GTIPA Perspectives:
Making AI Policy to Drive Innovation

GLOBAL TRADE & INNOVATION
POLICY ALLIANCE

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The Global Trade and Innovation Policy Alliance (GTIPA) represents a global network of over 60 independent, like-minded think tanks from over 40 economies across the world who believe that trade, globalization, and innovation—conducted on private enterprise-led, market-based, rules-governed terms—can maximize welfare for the world's citizens. The Alliance exists to collectively amplify members' voices and enhance their impact on trade, globalization, and innovation policy issues while introducing new scholarship into the world on these subjects. Among their shared principles, GTIPA members are committed to approaching globalization and trade through an innovation-based perspective. This perspective recognizes the immense potential of innovation in improving existing processes, products, services, and business models, and its role in expanding economies and promoting sustainable development.

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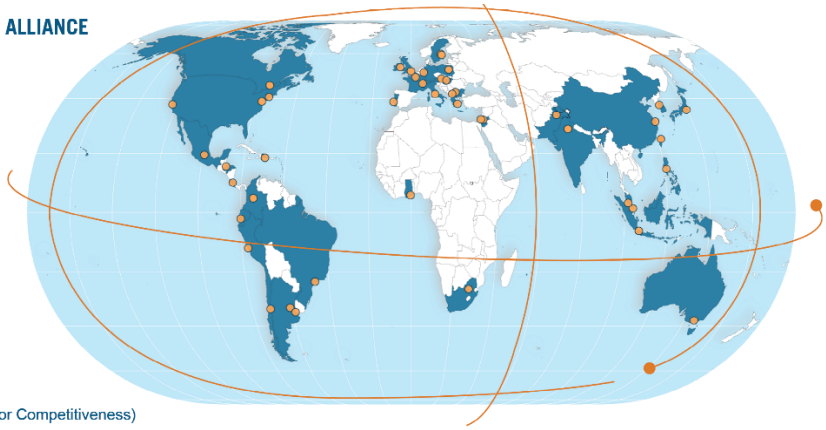

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CONTENTS

About the Global Trade and Innovation Policy Alliance 1
Argentina 10
Australia 14
Bangladesh 18
Bosnia and Herzegovina 22
Brazil 27
Bulgaria 30
California 33
Chile 34
Colombia 39
Costa Rica 42
Ecuador 45
El Salvador 50
Germany 54
Greece 56
India 60
Indonesia 64
Italy 67
Mexico 73
References 79
Western Balkans (North Macedonia) 80
Pakistan 87
The Philippines 95
Poland 98
Peru 100
South Africa 103
Sweden 106
United States 109
Vietnam 114
References 120
Appendix: A Global Declaration on Free and Open AI 121
Endnotes 124

Artificial intelligence (AI) is the general-purpose technology of this decade, and possibly even this century, with impacts predicted to be as deep and diffuse as electricity and the Internet. As with other general-purpose technologies in their nascent stages, much still remains uncertain regarding AI's capacity and direction. This report addresses the state of innovation policy on AI around the world, compiling 32 vignettes from 28 think tanks in 30 countries—Albania, Argentina, Australia, Bangladesh, Bosnia and Herzegovina, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Germany, Greece, India, Indonesia, Italy, Kosovo, Mexico, Montenegro, North Macedonia, Pakistan, the Philippines, Poland, Peru, Serbia, South Africa, Sweden, the United States, and Vietnam. It details the impactful measures that these governments have taken to drive successful development and deployment of AI in their economies. The countries highlighted in this report are diverse, representing every continent except Antarctica and a range of economic and social contexts. Some of these vignettes portray triumphs already won, some outline visions yet to be realized. All of them support GTIPA's belief that, if governed wisely, AI can make substantial contributions to global growth and development.

This report also includes a Declaration of Open AI, which calls for democratic countries to establish a global framework for free and open AI, protecting freedom of expression, innovation, free trade, and access to AI while promoting transparency and responsible use. The declaration, which is endorsed by 23 signatories, argues that governments should avoid censoring or manipulating AI and should instead pursue international collaboration to ensure AI remains accessible, innovative, and aligned with democratic values.

The Promise of AI

While AI has long been of interest to academic researchers, over the last 10 years the technology has evolved from a research frontier to a general-purpose tool reshaping the global economy. In 2016, Google DeepMind's AlphaGo system defeated the 18-time world-champion of Go, a game long considered a benchmark of AI.[1] In 2023, OpenAI's GPT-4 not only passed the Uniform Bar Exam, but also scored in the top tier of human test-takers. The same year, ChatGPT also passed the U.S. Medical Licensing Examination.[2] Today, large language models from Anthropic, OpenAI, and other AI leaders can write and debug software, analyze complex legal and financial documents, and execute intricate tasks with little supervision.

The value of such a tool to the economy is expected to be massive, though calculating the exact impact will be the project of future researchers. Yet the predicted estimates are staggering. Goldman Sachs estimates that generative AI could drive a 7 percent increase in global gross domestic product (GDP), corresponding with $7 trillion in value, and increase productivity growth by 1.5 percentage points over 10 years.[3] Estimates from the World Economic Forum and EY-Parthenon predict similar effects to labor productivity.[4] Whatever the macroeconomic effects turn out to be, the impacts of AI adoption at the firm and worker level are already becoming clear. For example, economists found that AI-enabled customer support systems produced a 34 percent productivity improvement for novice and low-skilled workers.[5] Researchers have also found that use of AI increases the output of software developers by 26 percent.[6]

In addition to the prosperity promised by labor productivity gains in the private sector, AI has also proven its utility for public sector and social impact projects. It is already being used to provide educational solutions to youth in Iraq, Tanzania, South Korea, and the United States, digitize and

translate documents in India, or map forests in Brazil.[7] As the case studies in this report show, it has been adopted by governments around the world to provide public services in health care, education, and criminal justice.

Despite its evident promise, the course of AI's development, deployment, and adoption will be influenced in large part by the decisions of governments around the world. This publication examines the consequential choices about infrastructure, investment, talent, and regulation that policymakers are making today to determine what is working and how we might improve.

Shared Lessons

Despite considerable variation in political context and policy instruments, several general themes emerge from the experiences and recommendations shared in this report.

First, GTIPA partners from Argentina to Vietnam emphasize that governments must be proactive and holistic in their strategies. The majority of the countries featured in this report have developed a coordinated national AI strategy. These strategies appear to be most successful when they involve a variety of levers to introduce and catalyze AI deployment in their countries, and when they include specific plans and benchmarks for implementation.

Second, GTIPA partners call for a thoughtful balance of support and freedom in successful AI policies. In keeping with GTIPA's core principles and the "Innovation Success Triangle" (see ITIF's book *Innovation Economics: The Race for Global Advantage*) we find that room to experiment with new technologies is necessary for the Schumpeterian process of creative destruction while acknowledging the role of government as a patient capital provider, procurer, and adopter.[8]

Third, GTIPA partners laud strategies that are sensitive to their country's unique contexts, strengths, and weaknesses. For Italy, that may mean focusing on building applied AI solutions for the real economy instead of competing to build frontier models. For Chile and Sweden, that may

mean bolstering and evolving existing characteristics of their societies or economies that can be advantageous in the AI transition, such as access to renewable energy or an existing telecommunications industry. In any case, each nation has a role to play in the global AI transition.

Finally, GTIPA partners emphasize that successful national policies are contingent on an ecosystem of allies. Whether it is El Salvador's collaboration with Google to digitize public sector operations and build out infrastructure, the European Union's pooled supercomputing resources, or the United States' Pax Silica partnership for economic cooperation, the successful deployment of AI to generate lasting, worldwide prosperity requires countries to embrace rules-based, competitive trade and globalization.

