful co-existence. During the Cold War era, multiple challenges including armed conflict with China (1962) and Pakistan (1965 and 1971), prompted a strengthening of strategic relations with both the United States and Russia. The 90s brought forth Liberalisation, Privatisation and Globalisation, reforms to integrate India with the global economy. In 1992 the "Look East" policy expanded its focus to Southeast Asia, with India becoming an ASEAN sectoral dialogue partner and expanding trade and investment opportunities in the region. The early 2000s were marked by a further strengthening of global ties, and the India - US Civil Nuclear Agreement.

Since 2014, 'Su Rajya' (good governance), inclusive development, and governance has become central to India's vision - embodied in the slogan Sabka Saath, Sabka Vikas, Sabka Vishwas, Sabka Prayas (Together with All, Development for All, Trust of all, Efforts of all).[19] The goal is to achieve "Viksit Bharat" (Developed India) by 2047, through economic advancement, long-term political stability, and reforms. Prime Minister Modi has used Vasudhaiva Kutumbakam ("the world is one family"), rooted in inclusivity and sustainable living, to describe the guiding principle for India's global conduct.[20] The term Vishwamitra ("global friend") is also used by statesmen to describe evolving international partnerships.

Military

The strengthening of domestic capabilities and modernisation of the armed forces has been a significant priority. The budget allocation to the Defence Research and Development Organisation (DRDO) increased from Rs 23,263.89 crore in FY 2023-24 to Rs 23,855 crore in FY 2024-25.[21] DRDO has established the DRDO Industry Academia Centre of Excellence (DIA-CoE) at Indian Institute of Science (IISc) Bengaluru.[22] Under the Make in India initiative, domestic capabilities are being developed through platforms such as Dhanush Artillery Gun System, Advanced Towed Artillery Gun System (ATAGS), Main Battle Tank (MBT) Arjun, Light Combat Aircraft (LCA) Tejas.[23] In November 2024, the defense minister talked about the need for "adaptive defence"[24] in the face of new and emerging technologies changing the nature of security problems.

India's efforts remain to build military partnerships, and conduct joint military exercises to safeguard its national interests in the region and help counter global challenges. For example, India and Japan have had a Joint Declaration on Security Cooperation since 2008,[25] and a Joint Working Group on Defence Equipment and Technology Cooperation since 2017.[26] Ties between India and ROK were elevated to "Special Strategic Partnership" in 2015[27] and the two countries signed the Roadmap for Defence Industries Cooperation in 2020.[28] India and Indonesia also have a Defence Cooperation Agreement since 2018,[29] where ties were elevated to "Comprehensive Strategic Partnership."[30]

Economic

India's domestic and international economic policies aim to secure long-term growth, stability, and regional hegemony. The Atmanirbhar Bharat Abhiyan (Self-Reliant India Mission) of 2020[31] promotes a long-term vision of achieving economic autonomy, particularly in critical sectors like domestic manufacturing and defence manufacturing. India's Foreign Trade Policy (FTP)[32] aligns with the broader goal of increasing global trade and advancing economic growth by centering cost competitiveness and trade facilitation. There is renewed focus on emerging sectors like e-commerce as well as streamlining of the SCOMET (Special Chemicals, Organisms, Materials, Equipment, and Technologies)[33] policy to improve control over the export of sensitive dual-use technologies (used for both civilian and military purposes).[34]

Efforts to modernise physical and digital infrastructure are ongoing. The National Highway (NH) network grew by 60% - from 91,287 km in 2014 to 1,46,145 km in 2023.[35] A remarkable 87.01%[36] increase in annual cargo-handling capacity was seen at major ports from 2014–15 to 2023–24. India's internet subscriber base grew from 25.1 crore in 2014 to 95.4 crore in 2024.[37] India Stack, a Digital Public Infrastructure (DPI) initiative, has enabled seamless access to public services,[38] promoting digital governance, financial inclusion, and transparent service delivery. It has also advanced India's soft power capabilities and economic diplomacy with partners across the Global South. India has signed MoUs with Colombia,[39] Cuba,[40] and Kenya[41] on sharing open-sourced DPIs.

AI Landscape

AI in India is seen as a tool to provide specific societal solutions, and increase efficiencies. India's AI market is growing at a CAGR (Compound Annual Growth Rate) of 25-35% and is projected to reach around USD 17 billion by 2027.[42] With increasing AI integration, the risks of cybersecurity have grown in the form of financial fraud, misinformation campaigns, and use of deepfakes. This has increased efforts to bring cybersecurity safeguards to protect citizens.

Government Approach

The cabinet has approved a comprehensive national-level IndiaAI Mission with a budget outlay of Rs.10,371.92 crore.[43] A central pillar of the IndiaAI Mission is 'Safe and Trusted AI'; closely tied to the Make AI in India and Make AI work for India vision.[44] India also has a National Cyber Security Policy (2013)[45] and National Strategy for Artificial Intelligence (2018),[46] with AI regulation spread across various ministries and agencies. The Emerging Technologies Division of the Ministry of Electronics and Information Technology (MeitY) is responsible for promoting the utilisation of cutting-edge technologies. The Artificial Intelligence Task Force of the Ministry of Commerce and Industry is responsible for the creation of policy and legal frameworks for deployment of AI technologies, and providing recommendations to government, industry, and research programs.[47] The Indian Computer Emergency Response Team (CERT-In), established under the IT Act, 2000, serves as the national body for managing and mitigating cybersecurity threats. In 2024, India announced its plans to design an AI policy to promote the responsible and ethical adoption of AI across various sectors, in accordance with The United Nations Educational, Scientific and Cultural Organization's (UNESCO) Recommendation on the Ethics of Artificial Intelligence, that emphasises transparency, inclusiveness, and fairness.[48]

The government is invested in the creation of safe and ethical AI driven societal solutions. BharatGen,[49] a multimodal AI language model project, was launched by the National Quantum Mission (NQM) under the Prime Minister's Science Technology Innovation Advisory Council (PMSTIAC). Efforts to introduce AI into Indian military processes are ongoing in autonomous systems, drones, autonomous / unmanned systems and intelligent monitoring systems.[50] A military large language model (LLM) is also expected soon.[51] The Center for Generative AI, Srijan, and the YuvAI Initiative for Skilling and Capacity Building launched in collaboration with Meta in 2024, foster the development of indigenous AI applications, enhance skill development, and strengthen research capabilities.[52] CERT-In along with MeitY and SISA- a global leader in forensics driven cyber security, jointly launched the Certified Security Professional for Artificial Intelligence (CSPAI) program,[53] for security professionals to integrate AI into business applications. Data privacy and security are a key concern in the development of AI. The draft National Data Governance Framework Policy released by MeitY in 2022[54] establishes guidelines for secure, transparent, and accessible data use. In 2024, the Indian government released the AI Data Bank that centralises datasets across key sectors like healthcare, agriculture, and smart cities, while ensuring privacy and security standards are upheld.[55] Parallelly, the Digital Personal Data Protection Act 2023 upholds individuals' rights to safeguard their personal data, incorporating established principles for data protection.[56]

Private Sector Approach

The commercial growth of AI in India is in part due to ease of doing business reforms, a thriving startup ecosystem and a growing talent pool. Around 59% of enterprise - scale businesses are using AI in their businesses,[57] and 96% of Indian midmarket enterprises are choosing to prioritise generative AI,[58] as opposed to 91% globally. The AI market in India is expected to reach a compound annual growth rate of 25-35% by 2027.[59] The valuation of this sector is also expected to register a steady growth.

Examples of Industry Adoption:

1 Industries and Factories

Steady rise in the adoption of AI in production processes by companies, from 8% in 2023 to 25% in 2024.[60] AI is integrated into existing manufacturing systems to create "smart factories", where both digital and physical systems work side by side.

2 Banking and Financial Services

AI is being used to provide chatbot services and personalised banking. The Reserve Bank of India (RBI), while noting the contributions of AI, has cautioned against potential challenges, which include bias in algorithms, data privacy and systemic breakdowns.[61]

3 Agriculture

Expectations are high that the use of AI may help solve agricultural issues. Progress towards these solutions is still nascent.

4 Delivery Providers

Companies like Zomato, Blinkit, Myntra, that provide delivery services to customers, have been using AI to largely improve customer experience - through personalised recommendations, enhancing customer support and logistical details.

5 Healthcare

AI in the healthcare market is expected to reach USD 1.6 billion by 2025, supporting predictive analytics, diagnosis and patient care.[62]

6 Education

AI is being used to increase access to education, as well as increase the quality of education. It can be used to assess individual competencies and customise learning plans in order to help students better. Administrative issues are also being tackled by AI in order to increase efficiency.

INDONESIA

GRAND STRATEGY FRAMINGS

Since the days of Dutch rule and subsequent quest for independence, much of Indonesia's strategic thinking has focused on domestic goals. President Suharto in the 1960s focused on "strengthening the Indonesian economy, bolstering the relationship among Southeast Asian nations and keeping China out of the region."[63] Multilateralism was seen as a means to achieve these goals, and in 1967 along with Malaysia, Philippines, Singapore and Thailand, Indonesia was one of the founding members of Association of Southeast Asian Nations (ASEAN). The Indo-Pacific region and Asian powers fundamentally changed the nature of the 21st century world order.[64] In the 21st century Indonesia has become a global power, and an economic power - both drivers of Indonesia's strategic thought.

Ideology

The Youth Pledge of 1928,[65] taken during the Indonesian struggle for freedom against Dutch colonial rule, speaks of how the waters between the islands were a way to unify the people. The Djuanda Declaration of 1957[66] led to Indonesia claiming all waters that connected the islands constituting the Indonesian state, as well as claiming territorial sea of twelve nautical miles, as opposed to three miles, which was the accepted norm. In conjunction with the Djuanda Declaration, the doctrine of *Wawasan Nusantara* was introduced as a "principal unifying force for Indonesia" through a unification of ideology, economy, security and culture.[67] The principles of *Panchasila* - Indonesian nationalism, internationalism, democracy, social prosperity, and belief in one God - formulated by President Sukarno in 1945 and enshrined in the constitution, have guided Indonesian philosophy over the years. Indonesia's commitment to anti-colonialism, and the idea of *bebas dan aktif* (a free and active worldview) have remained the cornerstone of foreign policy.[68]

President Prabowo in his inauguration speech last year[69] defined Indonesia as a country that stands firm to its non-aligned roots, believing that "a thousand friends are too few, one enemy is too many". Indonesia has reaffirmed its cooperation with China,[70] Russia,[71] and the United States, choosing to align with its strategic and geoeconomic interests, and the need for a more proactive role on the global landscape. On the regional front it has organised the Bandung Conference in 1955, contributed to the Non-Aligned Movement, and is a founding member of the ASEAN.