Country Case Studies

The country case studies compiled in this report reveal several critical areas of attention in the design and implementation of AI policies for innovation.

Compute and Infrastructure Capacity

As compute and energy become chief constraints on the further development of AI, these investments are crucial for fostering continued innovation. Many countries featured in this report have made significant investments in computing power, energy, and data and network infrastructure.

- Argentina partnered with OpenAI and Sur Energy to build the first Stargate data center in Patagonia, expected to be the largest AI infrastructure facility in Latin America.
- Chile's Humboldt submarine cable, which was built in partnership with Google and is expected to be operational in 2027, will land in Australia and be the first direct digital route linking South America and the Asia-Pacific.

- Italy published a national strategy for attracting foreign investment in data centers and has two projects in development currently.
- Mexico's Querétaro has begun to position itself as Mexico's leading data center hub, and Amazon and CloudHQ have established projects in the state to expand international cloud services.
- The United States has eased regulatory requirements to facilitate the buildout of AI data centers.

Research and Development (R&D)

Innovation—the creation of new or improvement of existing production processes, products, services, and business models—requires institutions and organizations capable of developing and testing new ideas. Most of the countries in this report are building such institutions, though their focus along the research-to-deployment chain varies.

- The Bulgarian Ministry of Education and Science founded the Institute for Computer Science, Artificial Intelligence, and Technology (INSAIT) in partnership with Sofia University and two leading Swiss institutes.
- Greece is building a national supercomputer, DAEDALUS, that will allow start-ups, researchers, and Greek enterprises to build and train resource-intensive AI models. Its PHAROS AI Factory supports other European Union projects such as North Macedonia's Vezilka large language model.
- Italy's Leonardo supercomputer has provided over 500 million computing hours to European research projects.
- South Africa launched the AI Institute of South Africa, a public-private partnership that coordinates funding and talent pipelines and complements the long-standing Center for AI Research (CAIR).
- Serbia has partnered with NVIDIA to establish the National AI Platform, a supercomputing infrastructure, for research and development of AI applications.
- The United States has set forth the Genesis Mission, which aims to build a network of national laboratories, AI systems, supercomputers, and datasets to drive AI-accelerated innovation.

Tax and Investment Ecosystems

Competitive corporate tax codes and policies that encourage cross-border investment are one of the most significant drivers of innovation. The countries in this report feature a variety of tax and investment levers that range in scope and scale.

- Argentina's Incentive Regime for Large Investments (RIGI) guarantees tax, customs, and foreign exchange stability for three decades for investments exceeding $200 million in strategic sectors including technology.
- Australia established a $15 billion AUD National Reconstruction Fund that offers loans and equity for advanced manufacturing projects to crowd in private investment.
- The Brazilian Development Bank and Brazilian Innovation Agency reported $1 billion in approved credit and equity for AI between January 2023 and September 2025.

- Bangladesh's High-Tech Park Authority has leveraged a 10-year tax holiday and duty-free import of capital machinery to attract electronics assembly operations.

Talent and Skills

One of the most significant fears accompanying AI's integration into the economy is widespread unemployment. These fears can be managed by thoughtful innovation policy that generates productivity growth, along with investments in the education and skills that will equip citizens to better contribute to and benefit from a more innovative economy. Almost all the countries included in this report outline educational initiatives to meet changing workforce demands.

- Australia's Future Skills Organization and Microsoft partnered to create a pilot National AI Skills Accelerator which aims to equip more than 30,000 educators and administrators with tool-agnostic AI skills.
- In California, leading AI companies have partnered with the California State University System to develop training and education partnerships.
- Ecuador's AI Strategy aims for 10,000 workers to complete AI training.
- Pakistan established a National AI Skill Development Program with a "Train the Trainer" initiative that is focused on producing 10,000 qualified AI trainers by 2027.

Adaptive Regulation

Voluntary, competitively determined business considerations often drive the most successful innovation. Many of the countries included in this report allow entities working on AI the freedom to develop and test their products while limiting excessive risk.

- Indonesia's National AI Roadmap 2025–2029 chooses to implement regulatory sandboxes and incremental, risk-based obligations.

- Pakistan's Regulatory Sandbox Framework aims to give 70 enterprises access to regulatory sandboxes to spur innovation.
- South Africa iterated through three AI policy drafts that were open for public comments, international benchmarking, and interdepartmental consultations.
- The United States has established a voluntary frontier framework which does not gate the release of frontier models but gives government advance access to those models to assess and defend against cybersecurity risks.
- Vietnam's AI policy architecture resolves to be "ex-post control" and refrain from dictating research methods or processes while adopting a tiered risk model.

Government as Adopter

Government can benefit substantially from the integration of AI and can help build out demand for innovation. Many of the countries featured in this report have established public sector pilots that deliver tangible benefits to their citizens.

- Albania launched Diella, an AI-driven digital assistant for the national e-Albania platform, which recorded 972,000 interactions by September 2025. North Macedonia also hosts an AI assistant for accessing government information.
- Argentina deployed an AI ecosystem called PROMETEA in Buenos Aires that has reduced resolution times for cases by 77 percent and increased prosecutors' productivity by 300 percent.
- Brazil reports 182 AI solutions in operation throughout the federal government as of 2025.
- Chile has established the Ciudades por la IA program to support municipalities in identifying local challenges that can be addressed through AI while connecting them with technology providers capable of developing practical solutions.
- Colombia's Superior Council of the Judiciary established guidelines for the use of AI tools in the judiciary in 2024.
- El Salvador established DoctorSV, a public telemedicine platform developed with Google Cloud that completed 2.3 million medical consultations in its first five months of operation. El Salvador also received $500 million from the World Bank to deploy a nationwide AI education program with xAI's Grok.
- Peru created an Artificial Intelligence Officer who is responsible for identifying, planning, and implementing AI use cases within every public entity.
- The Philippines created the Education Center for Artificial Intelligence Research (ECAIR) to craft policies for the use of AI in the education system. One such use is the System for Intelligent Growth and Learner Anthropometry (SIGLA), which allows teachers to track student health metrics to make sure they are receiving proper nourishment.

Sectoral and Small- and Medium-sized Enterprise (SME) Deployment

The full potential of AI can only be unlocked if its general-purpose features can be deployed successfully in diverse sectors and by entities of all sizes, without penalty to those that are more productive, innovative, or larger than others. The following countries are just a few of the many who have facilitated AI deployment in important national sectors and SMEs.

- Bangladesh's KrishokBondhu gives AI-powered agricultural advice to farmers throughout the country via phone-call interface.
- Germany's Mittelstand-Digital project established 26 regional innovation hubs that support SMEs with AI implementation through training and expert consultation.
- Italy's MADE Competence Center helps manufacturing companies, including 20 AI companies, experiment with and adopt advanced digital technologies to accelerate application. MADE signed a strategic cooperation agreement with the Italian Institute of Artificial Intelligence for Industry (AI4I) in June 2025.
- In Mexico, Nissan's industrial automation initiatives have produced a 3 percent reduction in maintenance failures.

Standards and Coordination

Because AI requires complex supply chains and enables diverse uses, streamlined deployment requires entities to work together at all levels. The following countries, among others detailed in the report, have taken a collaborative stance on policymaking.

- Costa Rica has joined Latam-GPT, the Digital Economy Partnership Agreement, and Pax Silica.
- Pakistan aligned its national policy with the Organization for Economic Cooperation and Development (OECD) AI Principles and the International Telecommunications Union's (ITU's) AI for Good framework.
- South Africa helped to develop the Artificial Intelligence for Africa Blueprint to assist African Union states in designing their own AI strategies.

Collectively, these examples illustrate the essential ingredients of AI policies that drive innovation.

ARGENTINA

Fundación Internacional Bases / We Are Innovation, By José Alberto León Méndez

There is a comfortable narrative according to which AI innovation belongs exclusively to Silicon Valley laboratories and Brussels regulators. Argentina has spent the past 18 months dismantling that premise. From Patagonia, where wind power will feed Latin America's largest data center, to the offices of a Buenos Aires prosecutor's unit where an algorithm called PROMETEA predicts judicial outcomes with 96 percent accuracy, the country has moved from declarations of intent to accomplished facts. The transformation rests on three pillars: a philosophy of deregulation articulated at the highest political level, infrastructure investment at global scale, and an early-adoption ecosystem whose density few Latin American nations can match.

Context matters. When Javier Milei took office in December 2023, he inherited an annual inflation rate of 254 percent and a fiscal deficit equivalent to 5 percent of GDP. Within two years, his government achieved the first fiscal surplus in 14 years, brought inflation down to 30 percent, and lifted most currency controls in April 2025.[9] That macroeconomic stabilization is not incidental: it constitutes the precondition for any innovation policy to be credible in the eyes of investors. The five policies described below operate on that foundation of fiscal and monetary reform, and they demonstrate how an emerging country can build an AI-friendly environment without a massive public research budget.

Deregulation as a Market Signal: The "Zero AI Laws" Doctrine

In June 2024, Demian Reidel—then head of Milei's Council of Economic Advisers—told the *Financial Times* that investing in Argentina would offer technology companies a "hedge" against rising regulation in Europe and the United States, and declared that "all the stars have aligned for us to be perhaps the world's fourth AI hub."[10] The statement was no mere rhetoric: it came weeks after Milei met with Sam Altman, Tim Cook, and Sundar Pichai in San Francisco, and it anticipated a policy shift that would be formalized months later.

On January 15, 2026, Milei and Deregulation Minister Federico Sturzenegger published a joint column in *The Economist* titled "Rein in Regulators, Not Big Companies," where they stated: "We want companies to know they can explore, produce, sell and profit from this technology without being bothered".[11] Six days later, at the World Economic Forum in Davos, Sturzenegger participated in the panel "Regulating at the Speed of Code" and delivered the phrase that encapsulates the government's doctrine: "My only task right now is to make sure no AI law comes into existence."[12]

That same day, from the main stage at Davos, Milei described AI as "the 21st-century version of Adam Smith's pin factory": a catalyst of increasing returns whose potential is destroyed when the state imposes regulations that penalize profits.[13] This is not an improvised stance: Sturzenegger explained that the deregulation process had begun 2 years before Milei took office, with a comprehensive review of all existing legislation, and that Argentina had "implemented 13,500 structural reforms" during its first 2 years in government.[14]

This approach drives innovation through what economics literature calls credible signaling. By publicly committing at global forums and in top-tier publications not to regulate AI specifically,

the Argentine government reduces uncertainty for developers and investors at a time when multiple jurisdictions—from the European Union (EU) to Brazil—impose risk classifications, national registries, and mandatory impact assessments that raise market entry costs. The signal is the most powerful because it is not limited to rhetoric: it is backed by a demonstrable track record of 13,500 structural reforms and an institutional framework that allows regulated and unregulated segments to coexist within the same market—what Milei and Sturzenegger call "market discipline over regulators themselves."

Stargate Argentina: $25 Billion in AI Infrastructure in Patagonia

On October 10, 2025, at the Casa Rosada, the Argentine government announced that OpenAI and Sur Energy had signed a letter of intent to build the first Stargate data center in Latin America, located in Patagonia. The project envisions an investment of up to $25 billion and a processing capacity of 500 megawatts, figures that would make it the largest AI infrastructure facility in Latin America.[15]

OpenAI CEO Sam Altman noted in a video message that Stargate Argentina "goes beyond infrastructure: it is about putting Artificial Intelligence into the hands of people across Argentina," adding that Milei's vision for how AI could drive the country's growth was "unmistakable and strong."[16] The choice of Patagonia was deliberate: the region offers access to abundant renewable energy - wind, hydroelectric, and solar - fiber optic connectivity linking the Atlantic and Pacific oceans, and cold water for the cooling systems that high-density data centers demand.[17]

The project is structured under the Incentive Regime for Large Investments (RIGI), which guarantees tax, customs, and foreign exchange stability for 30 years (see the following section). According to OpenAI data, one in three Argentine adults uses ChatGPT regularly, the country ranks among the top four in Latin America for developers working with OpenAI tools, and approximately 30 percent of businesses already integrate AI solutions.[18] Those indicators of real demand serve as a guarantee for an investor committing billions: they are not building on empty ground, but on an ecosystem that already consumes AI at scale.

Stargate Argentina drives innovation by generating what might be termed computational gravity: by hosting world-class processing infrastructure on national soil, the project enables local companies, government agencies, and start-ups to access cutting-edge computing capacity without transoceanic latency. Argentina ceases to be a passive consumer of AI services and becomes a node in OpenAI's global network, which already includes centers in the United States, the United Kingdom, Norway, and the United Arab Emirates.[19] Furthermore, the initiative features a mixed export-and-local-integration model: Argentine companies, State agencies, and organizations will be able to acquire computing power for their own applications.[20]

RIGI and the Knowledge Economy Regime: 30-Year Legal Certainty

No $25 billion project survives without a legal framework that shields it from the political swings that have characterized Argentine economic history. The Incentive Regime for Large Investments (RIGI), enacted through the Bases Law (Law 27,742, July 8, 2024), offers tax, customs, and foreign exchange stability guaranteed for three decades for investments exceeding $200 million in strategic sectors—including technology—with the requirement that at least 40 percent of the amount be disbursed within the first 2 years.[21]

The incentives are concrete: a reduced corporate income tax rate of 25 percent, accelerated depreciation, exemption from import duties on capital goods, progressive elimination of export duties, and privileged access to the foreign exchange market for profit repatriation. Additionally, the law establishes an international arbitration framework allowing investors to resort to the Permanent Court of Arbitration, the International Chamber of Commerce, or the International Center for Settlement of Investment Disputes (ICSID).[22]

What distinguishes the Argentine approach is the complementarity between RIGI, designed for mega-investments, and the Knowledge Economy Promotional Regime (Law 27,506, effective since 2020 and extended through 2029). This second instrument offers a reduced income tax rate of 15 percent—compared to the general 25 percent—value added tax (VAT) exemption, employer contribution deductions, and fiscal stability for companies engaged in software development, AI, robotics, the Internet of Things (IoT), biotechnology, and exported professional services, among others.[23] Thus, while RIGI protects the hyperscale building of data centers, the Knowledge Economy Law protects the ten-developer studio training models or the export of AI services from a coworking space in Córdoba.

Both regimes drive innovation by addressing the single most cited obstacle among foreign investors: regulatory instability. By committing in law that incentives will not be affected by eventual repeal or by the creation of more burdensome regulations for decades, the Argentine State seeks to defuse a skepticism that Argentina, a country that has had fiscal deficits in 113 of the last 123 years, rests on solid foundations. To date, the provinces of Jujuy, Catamarca, Chaco, Chubut, Mendoza, Río Negro, Salta, San Juan, and Tucumán have already joined RIGI, with the City of Buenos Aires, Córdoba, Neuquén, and Santa Fe in the process of doing so.[24] For AI projects that require investment horizons measured in decades—data centers, energy networks, talent development—this certainly is not a luxury; it is a necessary condition.