The Indonesian struggle to gain Papua from the Dutch (1950 to 1967) threw the country into debt.[72] Economic interest was therefore a key priority[73] when General Suharto took charge in 1967. In 2019,[74] President Joko Widodo launched the 'Indonesia Emas' (Golden Indonesia) 2045 Vision, of making Indonesia a sovereign, advanced and sustainable maritime state[75] and one of the world's five economic powers, by 2045.[76] The National Long-Term Development Plan/Rencana Pembangunan Jangka Panjang Nasional (RPJPN)[77] 2025- 2045, by the Ministry of National Development Planning/Bappenas, to support the 2045 Vision, places greater emphasis on economic development and global influence, in contrast to the previous long-term development plan (2005–2025) which focused more on restoring and strengthening Indonesian democracy.

Military

Indonesia's security threats are dictated by its location, between two oceans and two countries, as well as a rise in non-traditional issues from climate change, drug trafficking, and digital threats. The Global Maritime Fulcrum concept was introduced in 2014,[78] aimed at building a sovereign, developed and independent maritime state, furthering the maritime vision and making a positive contribution to regional and world security. The National Defense Implementation Policy (2020-2024), released in 2021,[79] mentions the changing nature of warfare. The development of AI in the weapons ecosystem, including electromagnetic weapons, directed energy weapons, high-speed projectiles, and hypersonic missiles is noted as a concern that requires constant vigilance.

In 2005, the government introduced the Minimum Essential Force (MEF, or Kekuatan Pokok Minimum), to modernise the defense system. The Committee of Defense Industries (KKIP)[80] established in 2010, is tasked with coordinating national policies including planning, formulating, implementing, controlling, synchronising, and evaluating defense industries. Indonesia has faced arms embargoes in the past, imposed by several countries which include the United States,[81] and the EU. This has led to a focus on developing the domestic defense industry, and defense acquisitions based on Law Number 16 of 2012 on Defense Industry.[82] To achieve self-sufficiency in the defense sector and increase competitiveness of its products in the global market, the Indonesian government launched Defend ID in 2002,[83] a state-owned defense industry holding. Indonesia's growing defense sector has over 210 specialised companies.[84]

Economic

Indonesia is advantageously located at the intersection of two continents (Asia and Australia), two oceans (the Pacific and the Indian Ocean) and key global trade routes. In 2023, it was the 16th largest economy in the world[85] with a GDP of IDR 20,892.4 trillion.[86] As one of the worst affected countries[87] in the 1997 Asian financial crisis,[88] restructuring to stabilise the economy has been a long term priority. These reforms bolstered Indonesia's resilience during the 2008 crisis. The 2018 Making Indonesia 4.0 Initiative[89] launched by the Ministry of Industry aims at reviving and modernising the country's manufacturing sector by leveraging technologies like Internet of Things (IoT) and robotics. Indonesia aims to transition from a raw material exporter[90] to developing processing industries based on raw materials, such as the semiconductor industry.[91] In 2024, Indonesia attracted USD 55.33 billion[92] in foreign direct investments, partly driven by the growth of the basic metals industry.[93] This surge is attributed to the country's strategic ban on nickel ore exports in 2020 to develop its nickel processing industry. The country is building an integrated EV supply chain and aims to be a top-three EV battery producer by 2027.[94]

The Ministry of Communication and Informatics launched the Indonesia Digital Vision (VID) 2045[95] to support the Indonesia Emas 2045 Vision to become a developed, prosperous, and globally competitive nation by 2045. The Digital Indonesia Roadmap 2024,[96] launched by the Communication and Informatics Ministry in 2021, aims for digitisation across the administration, infrastructure and community sectors. Indonesia's digital economy is projected to exceed USD 130 billion by 2025.[97] Internet

penetration rate was at 79.5% in 2024.[98] Skill development programs are being introduced, as around 52% of the population is expected to be in the productive age between 2030-2035.[99] The 2020 Kartu Prakerja program for example, helps develop workforce capabilities, boost entrepreneurship and improve employment rates among marginalised populations with no formal education.[100]

Indonesia leverages its Free Trade Agreements (FTAs) to enhance economic resilience, attract foreign investment, and align with its ambitious goal of becoming a major global player by 2045. Presently, Indonesia has nineteen[101] bilateral and regional FTAs and Comprehensive Economic Partnership Agreements (CEPAs) in place with partners like ASEAN,[102] Japan,[103] ROK,[104] and Australia.[105] The Indonesian Ministry of Trade (Kemendag) is expanding its trade network through four international trade agreements in 2025, including the Indonesia-European Union Comprehensive Economic Partnership Agreement (IEU-CEPA),[106] Indonesia-Canada CEPA,[107] Indonesia-Peru CEPA,[108] and Indonesia-Eurasian Economic Union Free Trade Agreement (Indonesia-EAEU FTA).[109]

AI Landscape

Over the past few years, cross-sector collaboration between innovators, researchers, investors, and government officials, has helped innovation and adoption of emerging technologies by the government as well as the private sector.[110] In 2024, the Bank of Indonesia launched the Indonesia Payment System Blueprint 2025–2030[111] to create a secure and interoperable digital financial ecosystem, which can indirectly facilitate AI innovations in the financial sector. Indonesia's AI adoption is significantly driven by the country's growing youth population. According to the Microsoft and LinkedIn Work Trend Index 2024,[112] 92% of knowledge workers in Indonesia use generative AI, and employers look at hiring people with prior knowledge of AI systems. In 2025, Indonesia's Deputy Minister of Communication and Digital Affairs predicted that AI will contribute USD 366 billion to the country's GDP by 2030.[113]

Government Approach

The National Strategy for Artificial Intelligence (Stranas KA) 2020-2045, serves as a road map for AI development over the next 25 years, and integration across sectors of health services, bureaucratic reform, education and research, food security, and mobility.[114] The strategy also outlines four areas of focus: ethics and policy, talent development, infrastructure and data, and industrial research and innovation. As a part of the strategy, Indonesia launched its first AI Innovation Center, Pusat Inovasi Kecerdasan Artifisial (PIKA)[115] in 2021, to further facilitate cooperation between the government, industry, community and academia. Several programmes have been launched to integrate youth development into its AI development landscape, including the Talenta AI Indonesia Program for AI skills training with Microsoft,[116] and the United Nations Development Programme (UNDP) Skill Our Future Program for digital literacy.[117]

In 2023, the government of Indonesia introduced two sets of ethical guidelines for artificial intelligence usage. The AI Ethical Guidelines,[118] issued by the Ministry of Communication and Informatics, guide businesses in implementing AI ethics policies. The Ethical Guidelines on Responsible and Trustworthy AI in the Financial

Technology Industry, released by the Financial Services Authority (OJK), provides a code of conduct for fintech in Indonesia.[119] The 2022 Information and Electronic Transactions Law and the Personal Data Protection (PDP) Law, are amongst the binding regulations put forth by the government, owing to Indonesia's growing digital economy.[120]

Private Sector Approach

AI has the potential to add USD 366 billion to Indonesia's GDP by 2030,[121] the highest in Southeast Asia.[122] Top sectors in Indonesia driving AI search interest are marketing, gaming and education.[123] In 2024, the digital economy was valued at USD 90 billion.[124] Digital penetration in Indonesia reached 79% in 2024,[125] reflecting a population that is quick and eager to adopt digital platforms. Indonesia is also inviting significant investment from companies such as Nvidia and Indosat, who announced a USD 200 billion investment in 2024,[126] towards building an AI center in Solo, Central Java. Microsoft also announced a USD 1.27 billion investment in 2024[127] towards building new cloud and AI infrastructure in Indonesia, as well as AI skilling opportunities for 840,000 people. In November 2024, Indosat and GoTo Gojek Tokopedia announced the development of Sahabat-AI,[128] a large language model (LLM) in Indonesian languages, which would enable users to build AI-based services in Bahasa Indonesia. It is supported by AI Singapore and Tech Mahindra. Feedloop's AI platform helps analyse unstructured data, and automates essential tasks.[129] Feedloop's FL1 AI large language model is one of the first Indonesian language LLMs.[130] In 2024, Microsoft and Plan Indonesia also launched the AI Teach for Indonesia program, a capacity building program aimed at developing the vocational educational landscape in Indonesia.[131]

Examples of Industry Adoption:

1 Healthcare

Nexmedis offers an AI platform that provides different diagnoses, optimises operations according to organisational need, and is also developing a tool for transcribing doctor-patient conversations.[132]

2 Financial Sector

AI is being integrated to increase efficiency and enhance customer experience. For example, DANA, a digital payments company, utilises AI solutions to help their engineers in their daily tasks, which range from spam detection to helping customers with financial products. Amar Bank's Tunaiku helps with quick loan assessments and disbursals.[133]

3 Gaming

Indonesia accounts for 43%[134] of the gaming market in the Southeast Asian region. The industry is utilising AI to improve their graphics, game offerings, as well as programming.

4 Education

AI is being utilised to handle teacher shortages and provide customised learning plans and real-time feedback for children in Indonesia.[135] Ruangguru and Sekolah.mu are examples of companies working in this sphere.

5 Industry

Logistics companies like Waresix are using AI to streamline logistics processes, including optimising pricing and delivery routes. McEasy[136] utilises AI in its Vehicle Smart Management System for fleet management and monitoring purposes. Mekari's AI tools help companies with their business digitalisation goals.[137]

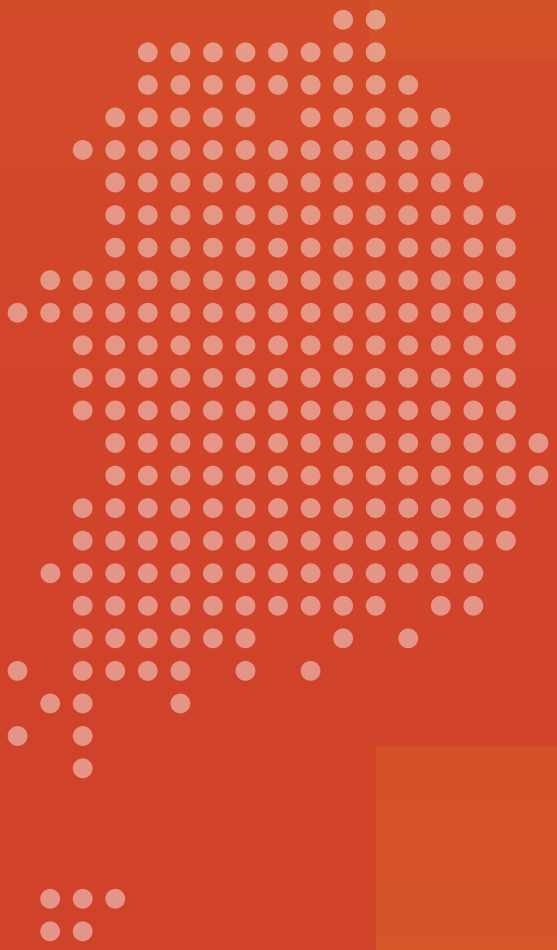
6 Retail

Tokopedia, an e-commerce platform, analyses user data for the creation of personalised algorithms, to boost customer satisfaction.[138] Blibli has been using AI to improve customer engagement through a variety of means, ranging from customer return processes to optimising logistics processes.[139]

7 Software

BI Solusi[140] is a data analytics and AI services company in Indonesia providing AI solutions for businesses and organisations. Botika Online[141] is a company helping companies with AI chatbots and AI products for business development. Eureka AI uses data analysis to provide market analysis and insights for targeted advertising.[142]

REPUBLIC OF KOREA (ROK)



GRAND STRATEGY FRAMINGS

Since the founding of the Republic of Korea (ROK) in 1948, several goals have remained constant such as peace on the Korean Peninsula, establishing deterrence against North Korea, staying true to democratic foundations and ensuring economic competitiveness.[143] In the 1980s and 1990s, ROK set long-term goals and objectives to establish its place as a middle power in the global order.[144] Faced with a fast-evolving security landscape, and the threat of conflict in East Asia and other conflicts around the world, ROK has attempted to increase its geopolitical engagements with the rest of the world.