Provincial Sandboxes: Jujuy's Protocol and Decentralized AI Governance

In April 2025, the Superior Court of the province of Jujuy issued a protocol for the use of AI in the judiciary that includes, among its most notable measures, the implementation of a regulatory sandbox: a controlled experimentation space where AI tools can be tested under institutional oversight, in collaboration with universities. The protocol sets four explicit objectives: creating a normative framework for AI use in the justice system, ensuring the protection of fundamental rights and nondiscrimination, promoting transparency and accountability, and fostering continuous training for judicial officials.[25]

Jujuy does not operate in a vacuum. Judicial authorities in Río Negro, Santa Fe, San Juan, San Luis, and the City of Buenos Aires have adopted protocols for the ethical use of generative AI in their respective judicial systems, all with a strict prohibition on delegating decision-making to automated systems.[26] The Buenos Aires Bar Association has likewise published guidance for practitioners. These subnational initiatives coexist with a national Congress where, as of this writing, at least nine bills are under consideration proposing risk-based regulatory frameworks, national AI system registries, and mandatory impact assessments.[27]

Provincial sandboxes drive innovation by enabling experimentation with real legal consequences without waiting for the approval of a national regulatory framework—which, under the central government's position, should not materialize. This approach to decentralized governance produces a distributed laboratory effect: each province documents its experiences, identifies risks, and

develops replicable practices that could inform eventual federal legislation or, failing that, consolidate as a de facto standard. The collaboration with universities, moreover, ensures that learning is not confined to the judiciary but extends to the local research and development (R&D) ecosystem.

PROMETEA, Mass Adoption, and the Talent Base: The Ecosystem Sustaining the Bet

In 2017, the Prosecutor General's Office of the City of Buenos Aires deployed PROMETEA, an AI system trained on 300,000 scanned judicial documents and 2,000 prior rulings. Developed by ZTZ Tech Group, the system automates approximately 50 percent of the prosecutors' ordinary workload and predicts judicial outcomes with 96 percent accuracy in under 20 seconds.[28] The numbers speak for themselves: resolution times for cases requiring trials dropped from 167 to 38 days—a 77 percent reduction—and processing capacity rose from 130 to 490 cases per month, while overall productivity of the Prosecutor's Office increased by nearly 300 percent.[29]

PROMETEA has transcended Argentina's borders: it was implemented at the Inter-American Court of Human Rights and at the Buenos Aires Civil Registry. More recently, the Prosecutor's Office began complementing it with ChatGPT for case law analysis, reducing the time to draft a ruling from one hour to roughly ten minutes.[30] The case demonstrates something that public innovation manuals seldom admit candidly: that digital transformation does not require multimillion-dollar budgets if institutional will and technical talent are available. According to a study cited by The Register, the first version of PROMETEA cost just 33,000 Argentine pesos—approximately $500 at the time's exchange rate—compared to the $100,000 budgeted by IBM, Accenture, and Oracle for an equivalent system.[31]

That capacity to do more with less is embedded within a broader ecosystem. Argentina records the highest daily ChatGPT usage rate among the 6 countries included in a 2025 comparative study comprising the United States, the United Kingdom, France, Denmark, Japan, and Argentina - with 25 percent of its users accessing the platform daily, and adoption more than tripling throughout 2025, particularly among users aged 18 to 34.[32] Buenos Aires, La Plata, Córdoba, and Tucumán serve as research hubs for machine learning and automation, and the country has hosted international AI and robotics conferences throughout 2025 and 2026. The combination of mass users, experienced developers, and successful institutional use cases creates a virtuous cycle: demand generates a market for developers, developers reduce implementation costs for businesses and governments, and successful cases produce replicable evidence that facilitates technology diffusion.

Argentina does not possess the research budget of the United States or the regulatory density of the EU. What it offers is something different and, for certain actors, more valuable: a government that has explicitly decided not to stand in the way, a fiscal regime that guarantees stability for three decades, underutilized energy infrastructure in one of the most suitable regions on the planet for data centers, and a population that adopted AI at a speed that surprised even the technology's own providers. The wager is ambitious, and its risks—political, energetic, regulatory—are real. But the starting point is no longer an aspiration: it is a set of verifiable public policies that, if sustained over time, could turn Argentina into what Reidel promised the *Financial Times*: the world's fourth AI hub.

AUSTRALIA

The Institute for Policy Advocacy, and Governance (IPAG), By Syed Munir Khasru

The National AI Plan 2025: Shaping Australia's AI Future

AI has steadily moved from the margins of policy debate to the center of economic and public-sector reform, and Australia marked this shift formally with the launch of its National AI Plan in 2025. The plan set out a clear narrative: first, to harness AI as a source of economic growth; second, to ensure those gains flow widely through workforce upskilling, business adoption, and improved government services; and third, to manage emerging risks through responsible, values-based regulation.[33]

Throughout, the government framed AI as a shared national opportunity, underpinned by an emphasis on ensuring AI-driven benefits reach workers, SMEs, and users of public services.[34] To carry this vision forward, the plan turned to investment in AI infrastructure, skills, and innovation, guided by a light-touch, trust-based governance approach. As the plan unfolded, the absence of clear timelines, defined delivery mechanisms, and measurable targets introduced uncertainty around implementation and regulatory certainty.[35] The plan ultimately pointed toward an inclusive and forward-looking AI future for Australia, while the practical work of implementation awaits.

Australia's National AI Plan 2025 sets out a strong narrative around AI-driven growth, inclusive benefits for workers and SMEs, and values-based regulation, effectively reframing AI as a shared national opportunity. However, the Plan's main weakness lies in its implementation architecture: the absence of detailed timelines, delivery responsibilities, funding instruments, and measurable targets reduces regulatory certainty and makes it harder for investors, agencies, and educators to plan. The described "light-touch, trust-based" governance model also remains somewhat abstract without a clearly articulated, risk-tiered regulatory toolbox.

The Plan would be strengthened by a time-bound implementation roadmap with named lead agencies, annual milestones, budget envelopes, and indicators such as SME AI adoption, AI-enabled public-service pilots, and skills outcomes, overseen by a dedicated delivery unit able to coordinate horizontally across government. Embedding a standing multi-stakeholder advisory body—bringing together unions, SMEs, civil society, and academia—would help monitor distributional impacts and maintain trust while a tiered, risk-based framework for AI systems would reduce uncertainty for businesses and align Australia more closely with emerging international practice.

Balancing Innovation and Security: Australia's Response to DeepSeek

In early February 2025, the Australian government implemented a precautionary ban on the use of the AI chatbot DeepSeek across all government devices and information systems. The move came amid DeepSeek's rapid global rise as a low-cost alternative to ChatGPT, drawing the attention of policymakers and cybersecurity officials worldwide. The government stressed that the restriction was driven by risk considerations rather than the application's origin. Subsequent briefings and expert reviews drew attention to extensive data collection, elevated permissions, and sensitive data inference.[36] In response, agencies were instructed to uninstall the application immediately and block access at the network level through mandatory system controls.[37]

These were intended to prevent any transfer of government data beyond Australia's legal and technical oversight. Taken together, this initiative placed Australia within a broader international pattern of regulatory caution. Governments in Italy, South Korea, Taiwan, and multiple other European jurisdictions have also moved to scrutinize or restrict emerging AI tools on precautionary national security grounds.[38]

Australia's precautionary ban on the DeepSeek chatbot across government devices reflects emphasis on data security and sovereignty at a time when large language models remain opaque and rapidly evolving. Yet, because the decision is framed almost entirely as a restriction, it offers limited clarity on the underlying risk-assessment criteria, on how decisions can be reviewed, or on how vendors might adapt to comply, which risks projecting a defensive stance that could dampen experimentation with competitive open models in the public sector.

It would be valuable to publish a transparent risk-classification framework for third-party AI tools, mapping specific concerns—such as data exfiltration, logging practices, or training-data reuse—to clear thresholds, and to pair bans with secure sandboxes where agencies can test models under tight technical controls. Regular, time-bound reviews of restrictions, with defined conditions for lifting them when providers demonstrably meet security and privacy standards, would convert a one-off prohibition into a dynamic governance mechanism that both protects sensitive data and stimulates a domestic public-sector AI ecosystem.

Amazon's AU$20 Billion Commitment to Australia's AI Infrastructure

Amazon unveiled a landmark long-term investment of AU$20 billion from 2025 to 2029 to expand, operate, and maintain its data-center infrastructure across Australia, marking the largest technology investment by a global company in the country's history. The move followed accelerating adoption of generative AI and cloud services by businesses, start-ups, and government agencies, which began to strain existing computing capacity.[39] To meet this demand, Amazon Web Services (AWS) expanded its data-center operations in Sydney and Melbourne, reinforcing national digital capability.

Growing energy needs shaped the next phase, prompting Amazon to back three new solar farms in Victoria and Queensland to power its facilities. Alongside infrastructure, AWS advanced AI training and accelerator programs, positioning the investment to deliver skilled jobs, resilient infrastructure, and broader access to advanced cloud and AI platforms.[40] Overall, the expansion was expected to generate skilled employment, enhance digital resilience, and expand access to advanced cloud and AI technologies.

Amazon's AU$20 billion investment in Australian data-center infrastructure significantly enhances the country's cloud and AI compute capacity, reinforces digital resilience, and is sensibly paired with green energy projects and AI-skills and accelerator programs. At the same time, the strategy introduces concentration risk by deepening reliance on a single global provider for critical AI infrastructure and leaves the link to domestic AI R&D, start-ups, and public-interest use cases somewhat underdeveloped.

Policymakers could leverage this investment by negotiating explicit public-benefit commitments, such as reserved capacity for essential public services, preferential access terms for research institutions, and strong interoperability and data-portability guarantees. Coupling the expansion with a broader sovereign AI-infrastructure agenda that supports diversified providers, including

local clouds and open-source stacks, would mitigate dependence, while outcome-based reporting on job quality, regional spillovers, and skills transfer would help ensure that the investment accelerates progress toward the National AI Plan's objectives rather than remaining a predominantly commercial initiative.

FSO & Microsoft Launched National AI Skills Accelerator for Australia's VET Sector

The Future Skills Organization (FSO), working in partnership with Microsoft, launched the FSO Skills Accelerator–AI as a response to growing concerns about Australia's preparedness for an AI-driven economy. With the Vocational Education and Training (VET) system already supporting more than five million learners each year, the initiative positioned vocational education as a central pathway for developing future-ready skills.[41]

The program began as a 12-month pilot, designed to bring industry and training providers together to co-design practical AI learning resources, exchange best practices, and develop training content aligned with real workplace needs. Alongside this collaboration, the pilot encouraged peer learning and tested scalable delivery models to ensure consistency across the country. A wide range of stakeholders, including TAFE institutes, financial institutions, technology firms, and peak bodies, joined the effort, reflecting strong cross-sector support. By targeting more than 30,000 VET educators and administrators, the initiative aimed to reduce Australia's AI skills gap, strengthen workforce readiness, and better align training outcomes with labor market demand.[42]

The FSO–Microsoft National AI Skills Accelerator for the VET sector is an innovative response to concerns about Australia's readiness for an AI-driven economy, using the scale and reach of the VET system and emphasizing co-design with industry, peer learning, and alignment with real workplace needs. Its ambition to reach more than 30,000 educators and administrators positions vocational education as a central channel for AI diffusion, but the program is less explicit about how success will be measured beyond basic participation and how it will avoid over-dependence on a single vendor's platforms.

The initiative would benefit from a clearly defined competency framework for "AI-ready" VET educators that includes pedagogical prompt use, AI-assisted assessment, data ethics, and basic machine-learning literacy, against which changes in practice can be tracked. Ensuring that learning resources remain as tool-agnostic as possible and are openly licensed, while adding longitudinal evaluations that follow learner outcomes into the labor market and diversifying partnerships to include other technology providers and local AI firms, would make the accelerator more resilient, portable, and system-wide in its impact.

Accelerate Advanced Manufacturing Activity

Strategic Co-investment for High-Value Manufacturing

Australia's economic resilience is evidenced by a projected "soft landing" despite global uncertainty and moderated growth from higher interest rates. Australia's economic resilience is abetted by the "Future Made in Australia" (FMIA) national industrial policy, which aims to rebuild high-value manufacturing and capture net-zero transition opportunities.[43] This advanced manufacturing policy is defined by a shift from conventional grants to a focus on commercial viability and high-tech market signaling underpinned by the $15 billion AUD National Reconstruction Fund (NRF), a sovereign fund that acts as a patient capital provider offering loans and equity rather than grants to crowd in private investment for commercially viable high-return

business cases.[44] This shift reflects a strategic government decision to transition from the short-term stimulus of traditional grant funding to a long-term, self-sustaining investment model, ensuring public funds are leveraged effectively to unlock a multiple of private capital. The NRF's design mandates rigorous due diligence, mirroring private venture capital processes, forcing manufacturers to present robust, scalable business models rather than relying solely on R&D potential. While direct capital deployment from the NRF is still in the due-diligence-heavy start-up phase, its establishment has successfully signaled clear market priorities, including defense and medical tech, and the leveraging of Australia's substantial reserves of clean energy metals and critical minerals, which are projected to generate over $50 billion in exports.

This strategic signaling is necessary for attracting the necessary private "crowding-in" effects, particularly for capital-intensive, advanced manufacturing projects that struggle to secure conventional bank financing due to long payback periods or perceived technology risk. The focus on critical minerals is especially important, positioning Australia as a key player in the global battery and clean energy supply chains by moving beyond raw extraction into value-added processing and component manufacturing, which directly contributes to the net-zero transition goal.[45] Complementing the NRF is the Industry Growth Program (IGP), which has deployed AUD $143 million via 96 grants primarily aimed at scaling up existing innovations (Technology Readiness Levels (TRLs) 7–9) and bolstering technology diffusion for innovative SMEs.[46] This program is deliberately focused on the commercialization end of the innovation pipeline, ensuring that promising research is translated into viable, market-ready products. The IGP's requirement for mandatory pre-funding advisory services further ensures high-quality investment by prioritizing companies ready for commercialization, thereby strengthening the overall digital capability of the supply chain alongside initiatives such as Adopt AI Centers.

The broader FMIA strategy recognizes that industrial revitalization must be matched by workforce development. The Manufacturing Industry Skills Alliance is proactively addressing the persistent skills gap by focusing on rapid, targeted micro-credentials in high-demand areas like Cobot Integration and Digital Twin Modeling, ensuring the workforce evolves at the pace of technological adoption.[47] This focus on skills is vital for maximizing the return on investment from advanced manufacturing technologies, as sophisticated machinery requires highly specialized technicians and engineers. Furthermore, the economic ambition is taking place against the backdrop of persistent domestic challenges: underlying inflation, while easing through 2025, has persisted in areas such as high-density housing and market services, which will continue to place pressure on household budgets and complicate the Reserve Bank of Australia's path to reducing policy rates.[48] Counterbalancing this economic ambition is the profound environmental challenge posed by climate change, the single greatest threat to the Great Barrier Reef (GBR).[49] This existential risk threatens biodiversity, regional jobs, and a cornerstone of national identity, reinforcing the urgency of the net-zero industrial pivot at the heart of the FMIA policy. The successful execution of this dual economic and environmental strategy depends on the integrated deployment of patient capital, targeted grants for commercialization, and rapid skills training to solidify Australia's position in the global high-value and sustainable manufacturing landscape.