Ideology

The location of the Korean peninsula has been of geopolitical importance throughout history- its proximity to China, Japan, and Russia made it a critical partner for trade and military strategy. Historically, the Chinese Tributary System[145] established diplomacy and cultural ties that allowed Korea its independence while maintaining peace with China. However, the signing of the Treaty of Shimonoseki[146] in 1895 between China and Japan officially ended the tributary status of Korea, creating space for other competing powers. In 1910, Japan formally annexed the erstwhile Korean empire. The years of exploitation that followed, sharpened resistance against Japan.[147] The surrender of Japan in 1945 ended years of Japanese occupation in the peninsula. In 1945, following the Potsdam Conference, the Korean peninsula was divided along the 38th parallel, and American and Soviet forces were deployed to the southern and northern sides respectively, as a temporary solution to fill the governance vacuum. Ideological differences however, hardened as the cold war intensified. Elections were held in May 1948 in the South under UN supervision and the Republic of Korea was formally established on 15th August, 1948. The Northern side, however, saw the establishment of a communist dictatorship. In 1950, the Korean peninsula saw more violence, with the North launching an armed attack on the South, supported by the Soviet Union. Hostilities ended with the signing of an armistice agreement in 1953. The threat of North Korea continues to loom large in ROK's grand strategy, alongside its ambition for autonomy, independent economic growth and development.

Democratic values[148] and the strengthening of its democratic system have been a key focus for leaders of ROK over the years, particularly given its years of occupation and subsequent military rule. According to the Ministry of Foreign Affairs, guaranteeing lasting peace in the entire region is identified as a key diplomatic task, which can be established through robust relations with Japan, China and Russia, and centering its alliance with the United States of America. In 2022, ROK released its Indo-Pacific strategy[149] that spells out its aspirations for the region, including positioning itself as a "Global Pivotal State". ROK's increasing influence around the world and its intent to create an open and international economic environment, from industries to manufacturing to soft power instruments like K-Pop, has gradually increased its geopolitical engagement with the world.[150] It transitioned from being one of the world's poorest countries and aid recipients, to becoming a member of the OECD's Development Assistance Committee (DAC) in 2020,[151] along with an active strategy for development assistance.

Military

ROK strengthens its military capacities while forging strategic alliances to maintain regional stability and deter potential conflicts.[152] The ROK-U.S. Alliance through the 1953 ROK-U.S. Mutual Defense Treaty is a central pillar[153] of ROK's national security, and the 2023 Defense Vision of the U.S.-ROK Alliance[154] is a means for the United States to increase its contributions in the Indo-Pacific. Three National Security Strategies - 2009, 2014[155] and 2018[156] - identified the Democratic People's Republic of Korea (DPRK) as the top security priority. However, 2010 expanded this scope with the introduction of the "Global Korea" vision,[157] to promote peace and shared prosperity through an active and open foreign policy, looking beyond the Korean peninsula. ROK embraced its role as a global security provider through the 2022 Indo-Pacific Strategy[158] and Global Pivotal State vision,[159] and joint military exercises with its allies, to strengthen its regional cooperation.

ROK's defense strategies and thinking have evolved to adapt to changing security environments. The first major Defense Reform 2020 (DR 2020)[160] launched by President Roh Moo-hyun in 2005, aimed to strengthen military capabilities in response to growing challenges posed by regional actors, and also accounted for ROK's declining birth rate and reduced forces by 2020.[161] Defense Innovation 4.0[162] launched under the 2023 National Security Strategy (NSS), seeks to transform the forces into a manned-unmanned complex combat system[163] incorporating artificial intelligence and technology. The Defense AI Center established in 2024,[164] fosters collaboration between the academia , industry and research institutes to adapt civilian AI tech for military use. A central pursuit is 'on-device AI'[165] which facilitates the use of AI on a mobile device without server or cloud connectivity. This technology is crucial for both manned-unmanned combat systems, in battlefield scenarios where network availability is unreliable.

Self-reliance is a major facet of ROK's military grand strategy. In 2024, ROK launched a flagship strategy to curb the military's reliance on foreign semiconductors by 2030,[166] and integrate private companies into defence manufacturing. ROK is also developing indigenous Korea Air and Missile Defense (KAMD)[167] systems and Long-range Surface-to-Air Missile (L-SAM) systems.[168] ROK's defence exports increased from USD 2-3 billion range in the late 2010s, to USD 14 billion in 2023.[169] Russia's invasion of Ukraine greatly propelled ROK's defence exports to European countries, and in 2022, European nations signed defense contracts worth USD 8.4 billion.[170] India and Indonesia[171] are amongst the top recipients of ROK arms in the Indo-Pacific region. The Foreign Trade Act[172] ensures that defense exports are used for peaceful purposes. The government has also provided 400 billion Korean won[173] to develop advanced defense products, and 39 billion Korean won[174] to boost defence R&D in AI , unmanned and manned systems , semiconductors and robots.

Economic

ROK has an export driven economy, and the third-largest semiconductor manufacturing capacity worldwide. Manufacturing accounts for almost 25%[175] of ROK's GDP, where digital innovation is a significant priority. ROK's FTA Roadmap 2003 and updated Trade Policy Roadmap 2024[176] aim at expanding the FTA network to cover 90% of the globe, and pursue Economic Partnership Agreements (EPAs)[177] with countries in Asia, Africa and the Middle East. As of December 2024, ROK has twenty-two FTAs with fifty-nine countries.[178] The 2022 Free, Peaceful, and Prosperous Indo-Pacific Strategy[179] includes the building of resilient supply chains and the promotion of free trade for a peaceful and stable Indo-Pacific. In 2024, FDI

reached an all-time high of USD 34.6 billion.[180] The government is to build the largest semiconductor cluster in the world, in Yongin.[181] In July 2024, ROK's Ministry of Trade, Industry, and Energy, organised the AI Autonomous Manufacturing Alliance,[182] which brought together industry and academia to discuss the integration of AI in the manufacturing sector. In 2024, the Presidential Advisory Council on Science and Technology finalised a strategy[183] towards developments in next-generation nuclear power, aerospace and ocean engineering, next-generation communication, advanced robotics, and cybersecurity by 2030.

One of the key challenges to the ROK economy has been identified as the low birth rate, at 0.71 in 2024.[184] The change in the ratio of working people to aged dependents is expected to shift drastically in the coming years, with subsequent effects on national policy, including taxation, spending, education, elderly care, etc. Technology is therefore seen as a priority to bridge potential gaps. Around 99.6%[185] of the population has access to the internet, and most government services are envisioned to be available on a single online platform. The 2025 budget proposal raised R&D allocation to 29.7 trillion won with a focus on AI,[186] advanced biotech and quantum computing, and twelve other strategic technologies. A digital strategy, announced in 2022,[187] focuses on R&D across AI, AI semiconductors, 5G and 6G communication, quantum computing, metaverse, and cyber security. The K-Network 2030 Strategy, announced in 2023,[188] increases cross-sector innovation to build world-class 6G infrastructure.

AI Landscape

The government's declaration of the year 1983 as "the Year of Information Industry" provided a boost for expansion of communication networks and development of technologies. In 1985, the AI Research Institute was launched where researchers first tackled the problem of processing the language Hangul digitally.[189] With the support of the Ministry of Science and Technology, the next few years saw extensive research on neural networks, algorithms, and natural language processing. The Korean Cognitive Robot Center was launched in 2005, and the Electronics and Telecommunications Research Institute (ETRI) supercomputer was launched in 2011. ROK was one of the first countries to develop a national AI strategy with a strong focus on human resource development, and funding for research.[190] AI was identified as a crucial driver towards the country's digital and economic growth, and the government remains committed to establishing ROK as one of the world's top three AI powers.[191]

Government Approach

The Republic of Korea's 2019 National AI Strategy[192] aims to harness AI to increase quality of life, match global competitive standards and contribute to economic growth by 2030. The Digital New Deal, launched in July 2020,[193] looked at integration of artificial intelligence into all sectors of industry, and improving data infrastructure. A data dam[194] was proposed to harness and collect data for AI training. The Open Data Portal[195] provides a repository of public data sourced from different ministries, for public use. In December 2020, a Presidential Committee on the Fourth Industrial Revolution released the National Guidelines for AI Ethics[196] for the safe and efficient use of artificial intelligence to benefit society and ensure human dignity is upheld. In

2022, a definitive digital roadmap was announced, under which investment in R&D was identified for six major digital technologies: AI, AI semiconductors, 5G and 6G communication, quantum, metaverse, and cyber security.[197]

In 2023,ROK released the Charter on the Values and Principles for a Digital Shared Prosperity Society, or the Digital Bill of Rights,[198] to ensure all of society benefits from increasing digital innovation. In 2024, the High-Level Consultative Council on Artificial Intelligence Strategy was formed,[199] to review generative AI, its effects and safe use, use alongside innovation efforts that can contribute to national growth. The 2024 National AI Strategy Policy Directions[200] contain ROK's vision of becoming a "Global Pivotal State" by leveraging its AI capabilities. Plans include establishing a National AI Computing Center, expanding Graphics Processing Units (GPU) to fifteen times the current size, and supporting the commercialisation of domestically produced AI chips; promoting public private partnerships; achieving a 70% AI adoption rate in industry and 95% in the public sector by 2030; leading global AI governance by securing AI safety and security capabilities ahead of demand. AI is classified as a strategic technology under tax law, leading to tax incentives for more investment. The National AI Research Hub was inaugurated in November 2024, envisioned as a center for world-class AI research.[201]