Australia's FMIA strategy, together with the NRF, the IGP, and AI adoption and skills initiatives, presents a coherent policy mix that links patient capital, commercialization support, and rapid micro-credentialing to an AI-enabled, high-value industrial base. The focus on critical minerals and net-zero value chains is strategically sound, yet the specific ways in which AI—through digital

twins, predictive maintenance, or supply-chain optimization—is to be mainstreamed across firms and sectors are not always made explicit. As the NRF and IGP move beyond signaling into larger-scale disbursement, a dedicated focus on AI in manufacturing, with tailored funding windows and transparent case studies, could accelerate adoption and learning. Publishing an annual scorecard on AI uptake in manufacturing, including SME participation and emissions reductions, and closely tying skills micro-credentials to actual plant deployments and vendor technologies through co-design with firms would help align capital, capability, and technology in a way that reaches beyond a small number of front-running companies.

BANGLADESH

The Institute for Policy Advocacy, and Governance (IPAG), By Syed Munir Khasru

KrishokBondhu (Farmer's Friend): Delivering Context-Aware Agricultural Advice to Farmers Via AI Voice Technology

KrishokBondhu was introduced as an AI-powered, voice-based agricultural advisory system designed to assist Bengali-speaking farmers in Bangladesh via a simple phone call interface. The development followed a practical need: many farmers lacked access to smartphones or written digital platforms but still required timely, reliable advice. To address this gap, the system was built using Retrieval-Augmented Generation (RAG), which first retrieved information from trusted agricultural sources including government manuals, extension publications, and NGO materials before generating accurate responses in natural-spoken language Bengali. It was then tested in a pilot evaluation that included a range of questions on crop management and disease control.

In that assessment, KrishokBondhu produced high-quality responses in 72.7 percent of cases and outperformed the KisanQRS benchmark, achieving a score of 4.53 compared to 3.13 on a 5-point quality scale. Rather than offering short instructions, the system explained underlying problems, suggested preventive measures, outlined clear action steps, and advised when expert support was needed, supporting farmer understanding. However, the evaluation also highlighted limitations, including the lack of live data integration, partial coverage of newer crop varieties, and reliance on expert judgment due to limited Bengali evaluation benchmarks.[50]

KrishokBondhu stands out as a context-aware innovation that aligns closely with local constraints by offering AI-powered, voice-based agricultural advice over basic phone calls, using RAG to draw from trusted manuals and extension publications, and achieving strong response quality relative to benchmarks. Its design addresses both device access and literacy barriers and provides explanatory, step-based guidance rather than terse instructions, which supports farmer understanding. The main limitations—lack of live data integration, incomplete coverage of newer crop varieties, and dependence on expert judgment due to limited Bengali evaluation benchmarks—constrain its potential to become a truly real-time decision support system.

To evolve further, KrishokBondhu could integrate real time weather, pest, and market price feeds, build a formal content update pipeline with agricultural research institutions, and support the creation of open Bengali evaluation datasets; in parallel, expanding modalities to include SMS summaries and dashboards for extension officers and embedding the tool within government advisory services would turn it into a first line triage layer with clear pathways to human experts.

Bridging the Digital Health Divide: Amardoctor (My Doctor) as an AI-Enabled Primary Care Triage System

AmarDoctor emerged from efforts to address long-standing gaps in primary health care access across Bangladesh and other low-resource South Asian settings. The project took shape as an AI-driven, voice-interactive health platform for early triage, built on a knowledge graph derived from 1.4 million anonymized clinic records covering diseases, symptoms, drugs, and medical procedures. To mirror real patient speech, the symptom database incorporated thousands of Bengali linguistic variations across major dialects.

Building on this linguistic foundation, patients described their symptoms through voice in Bengali dialects or English, while adaptive AI questioning gradually refined the information and guided them toward appropriate medical specialties, easing literacy-related barriers. At the same time, the platform supported physicians by translating patient inputs into provisional diagnoses with confidence scores, generating automated SOAP (Subjective • Objective • Assessment • Plan) notes, and suggesting relevant tests and medications. It was revealed that AmarDoctor achieved higher diagnostic and specialty-recommendation accuracy than physicians in comparable settings. However, the system intentionally excluded complex cases, reinforcing its role as a safe triage and decision-support tool rather than a substitute for clinical care.[51]

AmarDoctor leverages AI to bridge gaps in primary health care by combining a large symptom and disease knowledge graph with dialect-sensitive voice interaction, enabling patients to describe complaints in Bengali dialects or English while an adaptive questioning engine refines information and guides users to appropriate specialties. Early evidence that the system outperforms physicians in diagnostic and specialty-recommendation accuracy in comparable settings is promising, and the generation of confidence-scored provisional diagnoses, SOAP notes, and test and medication suggestions provides valuable support for clinicians. Its deliberate exclusion of complex cases shows a strong safety culture but also underscores the need for clear user education and for robust governance structures that monitor misclassification risks, bias, and evolving clinical standards.

AmarDoctor's next phase should center on embedding it into national digital health infrastructure via standardized Application Programing Interfaces (APIs) and data-protection protocols, formalizing oversight through a multidisciplinary governance board, investing in public awareness of its scope and limits, and expanding into preventive and chronic-disease pathways while rigorously evaluating cost-effectiveness to inform sustainable scale-up.

From Readiness to Action: Bangladesh's First National Assessment of AI Governance

Bangladesh marked a major step in its digital journey with the release of its first National Artificial Intelligence Readiness Assessment (RAM) Report, signaling a shift toward ethical, inclusive, and human-centered AI governance. The report reviewed the national AI landscape and assessed institutional capacity, legal and regulatory frameworks, and the country's social, educational, technical, and infrastructural readiness for AI adoption. It further examined governance mechanisms, cultural preparedness, scientific resources, and digital infrastructure.

Based on these findings, the report presented a national AI roadmap that stressed collaboration among government, academia, industry, and civil society. It highlighted priorities such as strengthening data protection and cybersecurity, expanding access to quality datasets in Bangla and minority languages, and advancing AI education and skills, while emphasizing greater

participation of girls and women. Overall, the report provided a strong foundation for evidence-based AI policy development in Bangladesh.[52]

Bangladesh's first National AI Readiness Assessment marks a pivotal shift from ad hoc digital initiatives toward a more systemic, evidence-based approach to AI governance, providing a structured view of institutional capacity, legal frameworks, infrastructure, skills, and social preparedness and clearly emphasizing ethical, human centered, and gender inclusive AI. As with many baseline assessments, the principal challenge is not diagnosis but execution: without prioritized, sequenced, and funded actions with clear institutional ownership, the roadmap risks remaining aspirational.

To translate readiness into impact, Bangladesh would benefit from condensing the RAM's broad recommendations into a focused multiyear action plan anchored in a small set of flagship programs, such as a Bangla and minority language data commons, public sector AI labs, and domain-specific demonstrators in agriculture and health, under the stewardship of a high-level AI coordination body. Strengthening foundational enablers such as data protection and cybersecurity law, while funding the creation and sharing of high-quality local-language datasets, would give firms and public agencies the regulatory certainty and inputs needed to experiment responsibly.