ROK is amongst the few countries in the world with legislation geared towards AI. On December 26, 2024, the National Assembly passed the Basic Act on the Development of Artificial Intelligence and the Establishment of Foundation for Trustworthiness[202] slated to come into effect in January 2026. The act consolidates nineteen existing AI-related regulations, along with establishing world-class infrastructure for full-scale industrial growth. ROK was one of the founding members of the Global Partnership on AI (GPAI),[203] launched in 2020, to discuss AI best practices, and is also a part of OECD's Working Party on Artificial Intelligence Governance that analyses AI policies and technologies.[204]

Private Sector Approach

The ROK AI market was projected to reach USD 4.34 billion in 2025.[205] A primary factor that motivates AI development in the private sector are the government strategies that boost the application of AI into various industries. In 2024, a support programme for AI start-ups and semiconductor sectors was launched by the Ministry of SMEs and Startups (MSS) as a part of its 2025 budget plan.[206]

Examples of Industry Adoption:

1 Banking and Financial Services

AI is used for customer support, credit rating and loan screening, investment and portfolio management tasks, and now also for financial fraud screening. Banks like KB Kookmin Bank[207] and Shinhan Bank,[208] in addition to AI-driven chatbots and virtual assistants, have also introduced generative AI bank tellers across branches in 2024. In 2023, Shinhan Bank[209] introduced a sentiment analysis system to analyse the emotional states of customers in real time, to detect financial fraud. In 2023, Toss Bank employed an AI detection system

to identify fraudulent activities during account openings, which flagged over 600 instances of fake IDs over a six-month period.[210]

2 Healthcare

AI is used for automating administrative tasks, analysing medical images and assisting doctors in early disease detection. Companies such as Deep Bio[211] and Lunit,[212] for example, use AI to aid in cancer screening. Given the challenge of ROK's aging population, leading companies such as Samsung, LG, Naver, and Kakao are investing in tele-medicine and AI-driven healthcare solutions to help senior citizens.

3 Automotive Industry

The ROK's automotive artificial intelligence market generated a revenue of USD 179.8 million in 2024[213] and is expected to reach USD 818.8 million by 2030. AI is utilised for Advanced Driver Assistance Systems (ADAS), predictive maintenance, and intelligent route planning.

4 Entertainment Industry

AI is being used for content creation, recommendation systems and interactive experiences. The country has witnessed a surge of virtual K-pop groups and influencers since 2020.[214]

5 E-commerce and Retail

Retail AI is utilised to identify customer preferences, optimise product recommendations and expedite delivery. Naver (Korea's largest internet portal) and Coupang (e-commerce platform),[215] use AI to offer hyper personalised marketing strategies to customers. The system also predicts future demand to forward deploy inventory.

6 Factories and Industry

AI is used to evaluate the performance of production lines and optimise production time. Companies like LG and Samsung are incorporating AI into their production lines for predictive maintenance, quality control, and process optimisation. Digital twins of their factory environments are being developed in a bid to optimise manufacturing precision, streamline operations, and reduce production costs.

JAPAN

GRAND STRATEGY FRAMINGS

Japan's grand strategy has been shaped by the voices of its strong leaders. As Michael J. Green writes, "nation-states deploy new grand strategies when structural changes in the balance of power coincide with the emergence of strong-willed leaders who seize that moment to shape rather than be shaped by the new environment."[216] Japanese postwar strategy, dubbed by experts as the Yoshida doctrine (though no official declaration exists) centred around three core themes, 1) focusing all available means on economic recovery and development, 2) dependence on military alliance with the United States for basic security, and 3) rearmament for self- defense purposes to supplement the alliance to the extent prescribed by antimilitarism.[217] The Abe doctrine marked a new phase in Japan's strategic thinking, as a result of the circumstances of the time. Japan is seen to exercise more leadership at both regional and global levels, and working towards countering China's influence, and there is an upgrading of Japan's Self-Defense Forces with a move "to participate in collective-self defence forms of security cooperation".[218]

Ideology

Japan's foreign policy decisions post 1952, known popularly as the Yoshida doctrine, were pacifist and focused on economic recovery. Article 9 of the constitution of Japan proclaims that the country "forever renounces as a sovereign right of the nation and the threat or use of force as means of settling international disputes".[219] Global developments and geopolitical shifts within the Indo-Pacific region have resulted in adjustments to Japan's pacifist approach. In 2014, Japan's cabinet adopted a resolution[220] that enabled a reinterpretation of Article 9 and allowed an expansion of the scope of the Self-Defense Force (SDF)'s activities for the use of collective self-defense in situations where it may be required. The resolution called to increase Japan's own military capability and strengthen the Japan - United States Alliance for maintaining peace and security in the region. In 2022, in a speech at the IISS Shangri-la Dialogue, then Prime Minister Kishida Fumio articulated intentions of the co-existence of peace-loving principles alongside the realist[221] approach to diplomacy, with strict adherence to pragmatism. A key contributor to the long-term strategic outlook was the nation's large-scale foresight studies, initiated in 1971,[222] which anticipated challenges and opportunities thirty years into the future, such as shifting regional security dynamics and climate change, and technological advancements. The National Security Strategy formulated in 2022[223] for example, recognises the importance of a global order based on the rule of law, and traditional and non - traditional threats that are changing world order.

Japan's partnership with the United States is a cornerstone of its post war strategic alliances. However, in recent years it has also focused on its multilateral relationships with other like-minded partners. In 2023,[224] Prime Minister Kishida revised Japan's Free and Open Indo-Pacific (FOIP) Strategy (originally launched by Prime Minister Shinzo Abe in 2016) to include new challenges, relating to the environment, climate change, global health and emerging technologies, as well as to recognise the common goal to defend peace. Japan's Development Coordination Charter, amended[225] in 2023, ensures that development finance helps countries achieve cohesive and sustainable growth. The objectives of the Charter are to help developing countries while creating a "favourable international environment" for Japan and realising its national security objectives. These policies are accompanied by a shift in Japan's policies towards defense

acquisitions, imports, and the transfer of defense technology because of regional tensions, countering China's influence and trying to preemptively prepare for any aggressions. Alongside strategic partnerships and enhancing bilateral partnerships, Japan has also placed emphasis on expanding its cultural influence globally.

Military

Japan believes diplomacy is to be the first line of action in the face of aggression.[226] Post World War II, through Article 9 of the constitution, all forces maintained by Japan were to be for the purpose of self-defense. There was extensive reliance on the United States to deter any armed attack: the U.S.-Japan Security Treaty (1951),[227] under a provisional arrangement, allowed US troops to remain in the region, and the Treaty of Mutual Cooperation and Security (1960),[228] established mutual defense responsibilities. The Basic Policy on National Defense, adopted in 1957,[229] focused on defense capabilities "within the limits of self-defense". Japan's first ever security strategy in 2013[230] followed by a cabinet resolution in 2014,[231] allowed for "collective self defense", to defend an ally that has come under armed attack which may have implications for Japan's survival. In 2016,[232] the Legislation for Peace and Security expanded the scope of military response by Japan, to provide necessary logistics support and search and rescue to armed forces of foreign countries, and collectively address any situation with potential to threaten international peace and security as determined under U.N. Resolution.

In 2022, military policy in Japan saw a major overhaul in response to the changing world order-Russian aggression in Ukraine, naval incidents, and threats from emerging technology, climate change, etc. The updated National Security Strategy (NSS),[233] National Defense Strategy (NDS),[234] and the Defense Buildup Program,[235] emphasised strengthening Japan's defense capabilities[236] in: (i) stand-off defense capabilities, (ii) integrated air and missile defense capabilities, (iii) unmanned defense capabilities, (iv) cross-domain operation capabilities, (v) command and control / intelligence-related functions, (vi) mobile deployment capabilities / civil protection and (vii) sustainability and resiliency. Defense budgets in Japan have been steadily increasing and were at 6.8 trillion yen in 2023[237] (an increase of 1.3 trillion yen from the year before), and going up to 7.9 trillion yen in 2024.[238] There is an upgrading of Japan's Self-Defense Forces with a move "to participate in collective-self defence forms of security cooperation".[239] The Self Defence Forces conduct routine exercises with the United States Navy, United States Army and the Marine Corps in the East China Sea; drills in the Indo-Pacific with India, Philippines, Australia; and goodwill exercises with Seychelles, Singapore, Palau, and Micronesia.

Defence exports in Japan that have been governed by the Three Principles on Arms Exports,[240] originally adopted in 1967, have been updated in 2014,[241] and 2023. Defense equipment manufactured in Japan under license from foreign defense firms, can now be exported to the licensing country and from there to third countries, as well as directly to countries that are victims of illegal aggression, under the categories of rescue, transport, warning, surveillance, minesweeping, and non-lethal weapons.

Economic

Japan's economic vision has undergone significant transformations over the decades. Post-war Japan (1940 to 1980) evolved from wartime mobilisation and post-war reconstruction, to a period of rapid economic growth.[242] In the 1980s, the concept of comprehensive security *(sogo anzen hosho)*[243] emerged, followed by a report introduced by the Masayoshi Ohira government,[244] which acknowledged the importance of areas such as economic, food and energy security, alongside security objectives. However, a speculative boom in the late 1980s[245] created an unsustainable asset bubble and ushered Japan's 'Lost Decades' in the 1990s - a prolonged period of economic stagnation marked by a sharp decline in real estate values.[246] Japan's vision[247] for long-term economic resilience and innovation emerged during the Lost Decades. In 2012, Prime Minister Abe launched aggressive monetary and fiscal policies alongside structural reforms popularly referred to as Abenomics,[248] to restore Japan's global competitiveness. The 2022 Grand Design and Action Plan for a New Form of Capitalism addresses social issues like wage stagnation and climate change while achieving economic growth through new private-public cooperation.[249] The Ministry of Economy, Trade and Industry (METI) also launched the Generative AI Accelerator Challenge (GENIAC)[250] to enhance the country's AI capabilities. Japan is today the fourth[251] largest economy in the world with a GDP of USD 4.22 trillion in 2023.[252]

Prime Minister Abe in 2016,[253] first spoke about a Free and Open Indo-Pacific to foster regional stability and prosperity by improving connectivity between Asia and Africa. In 2021,[254] Japan promoted economic diplomacy[255] as a strategic priority through various economic agreements, supporting the expansion of businesses by Japanese companies and advancing resource diplomacy, along with tourism to Japan. In 2023, Japan launched the Free and Open Indo-Pacific[256] Programme. As part of the Basic Policy on Economic and Fiscal Management and Reform of 2023, to meet the target of achieving a balance of 100 trillion yen in foreign direct investment by 2030,[257] the Ministry of Foreign Affairs (MOFA) established hundred and twenty-six diplomatic contact points globally, in collaboration with the Japan External Trade Organization (JETRO). These missions gathered intelligence on investment trends, improved regulatory frameworks, and actively engaged with foreign business communities.[258]

As global supply chains face disruptions and economic competition intensifies, Japan has prioritised economic security as a core pillar of its national strategy through the 2022[259] Economic Security Promotion Act. The Act promotes the R&D of Specific Critical Technologies (SCTs)[260] through measures including funding, public private cooperation councils and involving research institutes. Japan's R&D expenditure in FY 2022 was 20.70 trillion yen,[261] with a 56.3% increase in AI funding to 272.5 billion yen compared to the previous year. The Ministry of Economy, Trade and Industry installed a new Trade and Economic Security Bureau in June 2024 to further these aims[262] identified in the Act. At the regional level, Japan is signatory to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (TPP11) and the Regional Comprehensive Economic Partnership (RCEP).

AI Landscape

In 1970, a research team at Kyoto University[263] that was looking at artificial intelligence in media information processing, developed the world's first face recognition system. Kunihiko Fukushima's multilayer convolutional neural network[264] proposed in 1979 became foundational to deep learning. In the 1980s, the country's AI efforts were directed to develop systems that are able to mimic human decision making. The Ministry of International Trade and Industry (MITI) invested USD 446 million[265] in the Fifth Generation Computer project to create AI-powered machines for language translation, image interpretation, and reasoning. While this project did not find success, it spurred further research and development of hardware and robotics that led to a surge in the development of AI powered robotics and humanoid robots like Pepper and ASIMO[266] in the early 2000s. Japan's declining work force and labour shortages have made automation a key focus, where the integration of artificial intelligence holds great promise. The 2016 Society 5.0 Vision,[267] developed under the Fifth Science and Technology Basic Plan envisions a sustainable human-centric society that utilises AI, Internet of Things (IoT), robotics and other advanced technologies to create unprecedented value to human beings. A series of principles guide AI development to actualise Society 5.0, and create an 'AI ready society': the Social Principles of Human-Centric AI (2019)[268] for example, use AI as a tool to create a sustainable society that nurtures human abilities and advance technological developments in terms of human potential, social systems, industrial structures, innovation systems, and governance.

Government Approach

Japan's demographic challenges - its aging population and declining birth rates- drive AI integration in healthcare and workforce automation. In 2017, the Society 5.0 Vision and the AI Technology Strategy[269] provided an industrial road map with a focus on productivity, health, medical care, and long-term care, mobility, and information security. The AI Strategy[270] launched in 2019, grounded in the Social Principles of Human Centric AI,[271] forms the basis for AI implementation by the Ministry of Internal Affairs and Communications (MIC) and the Ministry of Economy, Trade and Industry (METI). In light of the COVID pandemic, AI for National Resilience and AI for Planetary Resilience[272] were added to the AI Strategy in 2022.[273] The AI Strategy 2022 prioritises ethical AI governance, AI driven innovation and workforce development, and acknowledges the importance of the private sector[274] in the domestic development of AI. The 2024 Integrated Innovation Strategy,[275] a broader national policy framework encompassing multiple emerging technologies, also highlighted AI and robotics as key measures to address these workforce challenges. Future plans include development of human symbiotic AI and development of next-generation computing devices capable of processing real time information akin to the human brain, by 2050.[276]

Japan regulates AI through sector specific and voluntary guidelines instead of blanket bans, to foster innovation and investment. However, the country is also aware of the pitfalls of AI and in 2024 Japan had proposed to adopt domestic restrictions on generative AI in line with the global regulatory trends. Its 2024, AI in Defence Strategy[277] emphasised the necessity of human oversight in military AI integration to ensure ethical usage. Japan has led international AI governance efforts. During its G7 presidency in 2023, it launched the Hiroshima AI Process[278] to establish

pioneering global AI governance rules. In 2024, Japan launched its first AI Safety Institute[279] and was one of the eleven signatories[280] to establish an international network of government-backed research institutions focused on AI safety science.[281] The Strategic Council for AI Technologies[282] fosters collaboration among industry, academia, and government stakeholders on AI research and development (R&D). In 2024, the government announced its intent to invest USD 65 billion by 2030 to boost the domestic semiconductor chip and AI industry.[283] AI and data science are also integrated into undergraduate curriculums.[284]

Private Sector Approach

The AI industry in Japan is expected to reach USD 27 billion[285] by 2032, and is estimated to grow at a CAGR of 21.4% from 2022 to 2032.[286] The generative AI market was projected to reach USD 1.3 billion in 2024,[287] and has seen rapid integration into services and industries. AI integration that began with robotics has lately made inroads into other sectors, such as healthcare and transportation.

Examples of Industry Adoption:

1 Robotics

AI has been rapidly integrated into the robotics sector to increase efficiency. SoftBank Robotics, for example, launched the Scrubber 50 in 2022,[288] a cleaning robot powered by AI.

2 Transportation/ Automotives

AI is used in autonomous driving systems. In developing self - driving systems, companies such as Turing[289] are looking to utilise AI to move beyond traditional reliance on learning models.

3 Healthcare

AI-driven healthcare solutions are being used to aid early diagnosis, curate personalised treatments plans, and streamline pharmaceutical processes. Mitsui's[290] collaboration with Nvidia on Tokyo-1, for example, generates high-resolution molecular dynamics simulations and generative AI models for drug discovery. Ubie,[291] focuses on multiple aspects of healthcare, including generating diagnosis, enhancing patient experience with the healthcare provider, and pharma marketing.

4 Manufacturing

AI integration in manufacturing is being driven by Japan's aging population and declining work force. Arumcode,[292] for example, provides full automation solutions for metalworking industries. Yaskawa and Toyota,[293] have also been integrating AI in developing robotic solutions in manufacturing.

5 Software

NEC,[294] and Abeja,[295] provide a wide number of platforms for AI-backed data analysis. Autify's[296] products use AI to help software engineers accelerate the software development lifecycle.

6 Agriculture

AI integration is seen in sustainable farming practices and crop management solutions, helping farmers rework their farming strategies, in order to maximise yields. AI-powered systems are helping in early detection of diseases, optimising plantation schedules through data analysis and addressing labour shortages. Farming robots have also been proposed for the same.[297]

7 Energy

Companies are utilising AI to meet decarbonisation targets and effectively use infrastructure. i-Grid,[298] for example, launched the REAL Energy Platform that combines AI and IoT to connect solar panels, storage batteries, and EVs across one power management platform to predict and manage power demands. Sensyn Robotics,[299] integrates AI into existing business applications and uses robotics and drones to monitor power grid transmissions and perform inspections on existing solar panels.

8 Fintech/ Banking

Traditional banks have been partnering with companies that use AI to modernise their operations. Monkeytree is an example of an AI-led financial platform. Generative AI is in demand amongst banks, especially to improve operations and reduce spam.[300]

FIJI

GRAND STRATEGY FRAMINGS

Fiji's strategic outlook is shaped significantly by its history, culture and location - the ocean that surrounds it remains interlinked with every decision. According to the Government of Fiji, its foreign policy objectives are heavily influenced by its Pacific identity, described as a "family first" regionalism forming the basis of its foreign policy objectives.

Ideology

Fiji's first settlers, the Lapita people, came to the island almost three thousand years ago. Fijians have relied on marine resources for their livelihoods, along with legends and rituals that form the foundation of their heritage. Dutch navigators discovered the archipelago in 1643, followed by diverse waves of migrations and culture shifts. The 19th century saw commercial interest bloom with the growth of plantations, sugarcane, cotton and sandalwood cultivation. In 1874, Fiji was officially declared a British colony,[301] and links between India and Fiji grew,[302] with Indian labourers brought under the indenture system until 1920. Fiji's first constitution was adopted in 1966,[303] and the country gained independence in 1970.[304]

Fiji has had a long history of coups since its independence. A coup in 2006 followed by a delay in democratic elections in 2009, led to Fiji's suspension from the Commonwealth[305] and the Pacific Islands Forum (PIF),[306] and Australia[307] and New Zealand[308] imposed sanctions and suspended diplomatic ties.[309] As a result, through its Look North Strategy, [310] Fiji sought to strengthen relations with other partners,[311] such as Indonesia, India, and China,[312] Brazil, South Africa, and Ethiopia amongst others. In a bid to reestablish its presence in the region, the Pacific Islands Development Forum was established in 2013,[313] whose members included some Pacific Island countries and civil society organisations. With the normalisation of relations over the years, this platform has since evolved into the Integrated Development Centre.[314] Democratic elections were held in 2014, following which Fiji was reinstated to the PIF. In 2022, Fiji saw the first peaceful transfer of power.[315] In Fiji's inaugural White Paper on Foreign Policy, released in 2024, it identifies as a non-aligned state.[316]

Modern day Fiji is a leader within the South Pacific and has, as its highest strategic priority,[317] contributing to upholding peace and maintaining a stable Indo-Pacific region. The Government of Fiji's foreign policy objectives are heavily influenced by Fiji's Pacific identity, described as a "family first" regionalism.[318] In 2023, Fiji introduced the concept of Ocean of Peace - a set of practices central to Pacific diplomacy, rooted in culture, reconciliation and shared respect. It has roots in the Pacific Way,[319] a term introduced in 1970 at the United Nations, by Fiji's first Prime Minister, late Ratu Sir Kamisese Mara. Fiji's relations with regional institutions such as the Pacific Islands Forum and the Melanesian Spearhead Group (MSG) remain pivotal, and the country counts on their support to further its idea of Ocean of Peace.[320]

Military

Fiji's military strategy is evolving to address contemporary security challenges through an approach that integrates its commitment to regional stability, national reforms, regional partnerships, and international alliances. The Ministry of Defence and National Security (MDNS)[321] has a vision of *"A safe, secure and Prosperous Fiji for all"*. The ethos of Republic of Fiji Military Forces (RFMF),[322] is *'Na Dina, Dodonu kei na Savasava'* (integrity, consistency and transparency) and their vision is to become a force strategically oriented to uphold its constitutional role while proactively addressing contemporary security challenges posed by climate change, radicalism, and transnational crime. Fiji is drafting a National Security Strategy (NSS) that acknowledges the interconnectedness of economic, environmental, and social factors that contribute to national stability alongside traditional security concerns. Fiji's Beyond 2022 Strategic Plan guides[323] the Republic of Fiji Military Forces' (RFMF) role in disaster response, strategic security partnerships, and intelligence operations, to enhance national and regional stability. This broadened security framework approach has been influenced by the 2000 Biketawa Declaration[324] signed during the 31st Pacific Islands Forum (PIF) meeting, which called for a unified response to emerging threats, and the 2018 Boe Declaration on Regional Security, signed at the 49th PIF meeting that included human and environmental security.[325]

While Fiji's military is small by global standards, it is the largest among the island states of Oceania.[326] The size of the RFMF in the early 21st century is largely attributed to its active participation in United Nations peacekeeping missions, which has played a crucial role in boosting regional cooperation with international partners including Australia , United States, and New Zealand. Fiji increased its defence budget allocation towards the RFMF from USD 103.1 million[327] in 2023-2024 to USD 169.6 million in 2024-2025.[328] The US pledged USD 4.9 million[329] for Fijian forces in 2024 to modernise forces and strengthen their shared aspiration for a free and open Indo-Pacific. Australia provides military advice, equipment, and training through its Defence Cooperation Program (DCP) of 1983.[330] New Zealand[331] supports Fiji through facilitating exchanges, deployments, and joint exercises. The India-Fiji Joint Working Group (JWG)[332] on Defence Cooperation is set to strengthen maritime security, naval capacity building, and training initiatives, in 2025. The Vuvale Partnership,[333] with Australia in 2023, emphasised collaboration in areas such as climate change, economic recovery, and security cooperation. Fiji's Status of Forces Agreement (SOFA)[334] with New Zealand in 2023, established a legal framework for enhanced military cooperation through training, maritime security and disaster and humanitarian response coordination.