Bangladesh at the AI Crossroads: Adoption, Skills, and Ethical Concerns

AI increasingly shaped Bangladesh's economic and professional landscape, unfolding as a story of rapid adoption alongside growing unease. Large corporations led the early shift when Unilever Bangladesh, working with partners such as Microsoft and Accenture, introduced AI co-pilots and personalized learning platforms to streamline decisions and raise productivity. Momentum soon spread to finance, where Buckyy Payment Solutions Limited developed Rini AI, a machine-learning-based credit-scoring engine that improved how borrower creditworthiness was assessed. As these tools gained ground, underlying challenges became more visible. A widening digital skills gap, especially among young entrants and older workers, raised concerns about unequal access to AI's benefits and reinforced calls for gradual integration into education and workplaces.

At the same time, freelancers and creative professionals reported declining demand for tasks increasingly handled by AI, such as content creation and graphic design, prompting ethical questions about originality and credit. Experts consistently stressed the need for clear usage policies, transparency, and continuous upskilling, noting that human judgment, creativity, and contextual understanding remained essential for responsible and sustainable AI adoption in Bangladesh.[53]

The emerging AI adoption landscape in Bangladesh's private sector—illustrated by Unilever Bangladesh's use of AI copilots and personalized learning platforms and by Rini AI's machine-learning-based credit scoring engine—demonstrates that large corporates and fintechs are beginning to integrate AI into core decision processes. At the same time, reports of a widening digital skills gap and declining demand for certain freelance tasks such as content creation and graphic design reveal early signs of uneven benefits and potential labor displacement, which can undermine public trust and exacerbate inequality if left unaddressed.

These developments highlight the need for stronger governance around algorithmic transparency and fairness, particularly in credit scoring, and for proactive labor-market policies that focus on upskilling and role redesign rather than passive adjustment. Bangladesh could respond by issuing

sector-specific AI guidelines for corporate and financial users, encouraging firms to invest in continuous training through targeted incentives, and establishing shared "AI Skills and Transition Labs" where freelancers and SMEs can access re-skilling opportunities and advisory support, while major adopters publicly document human-in-the-loop practices and worker consultation to set norms for responsible deployment.

Accelerate Advanced Manufacturing Activity

Bangladesh, a "development superstar" propelled by the ready-made garment (RMG) sector—which still accounts for over 80 percent of total exports—is now navigating a complex industrial and macroeconomic transition.[54] The nation is currently facing significant headwinds, including a sharp deceleration of GDP growth, with World Bank projections subdued at 3.3 percent for the fiscal year 2025, coupled with persistently high inflation, estimated to average around 10.2 percent.[55] This high inflation, along with currency depreciation, is placing severe pressure on the costs of imported manufacturing inputs and domestic investment, directly challenging the country's ambitious modernization goals.[56]

To counter these pressures and sustain global competitiveness, the core RMG sector is executing a strategic shift. This dual strategy involves internal reforms and diversification, moving beyond basic cotton goods toward higher-value products such as technical wear, fusion fashion, and man-made fibers to mitigate risks associated with market saturation and declining marginal revenue. This industrial upgrade is explicitly backed by key government policies, including the National Industrial Policy (NIP) 2022 and the National Strategy for Robotics, which portray a clear vision: to strategically "blend labor advantage with robotics" to upgrade production quality and efficiency while managing the transformation of the workforce.[57]

The government's primary method for attracting this advanced manufacturing particularly through foreign direct investment (FDI) is characterized by strong tax and infrastructure incentives concentrated within controlled zones. The High-Tech Park Authority (BHTPA) successfully leverages a 10-year tax holiday and duty-free import of capital machinery to attract global electronics giants for assembly operations, significantly reducing the nation's import dependence for finished goods.[58] However, this success has inadvertently created a "dual economy" problem. While modernization thrives in these isolated parks, the vast majority of local SMEs outside these parks struggle with outdated technology, limited access to finance, and bureaucratic hurdles, creating a growing inequality between the modern and traditional sectors.[59]

A key challenge for the national transition to Industry 4.0 is the implementation gap in the NIP 2022, which targets a 40 percent share of industry in GDP.[60] Implementation is stalled because key regulatory bodies, such as the National Board of Revenue (NBR), have not yet codified the promised tax incentives designed to encourage automation and technological upgrades across the wider industrial base. Furthermore, efforts to bridge the skills gap, critical to the adoption of fourth industrial revolution (4IR) technologies, are still in development. The Skills for Industry Competitiveness and Innovation Program (SICIP), a $375 million USD initiative, and the larger Skills for Employment Investment Program (SEIP) aim to rapidly build the necessary skilled technician and operator roles.[61] While training programs are active, for example, SICIP training over 39,000 workers, the relatively low placement rate around 51 percent in advanced sectors highlights that the immediate industrial demand for certified, high-tech labor is still maturing.[62]

Finally, these industrial growth ambitions face a fundamental and escalating challenge from acute climate vulnerability. Salinity intrusion, exacerbated by rising sea levels, is a major environmental threat, projected to increase soil salinity by a median of 26 percent in vulnerable coastal areas by 2050.[63] This environmental degradation is causing substantial losses in agricultural revenue estimated at 21 percent for affected farms and is forcing the displacement of an estimated 200,000 coastal farmers. This phenomenon is transforming a local ecological problem into a crisis of internal migration, swelling the urban labor pool and exacerbating economic inequality, and placing long-term pressure on the nation's development trajectory as it attempts to move up the manufacturing value chain.

At the industrial level, Bangladesh's efforts to navigate macroeconomic headwinds and a 4IR transition through the National Industrial Policy 2022, the National Strategy for Robotics, the High-Tech Park Authority, and large-scale skills programs such as SICIP and SEIP reflect an ambitious vision to "blend labor advantage with robotics" and move up the manufacturing value chain. High-tech parks and generous tax and import incentives have successfully attracted global electronics manufacturers for assembly, reducing import dependence, but have also contributed to a dual economy in which enclave modernization coexists with a broad base of SMEs struggling with outdated technology, financing constraints, and bureaucratic hurdles. Implementation gaps—for example, delays in codifying NIP 2022's tax incentives for automation—further slow diffusion, while relatively low placement rates for workers trained under advanced skills programs suggest either misalignment between training content and firm demand or slow adoption among firms.

Addressing these issues will require accelerating the practical rollout of automation and AI-related incentives beyond special zones, creating dedicated SME digital upgrade windows that blend finance with technical assistance, tying a portion of high-tech park incentives to local capability building and joint R&D, and redesigning skills programs through closer co-ownership by anchor firms so that curricula reflect real technology stacks and are matched with stronger placement commitments, all while integrating climate-resilience and green-manufacturing elements given the country's acute environmental vulnerabilities.

BOSNIA AND HERZEGOVINA

Center of Excellence for Evaluation and Policy Research, By Amila Pilav-Velic

Introduction

AI has rapidly evolved from a specialized technological field into a transformative general-purpose technology with significant implications for economic development, public administration, health care, education, and industrial competitiveness. Governments worldwide increasingly recognize that the benefits of AI cannot be fully realized without appropriate policy frameworks that balance innovation, economic growth, human rights protection, transparency, and accountability. Consequently, numerous countries and international organizations have adopted dedicated AI strategies, governance frameworks, and regulatory instruments aimed at guiding the responsible development and deployment of AI technologies.[64]

Within Europe, the adoption of the EU Artificial Intelligence Act represents a major milestone in establishing a risk-based governance model that seeks to encourage innovation while safeguarding fundamental rights and public interests.[65] Similarly, the Council of Europe's Framework

Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law reflects growing international consensus that AI governance should be grounded in democratic values, human dignity, transparency, and accountability.[66]

Despite these global developments, Bosnia and Herzegovina currently lacks a comprehensive national AI policy, strategy, or regulatory framework specifically addressing AI governance and innovation. Existing digital transformation efforts remain fragmented across multiple levels of government, while key enabling conditions such as interoperability, cybersecurity coordination, data governance, and innovation support mechanisms remain insufficiently developed.[67] The absence of a coherent AI policy creates uncertainty for public institutions, businesses, researchers, and citizens regarding the responsible adoption and use of AI technologies.