Economic

Fiji's services sector is the primary contributor to growth,[335] and the country has emerged as a significant destination for the outsourcing sector which generated USD 350 million in 2023.[336] This is due to factors such as good internet connectivity (Fiji's participation in the Southern Cross Cable network,[337] a trans-Pacific submarine cable network), an English-speaking workforce, and similar time-zones to major industrial hubs. In 2017, Outsource Fiji[338] was set up as an industry body, headed by the private sector and supported by the government. Fiji's National Digital Strategy aims to transform

Fiji into a digitally empowered economy by modernising digital infrastructure and integrating emerging technology into existing programs. The government launched digitalFiji[339] in 2018, a digital transformation programme in place to improve the country's ICT infrastructure, and make government services more accessible to citizens. Fiji has high rates of digital penetration in the region, with 95% of the population having access to 4G and 5G technologies.[340] Google's investment in Fiji, as part of the South Pacific Connect Initiative, aims to build a robust network for the region.[341]

Fiji also has a manufacturing sector with an average GDP contribution of 19.8%.[342] Industries include sugar, textiles, furniture production and mineral water. Fiji's mining sector contributes 0.5%[343] to the GDP, and the government has conferred the private sector with exploration and development rights. Given Fiji's location in the Pacific and its geological formation, the mineral sector holds great potential. According to the Ministry of Finance, exports in Fiji are expected to grow to USD 2.7 billion and USD 2.8 billion in 2025 and 2026, respectively. While domestic exports showed a slowdown in 2023, exports in mineral water, gold, molasses, fish and other live animal exports registered an increase and are expected to further increase in 2025 and 2026 . Fiji's re-exports industry (export of goods without any considerable transformation from the state in which they were previously imported), includes petroleum products, fish and leased aircraft. In 2023, re-exports of mineral fuels and lubricants overtook domestic exports.

Fiji's National Ocean Policy (NOP) 2020-2030,[344] is focused on sustainable use of ocean resources for economic growth, and aims to designate 30% of its Exclusive Economic Zone as protected areas. The aim is to bring 100% of the ocean under national jurisdiction under sustainable management. The Fiji National Development Plan (NDP) 2025-2029 and Vision 2050, launched in 2024,[345] aim to utilise and revitalise the country's natural resources, alongside building sustainable partnerships with other countries, diversifying the Fijian economy and building macroeconomic stability. The NDP recognises that research, development and innovation across the public and private sectors is low, and that more attention needs to be given to this area.[346]

AI Landscape

Artificial intelligence integration is at a nascent stage in the Pacific Island states. Fiji is now taking steps to integrate it within the public and private sector. A concerted effort is being made by Fiji towards the deployment of technology for realising their strategic and economic goals. The government recognises the growing importance of artificial intelligence across sectors, in its National Development Plan (NDP) 2025- 2029 and Vision 2050.[347] The NDP acknowledges the minimal research carried out in the public or private sectors, and commits to building a sustainable framework for adoption, and harnessing the benefits of AI. The sectors[348] identified for AI integration include economic sectors, conservation of natural resources, climate change management, infrastructure and public sector delivery.

Fiji has been proactively leveraging international expertise and resources to enhance its capabilities in AI.

Examples of Industry Adoption:

1 Public Sector Enterprises

In 2024,[349] Fiji's Deputy Prime Minister visited India to explore potential collaborations in AI, information and communications technology (ICT), and cybersecurity. The national carrier of Fiji, Fiji Airways, has recently partnered with software company Assaia[350] to integrate AI-led technology for maximising performance.

2 Agriculture

The Ministry of Agriculture is working on a project[351] with the University of Sydney, the University of the South Pacific, and the University of Western Australia for agriculture damage assessment after a flooding.

3 Professional Skill Building Sector

In 2025, KPMG Fiji,[352] launched an AI Hub in Suva to integrate AI into the firm's operations, enhance productivity, and provide local talent with exposure to global projects. It focuses on developing AI tools for various sectors such as education, health, and finance, while also fostering collaboration with local universities.

4 Education

In 2024, USA based EON Reality,[353] established the first Spatial AI Center to revolutionise learning through virtual and augmented reality (VR/AR). The project integrates local insights with advanced AI, offering over ten thousand customised courses driven by AI analytics, to narrow educational gaps in Fiji. In 2019, the Yat Sen school[354] in Suva became the first to host an AI facility, gifted by China, to better integrate AI in the education sector. The government of Fiji is set to conduct an audit[355] in the education sector to understand existing technologies and how they could be integrated for enhanced learning outcomes while keeping cultural sensitivity in mind

5 Disaster Management

In 2022, Tractable,[356] a US based technology company partnered with United Nations Capital Development Fund (UNCDF) to develop a smartphone application for Fiji residents to upload images of property damage following a cyclone or flood.

6 Financial Services

Fiji Development Bank (FDB),[357] has launched an AI-based chatbot on its website, to enhance customer service and inclusivity, in 2024. This initiative, developed in partnership with UNCDF and ITGalax, aims to revolutionise customer service in the banking sector and provide a more efficient, digitised experience for Fijians. To further digitise the financial sector, Vodafone Fiji's Digital Financial Services and eCommerce, launched M-PAiSA[358] in 2024, allowing users to transfer money to and from their bank accounts in near real-time.

CONVERGENCES AND DIVERGENCES

Here we map thematic convergences and divergences in the approach of **geopolitical experts and technology experts** to AI related risks scenarios

Technology vs. Geopolitics: AI Opportunities and Risks

Technology is seen as critical to achieving progress and development within the Indo-Pacific region. The private sector focus on economic gains vis a vis the public sector focus on societal gains may limit trust and scope for collaboration. Yet, as dependence on digital systems grows, collaboration towards risk mitigations seems inevitable. Perspectives on risks and opportunities towards AI are a mixed bag: both sides at times converge on certain issues, and at times prioritise similar concerns in a divergent manner. As global AI supply chains increase dependencies for example, nations are trying to develop domestic abilities that may help decouple from international dependencies. However, technologists recognise the immense amount of expertise and capital required to achieve self-sufficiency, and that countries in the region - still in nascent stages of AI development - may struggle to keep up. Similarly, strict AI mandates, which are favoured by geopolitical experts, carry the risk of the government / regulating authority having significant power of censorship. There have been reports, for example, of Chinese chatbots[359] reflecting the state's propaganda and beliefs. Private sector reliance on foreign large language models trained on English text primarily from the United States,[360] are leading to cultural nuances being missed.

It is a delicate balance for countries to enable technology driven economic growth, while ensuring adequate guardrails to prevent misuse and context specific adoption. Policy experts across the board acknowledge the need for flexibility to keep pace with technology development. This is reflected in Japan's AI Promotion Act,[361] and ROK's AI Framework Act.[362] The degree of flexibility and reaction to disruption however will differ between countries based on societal and cultural norms. To build mechanisms for bilateral and multilateral cooperation on AI amidst such differences, there are within the Indo-Pacific, multiple conversations, working groups, and bilateral agreements. For example, India and ROK,[363] and India and Japan,[364] have recently signed an agreement for knowledge transfer, in order to foster talent. Indonesia and ROK have also discussed deepening bilateral cooperation[365] on AI governance, especially governance grounded in Asian values.

Any cooperation on AI however is incomplete without the involvement of the private sector that is driving technology advancement and adoption. A technology driven crisis will impact both the public and private sector, where the question of who is to be held accountable is a challenge, and shared accountability may be the only path forward. Technologists, for example, draw attention to the challenges of tracing accountability, with increasing integration of AI into technology that relies on open-source AI systems[366] that democratise access to data and lower costs. Sites like Hugging Face or Pytorch Hub make knowledge, of model weights trained by the community and public, open-source. However, this knowledge can also result in malicious and bad-faith actors[367] exploiting the model locally.[368] Using generative AI's abilities, LLMs can be used to automate[369] social engineering attacks, which relay malicious instructions[370] that can go unnoticed by standard filters. Bad-faith actors may also use repeated highlighting of failure cases, or other ways of wasting compute on random tasks, which may lead to a drain on resources, and a public trust deficit.

Robust cybersecurity measures and implementation of machine learning algorithms[371] to detect fraud and anomalies are being used to supplement human effort, however, opinions differ on the efficacy of human oversight in risk mitigation from AI

dependence. The safeguard of having humans in the loop may be nullified with the increasing reliance on AI systems for decision making. The AI systems themselves are not perfect. Most developers acknowledge the "black-box" problem[372] and the inability to understand how a model reaches an output due to the complex nature of neural networks.[373] AI models are run in an opaque nature,[374] which doesn't allow scientists, researchers and engineers to understand why a model delivers the output it does. Artificial intelligence ultimately depends on the data it has been trained on, which is not always free of biases, and AI systems hallucinations[375] are common, with a number of wrong outputs frequently reported. Model drift[376] or degradation in model quality over a period of time, due to data changes, or changes in the relationship between input and output variables is also common. Technologists therefore urge caution towards any optimism regarding the potential of AI technology.

Countries within the Indo-Pacific are experimenting to mitigate such risks. Under ROK's new act,[377] companies dealing with high-impact AI must establish and operate a plan to explain the output, and ensure human supervision. Safe and trusted AI is a key pillar in India's National Strategy for Artificial Intelligence,[378] and the IndiaAI Mission.[379] Measures such as regulatory sandboxes[380] are seen as a channel to bring researchers, developers and policy makers to test legal frameworks and whether they need to be changed.[381] In ROK, for example, industry veterans are being brought into government positions to steer the country's AI growth. Misinformation is an area where we see cooperation between the public and private sectors. Misinformation/ disinformation can lead to social discontent and disturbances, which impede organisational functioning, and countries within the region are establishing joint mechanisms to counter these. India, for example, has established due diligence by intermediaries under the Information Technology Act, 2000,[382] and Japan supports private-sector fact checking initiatives,[383] and has agreements with countries[384] to expand cooperation on fighting misinformation.

Across the board, in our research, technology experts downplay the hype around AI, and its potential at present. Artificial intelligence relies on data[385] provided by humans, and such systems, even if more autonomous than before, are likely to remain "unconscious machines, or special-purpose devices that support humans in specific, complex tasks."[386] Research points towards the sharp contrast between digital operating systems that make up artificial intelligence, and the cognitive abilities within biological creatures.[387] Reports suggest[388] an AI "bubble", where despite a massive push towards development and adoption, the returns might not be proportional.[389] Professionals are also unsure of the accuracy or reliability of AI tools[390] that have the potential to make work slower.[391] There are many bets placed on AI's future, but it remains to be seen how the technology will prove these bets correct.[392] Given these uncertainties, therefore, it is paramount that governments align and work closely with the private sector in the development and deployment of these technologies.

India

Convergences

Disruption in citizen lives: Specifically from any disruption to digital connectivity, as India is one of the fastest growing digital nations with 806 million internet subscribers[393] and the second-largest online population in the world.[394]

Opportunity for economic growth: Revenues from India's AI sector are expected to cross USD 280 billion in 2025.[395] A comprehensive AI ecosystem is being built through the IndiaAI Mission,[396] with high-grade computing infrastructure, a robust GPU supply chain and the development of domestic foundational models. Sovereign AI models that are smaller and designed for targeted use cases are likely to be a way forward. Towards this end, Sarvam AI has been tasked to build India's first sovereign LLM model "capable of reasoning and fluent in Indian languages,"[397] hosted on Indian servers, and trained on domestic data sets.[398] India's strong culture of domestic conglomerates may determine the trajectory of technological adoption, to reduce reliance on foreign infrastructure.

Geopolitical experts opined that India is likely to take a sector specific regulatory approach to AI, which will promote economic growth, intervening only in areas that concern national sovereignty. However, they also cautioned the possibility of reactive regulations through mechanisms like the IT Act or the Digital India Act, if AI threatens India's information sovereignty or public discourse.

Domestic safeguards: There is a general faith in domestic frameworks that exist to respond to any threat. For example, vulnerability mapping exercises are undertaken by the National Critical Information Infrastructure Protection Centre (NCIIPC).[399] According to the guidelines released in 2025, which align with Organisation for Economic Co-operation and Development (OECD), National Institute for Transforming India (NITI Aayog) and National Association of Software and Service Companies (NASSCOM) guidelines, a whole-of-government approach[400] will manage AI potential and challenges, as well as ensure compliance and enforcement.

Divergences

Cause for alarm: The private sector saw limits to any disruption caused by AI, through safeguards that are already in place. However, geopolitical analysts drew attention to the ability[401] of AI to create volume, velocity and variety in the spread of misinformation. Deliberate misinformation is not new and has been a part of strategic warfare for a long time, however, AI can compound the time lag between the news spreading and getting verified. The impact will endanger public safety, where the need to communicate to the public becomes priority.

Concerns around cyber-attacks: Cyber-attacks were a common concern, however, priorities differed. The private sector focused on business impact and drew attention to the systemic inequity[402] in the cybersecurity space. Larger organisations have the capacity to develop greater cyber resilience, to chatbots, business auto-responses, or support systems that are largely AI driven and can be weaponised. In comparison, the Small and Medium Enterprise (SME) sector that contributes 29%[403] to India's

GDP, has a steadily rising[404] digital adoption rate but lacks the means to incorporate safeguards. Unchecked businesses could further add to the risk: bypassing built-in safeguards in models to maximise profits.

Geopolitical concerns on cybersecurity, centered around the potential for conflict escalation and increased border disputes: The nature of conflict has changed with the introduction of AI- making it more precise and enabling remote operations through satellite imagery and drone technology. As technology is integrated across different fronts, vulnerabilities increase; India has already experienced an attack on the Aadhar database.[405] Cyberattacks on AI systems that have access to extremely sensitive data, such as healthcare related for example, can lead to catastrophic results, diminishing trust and increasing hesitancy towards AI adoption.

Looking Forward

To reduce AI related risk, suggestions include ensuring human oversight over AI systems, such as 'circuit breakers'[406] (both automated and human in the loop versions) to retain control, and regular stress tests to ensure that AI malfunction is caught in time. Understanding levels of threat and differences in risk that arise from open source data (risk of bias, lack of diversity, and data quality issues).[407] Establishing cloud sovereignty - while data can be hosted within a specific geographic territory and be sovereign, the lack of control over the hosting infrastructure can still make the country dependent.

Japan

Convergences

Disruption in citizen lives: AI technology is deeply embedded- from chatbots in services to its use in streamlining administrative tasks. Major disruptions could impact workflows given the remote working trend, as well as IT disruptions to communication and financial services.

Demographic challenges: The role of AI, automation, and robotics, is expected to increase in the future given declining birthrates[408] - 2024 marked the 16th consecutive year of population decline.[409] The workforce is expected to shrink 12% by 2040.[410] Robot density in Japan's manufacturing sector is the third highest in the world.[411] Robots are already playing a critical role in the caregiving,[412] agriculture,[413] and non-manufacturing[414] sectors.

Opportunity for economic growth: The AI industry is expected to grow at a CAGR of 21.4%[415] from 2022 to 2032. AI is predominantly being utilised as a support tool, to enhance efficiency and reduce load. Critical decision making still lies with humans, as Japan remains cautious due to the imperfect nature of the technology.

Collaboration with private sector: Japan has partnered with big technology companies for digital transformation as well as AI products. Japan's Digital Agency utilises Amazon Web Services (AWS) for its government cloud services,[416] and recently announced a collaboration with OpenAI to enhance public services.[417]

Microsoft announced an investment of USD 2.9 billion[418] in Japan's AI and cloud infrastructure. Its AI is being adopted across the Japanese private sector,[419] and to improve public service delivery[420] through collaboration with various government agencies.

Disaster reduction and recovery: Japan has developed technology,[421] to help with disaster prediction and dealing with its after effects. AI technology has been utilised to track storms and monitor floods,[422] but research[423] is still underway for earthquake detection.[424] AI is also used in the rescue and post-disaster phase through integration in drones and emergency alert systems. Japan's 2019 AI Strategy under urban development looks at how AI can be utilised[425] for advance warning of impending disasters and "streamline the disaster response by improving evacuation protocols and reducing the demands on staff from disaster management agencies in terms of data collection and analysis".

Divergences

Security concerns are high amongst geopolitical experts: In 2014, the expansion in scope of the Self-Defense Force's activities for the use of collective self-defense have increased engagement towards maintaining peace and security in the region. In this regard, regional tensions, especially AI-led disruptions, remain of particular concern.

Data governance: Japan is an advocate of the concept of Data Free Flow with Trust (DFFT),[426] and geopolitical experts find it likely that the government attempts some streamlining of control over datasets, in order to establish accountability.

Cultural norms: Cultural dynamics in Japan can influence the pace of technology adoption.[427] Japanese tendency towards perfectionism and high ethical standards has led to stronger hallmarks when it comes to safe and trustworthy AI.[428] An aversion to risk has led to slow digital transformation in the corporate space.[429]

Looking Forward

Integration of AI as a tool to increase human productivity, and support work across sectors, holds great promise for Japan in the face of a declining work force and labour shortages. Research is also ongoing towards the use of AI in disaster preparedness and management.

However, given the imperfect nature of the technology, there is a sense of great caution in its integration. Japan is also engaging with the international community towards this end. Japan has launched the Hiroshima AI Process[430] to promote an international framework towards safe advanced AI systems, as well as the Japan's AI Safety Institute. It is deepening cooperation with countries such as ROK that share similar problems[431] of declining birthrate, an aging population, resilience against disasters, and security considerations.

Republic of Korea (ROK)

Convergences

Disruption to citizen lives: Risk of breakdown in communication in the event of a technology-led disruption. ROK has high rates of digital penetration- in 2023 around 98%[432] of the population owned a smart phone. AI adoption rates are high[433] and workplace adoption is growing at a fast pace.[434] ROK ranks 6th in terms of AI capacity,[435] and 2nd in using the paid version of ChatGPT.[436]

Concerns on cybersecurity: There is a deep concern regarding cyber security amongst the private and public sector, and therefore a desire for collaboration is a priority. In April 2025 for example, SK Telecom, one of ROK's largest telecom providers, was hit by a cyber security breach that resulted in the leak of 26.96 million pieces of user data.[437] A joint government-private sector task force[438] was formed to deal with the situation.

Domestic ecosystem development: The AI ecosystem in ROK is a mixture of domestic and international players. Locally produced large language models (SK Telecom launched the world's first Korean LLM)[439] coexist with models produced in collaboration with external partners that are able to connect to the Korean context. These include LG's Exaone, Naver's HyperClova X, Upstage's Solar Pro, SK Telecom's A.X series, Kakao's Kanana and NC AI's Varco.[440] The focus as defined in the 2019 National AI Strategy, is to improve quality of life, match global competitive standards and contribute to economic growth by 2030. [441] In 2025, the Ministry of Trade, Industry and Energy, also announced an investment of USD 349 million in AI with a focus on industrial innovation.[442]

Economic opportunity: According to The Bank of Korea, AI has the potential "to increase the productivity of the Korean economy by 1.1-3.2% and GDP by 4.2-12.6%".[443] The government's newly announced Economic Strategy places AI at the centre of various projects, such as "humanoid robots for logistics and manufacturing, autonomous vehicles and ships, AI-powered home appliances, drones for firefighting and agriculture, and AI-enabled factories that combine robotics with process optimization".[444]

Divergences

Reaction to cybersecurity issues: Companies are paying the price for cyber security breaches. As a result of the April 2025 cyber security breach for example, SK Telecom was fined by the privacy regulator over "basic security failures and poor management".[445] However, geopolitical analysts express concern over increasing cyber attacks on public institutions over the years,[446] where it may be difficult to pinpoint blame considering suspicions regarding the role of North Korea,[447] or pro-Russia hacking groups that have claimed credit for some attacks.[448]

Increase in misinformation and financial scams: The private sector drew attention to the increasing risk to ROK's aging population who are targets of schemes that use generative AI and deepfakes. Voice phishing scams led to financial damages amounting to USD 470 million,[449] in the first half of 2025, and according to the

National Police Agency, 47.6%[450] of the cases were reported by citizens in their 50s and 60s.

Societal experiences influence norms around technology design: For example, mobile phones in ROK are required to have the sound on while taking a photo,[451] a requirement that was borne out of rising cases of harassment and illicit photography.

National security concerns and limits to technology growth: In ROK, data localisation laws for consumer protection and safety also serve as national security measures, due to tensions with North Korea.[452] For example, a request from Apple over export of mapping data was declined in 2023[453] due to national security concerns.[454] The AI Framework Act therefore, is "at once a strategy to coordinate government direction, an industrial policy to promote artificial intelligence (AI) development and adoption, and a regulatory framework to manage risks".[455]

Looking Forward

ROK has a tradition of public-private partnerships and industry veterans from major companies such as Naver,[456] and LG,[457] are already included in policy positions, such as Presidential Secretary for AI and Minister of Science and ICT, respectively. Development of advanced telecommunications infrastructure is state-backed and led by Korean companies such as SK Telecom and LG U+.[458] The government has brought together five local companies to help develop ROK's large-scale foundational models,[459] in a bid to decrease foreign dependency, control data flows and strengthen national security. ROK's government has also provided extensive support to industry, identifying AI as the cornerstone of its economic transformation.[460]

ROK is committed towards advancing digital economy cooperation and was admitted in the Digital Economy Partnership Agreement in 2024 with founding members Singapore, Chile, and New Zealand.[461] This agreement "establishes new approaches and collaborations in digital trade issues, promotes interoperability between different regimes, and addresses emerging digital technology issues".[462]

Indonesia

Convergences

Disruption to citizen lives : Due to its archipelagic nature, Indonesians are extremely reliant on the internet for communication and professional work. Digital penetration was recorded at 79.5% (2024),[463] with around 50.2% of the population on social media.[464] Any technology disruption will have an enormous impact on the public and their livelihoods.

Deepfakes and misinformation: Concerns regarding the rate of AI literacy in the country remain high, as deepfakes and misinformation have caused considerable havoc in the recent past.[465] Deepfakes led disruptions during the 2024 election resulted in the spread of propaganda, false narratives and misinformation.[466] This included candidates speaking in Mandarin and Arabic languages,[467] and misuse of

the voice of former President Suharto.[468] Deepfakes of President Subianto have also been used in the past to swindle money from innocent citizens.[469]
Cyberattacks and disruptions to citizen services: The June 2024[470] attack on the National Data Centre led to disruptions in two hundred and eighty two public services[471] including airport and immigration services. One of Indonesia's larger banks, BSI,[472] was also the victim of a ransomware attack, which led to users being unable to access online banking services or withdraw money from ATMs. In the Aceh province, which relies mainly on Islamic banking, the disruption was more severe.[473] Such cyber attacks not only disrupt services but also lead to an erosion in customer confidence.

Potential for economic growth: There is tremendous hope regarding AI potential - estimated to add USD 366 billion[474] to Indonesia's GDP by 2030. Top sectors driving AI are marketing, gaming and education.[475] Initiatives like Sabahat AI,[476] a large language model in Indonesian languages - enable users to build AI-based services in Bahasa Indonesia. Indonesia has partnerships with technology giants such as Nvidia,[477] and Microsoft,[478] and increased AI-related investment which reached USD 542.9 million in 2024.[479]

Domestic capabilities and safeguards: Towards achieving the Golden Indonesia 2045 Vision, the National AI Strategy (Stranas KA) 2020–2045 serves as a road map towards AI integration across the sectors of health services, bureaucratic reform, education and research, food security, and mobility. AI ethics are a concern, and the government has introduced sector specific guidelines such as for the banking industry.[480] Indonesia advocated the Digital Economy Framework Agreement (DEFA),[481] as the host of the 2023 ASEAN Summit, and has also co-sponsored resolutions at the United Nations calling for safe and secure AI systems. Integration of AI into military technology is still limited and a cautious approach is employed.[482]

External technology dependence: Building internet connectivity in Indonesia is expensive, and there is a reliance on external partnerships that could be a source of vulnerability. For example, telecom operator Huawei provides more cost effective infrastructure (and receives tax breaks from the Chinese government towards this end),[483] and is a dominant player in the telecommunication sector, with 70% of the network equipment used by top Indonesian companies, sourced from Huawei.[484]

Divergences

Data governance: The principle of data sovereignty[485] is a highly debated issue, as the recently concluded trade deal with the United States includes Indonesia agreeing to transfer user data to the United States.[486] While the government has confirmed that such transfers will be in accordance with an established governance framework,[487] the private sector expresses concerns.[488]

Cyberattacks and risk to infrastructure: Government cybersecurity measures that are still being developed, are unable to keep pace with the adoption of AI technology across the private sector and the increasing and evolving crimes. In the first half of 2025, there were a total of 3.64 billion cyber attacks, of which 83.68% were malware-based attacks, 4.32% were unauthorized access and system attacks, and 0.64% were system exploitation.[489]

Looking Forward

The utilisation of satellite communication is likely to be a move pushed by the industry (private sector) and supported by the government. Indonesia has launched the SATRIA-1 satellite[490] to ensure seamless connection between different regions, and to maintain national sovereignty.[491] The country has also seen collaborations between global providers such as Intelsat,[492] and Indonesian companies such as Lintasarta, in this sector.

The absence of a regional governance framework leads to the proliferation of AI-led risks and an increase in AI vulnerability.[493] Indonesia could lead efforts towards risk mitigation, as one of the largest members of ASEAN with a significant market size. Indonesia has already led efforts towards collaborations[494] within ASEAN on Regional Payment Connectivity, and support towards initiatives such as the Bangkok Digital Declaration,[495] for digital inclusion and technological innovation.

As a developing country with a pragmatic approach, Indonesia will seek partnerships that are beneficial for its foreign and economic policy. Indonesia has established bilateral cooperation with countries such as India,[496] China,[497] and UK,[498] to work on AI governance and digital transformation. Its external dependence on other countries for hardware / software imports, has reaffirmed cooperation with China,[499] Russia,[500] and the United States. The situation with China remains sensitive - while the two countries have been engaged in tensions in the South China Sea,[501] China also remains Indonesia's largest trading partner,[502] and has invested heavily in Indonesia's infrastructure development.[503]

Fiji

As a Small Island Developing State, the approaches of the government and private sector are deeply intertwined in Fiji. Decisions are also guided by Fiji's Pacific identity and "family first" regionalism. The trends therefore, are presented below in a combined fashion:

Insulation from global technology trends: Fiji is considered one of the most advanced[504] in the Pacific region and almost 96%[505] of the population has access to the internet. However, global emerging technology trends, or global incidents are unlikely to have much effect as approximately 58%[506] of the population resides in urban areas, and people living in the rural areas still lack access to basic facilities such as electricity, water, and reliable internet connectivity.[507]

Private and public sector efforts towards digital adoption: The private sector is at the forefront of enhancing digital connectivity, with investment in undersea cables, mobile networks, and partnerships with global companies such as Vodafone and Starlink. Generative AI is being used in education,[508] chatbots in banks,[509] e-commerce platforms, and disaster risk and reduction efforts.[510] The government's digitalFiji programme, launched in 2017,[511] has worked towards ensuring key government services are available online, for the convenience of the citizens.[512] The 2025 National Digital Strategy recognises the need for a national AI policy for ethical AI adoption and responsible AI integration in government and private sector services.[513]

Cyberattacks and digital infrastructure vulnerability: Increase in digital connectivity has increased hacking incidents such as a cyber security incident in 2021,[514] that affected essential government services. As digital banking services gain popularity, the risks are set to increase. The government is working to mitigate these risks. The National Cybersecurity Strategy 2025-2030 is to be implemented soon, and Fiji has Memorandums of Understanding (MoUs) with Japan International Cooperation Agency (JICA),[515] Australia,[516] and India,[517] towards cyber-defense efforts.

Looking Forward

As a country that has seen numerous coups, political stability in Fiji remains a key priority and vital for future progress and development to occur. Fiji's medium-term goal[518] is to adapt to the changing nature of the global system, in a way that it is "Friends to all, enemies to none". Fiji engages equally with Australia, New Zealand, the United States, and China.[519] The government recognises the growing importance of AI and the National Development Plan (NDP) 2025-2029,[520] highlights harnessing the potential of new and advanced technologies to "catalyse economic growth and build greater resilience". Priority sectors for AI integration identified by the NDP include economic sectors, conservation of natural resources, climate change management, infrastructure and public sector delivery. Any decisions towards digital transformation will be in alignment with Fiji's Pacific identity and "family first" regionalism. The Pacific Islands Forum acknowledges that the concept of security has expanded,[521] and Pacific-specific responses need to be coordinated to tackle complex challenges, including cyber security measures. Fiji is working towards positioning as a regional digital hub,[522] and leading long-term strategic thinking and solutions rooted in the regional ethos, for the challenges unique to Small Island States.[523]

Conclusion

The grand strategy framings presented in this report help better understand the nuances of the trends when AI is added to risk scenarios that force strategic thinking and a shift in policy. Countries react to emerging AI just as they would to the introduction of a new idea or occurrence. Private sector actions and abilities in the domestic contexts are very much tied to the domestic sector when approaching technology adoption, especially in developing economies. AI is however a technology that is growing by leaps and bounds outside the confines of the countries under this study, and the grand strategy framings prompt us to confront the degree of reactions or change in strategic approaches of countries. As one of our interviewees, Leonardo Quattrucci, Adjunct Professor, Sciences Po, Paris, has aptly said of the world we live in today, "Absurdity is growing across the world, at this moment in history. Especially in geopolitics, what we expect keeps diverging from what actually happens. If we don't take things that seem absurd seriously, then we will be blindsided".

The levers of grand strategy - ideology, military, economy - help understand the unique approaches to disruptions that the five countries under our study may take. They also help understand the extent to which private players may aid or hinder mitigation efforts. However, it takes one strike by a bad-faith actor to unleash chaos. As with climate change, technology that we are yet to fully comprehend follows no borders. Countries will thus have to work together at times, even as they safeguard their own national interests on priority. For this we need to go beyond the concept of likeminded partnerships, to partnerships on shared concerns; where we are able to cooperate while acknowledging our differences. The framings presented in this report, we hope will contribute to a deeper understanding of the diverse countries within the Indo-Pacific region and their approaches to AI, to prepare for current and future risks.

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