This paper argues that Bosnia and Herzegovina urgently requires a national AI policy framework and identifies priority sectors in which such a policy would have the greatest strategic value. Particular attention is given to public administration, education, health care, business development, and data governance, as these areas represent both significant opportunities and substantial governance challenges.

Why Bosnia and Herzegovina Needs an AI Policy

The development of a dedicated AI policy has become increasingly important because AI raises issues that extend beyond traditional information technology governance. Unlike conventional digital technologies, AI systems can autonomously generate content, support decision-making processes, influence human behavior, and process vast quantities of personal and nonpersonal data. As a result, their deployment creates complex questions related to ethics, accountability, transparency, privacy protection, discrimination, cybersecurity, and public trust.[68]

For Bosnia and Herzegovina, the absence of a national AI policy presents several challenges. First, organizations and public institutions lack clear guidance regarding acceptable and responsible uses of AI technologies. Without established principles and standards, AI adoption may occur inconsistently across sectors, creating legal uncertainty and increasing the risk of misuse.

Second, Bosnia and Herzegovina faces significant structural challenges in digital governance. According to the European Commission (2024), the country lacks a coordinated approach to digital transformation, a comprehensive open-data policy, and effective interoperability between public institutions. These deficiencies directly affect the capacity to implement AI systems safely and efficiently. AI relies heavily on data availability, quality, and governance mechanisms; therefore, weaknesses in digital infrastructure and institutional coordination become critical barriers to successful implementation.

Third, the absence of AI governance may undermine citizens' trust in emerging technologies. Public acceptance of AI depends largely on confidence that systems operate transparently, fairly, and under meaningful human oversight. International experience demonstrates that public trust is strengthened when governments establish clear standards for accountability, explainability, and protection of fundamental rights.[69]

Finally, AI policy is necessary not only as a regulatory instrument but also as a tool for economic development. AI technologies have the potential to improve productivity, stimulate innovation, enhance public service delivery, and strengthen the competitiveness of domestic enterprises.

Without a strategic framework that supports AI adoption, Bosnia and Herzegovina risks falling behind regional and European digital transformation processes.[70]

Consequently, a national AI policy should be viewed as an enabling framework that simultaneously promotes innovation, protects citizens, and provides strategic direction for the country's digital future.

Priority Areas for AI Policy In Bosnia And Herzegovina

Public Administration

Public administration represents one of the most important areas for AI policy development in Bosnia and Herzegovina (the public sector remains the country's largest employer). The modernization of public services remains a strategic challenge due to administrative fragmentation (a complex constitutional and institutional structure), limited interoperability among institutions, and relatively modest use of e-government services.[71]

AI has considerable potential to improve administrative efficiency through automation of routine tasks, document processing, citizen support services, and decision-support systems. AI-powered chatbots, virtual assistants, and intelligent workflow systems can reduce administrative burdens while improving accessibility and responsiveness of public services.

However, public-sector applications of AI also require robust governance mechanisms. Automated systems that support decision-making processes in areas such as social services, taxation, employment, or regulatory oversight may significantly affect citizens' rights and opportunities. Consequently, an AI policy should establish requirements for transparency, human oversight, explainability, accountability, and procedural safeguards whenever AI is used within public administration.

Particular attention should be devoted to preventing fully automated decisions in areas where outcomes may substantially affect individuals. Meaningful human review should remain a central principle of public-sector AI deployment, consistent with emerging European governance standards.[72]

Education

The education sector represents another priority area requiring comprehensive AI policy guidance. Generative AI technologies have already begun transforming teaching, learning, assessment, and research practices in higher education and schools worldwide. While these technologies create new opportunities for personalized learning and educational innovation, they also introduce significant challenges related to academic integrity, digital literacy, and ethical use.

Bosnia and Herzegovina faces persistent challenges regarding alignment between educational outcomes and labor market needs, making AI-related skills increasingly important for future workforce development.[73] A national AI policy should therefore support the integration of AI literacy into educational curricula at all levels.

Policy measures should address several dimensions. First, educational institutions require clear guidelines regarding acceptable uses of generative AI tools in teaching, learning, and assessment. Second, teachers and academic staff need professional development opportunities that enable them to use AI effectively and responsibly. Third, students should acquire competencies related

not only to AI applications but also to critical thinking, ethics, data literacy, and responsible digital citizenship.

Beyond classroom applications, AI policy should also encourage research and innovation within universities by supporting interdisciplinary collaboration among computer scientists, social scientists, legal scholars, health care researchers, and business experts. Universities are likely to play a crucial role in developing domestic AI expertise and supporting evidence-based policymaking.

Health Care

Health care represents one of the sectors where AI could generate significant societal benefits in Bosnia and Herzegovina. At the same time, it requires particularly careful governance due to the potential impact of AI-supported decisions on patient safety, health outcomes, and fundamental rights.

The health care system in Bosnia and Herzegovina faces several structural challenges, including administrative fragmentation across multiple levels of government, shortages of medical personnel, population aging, and limited interoperability between health care information systems.[74] These challenges often result in inefficiencies, uneven access to health care services, and difficulties in sharing medical information across institutions.

AI offers important opportunities to address some of these challenges. AI applications can support medical diagnostics, predictive analytics, disease surveillance, clinical decision-making, and resource allocation. AI-powered tools may assist health care professionals in identifying treatment options, assessing risks, and managing large volumes of medical information. Such solutions could be particularly valuable in areas with limited access to specialist care and in addressing growing workforce shortages caused by the emigration of health care professionals.

AI may also improve administrative efficiency by automating routine documentation and reporting tasks, allowing health care workers to devote more time to patient care. In addition, AI-supported telemedicine solutions could help reduce disparities in health care access between urban and rural areas.

However, health care AI also introduces significant risks related to data quality, algorithmic bias, transparency, cybersecurity, and accountability. A national AI policy should therefore establish requirements for clinical validation, risk assessment, data protection, and ongoing monitoring of AI systems. Health care professionals should remain responsible for final clinical decisions, while AI should function primarily as a decision-support tool.

Given the fragmented nature of health care governance in Bosnia and Herzegovina, future AI policy should also promote greater interoperability of health care information systems and support the secure and ethical use of health data for innovation and research.

Business Development and Innovation

For Bosnia and Herzegovina, where SMEs dominate the business landscape, AI policy should focus on enabling adoption rather than imposing unnecessary regulatory burdens. Many enterprises currently lack the financial resources, technical expertise, and organizational capacity necessary to implement advanced AI solutions independently.

Therefore, a national AI policy should include measures that support business innovation through capacity building, access to expertise, collaborative research initiatives, innovation hubs, and financial incentives for digital transformation. Special attention should be devoted to supporting start-ups and technology-driven enterprises that can contribute to the development of domestic AI ecosystems.

Additionally, policy frameworks should encourage partnerships between universities, research institutions, and private-sector organizations. Such collaboration can facilitate knowledge transfer, stimulate applied research, and strengthen the country's innovation capacity.

Rather than focusing solely on compliance and risk mitigation, AI policy should actively promote innovation and entrepreneurship while ensuring responsible deployment of emerging technologies.

Data Protection and Cybersecurity

The European Commission (2024) has repeatedly highlighted the need for stronger data governance frameworks, improved interoperability, and enhanced cybersecurity coordination within Bosnia and Herzegovina. These issues become even more significant in the context of AI deployment.

A national AI policy should establish principles for lawful data collection, processing, sharing, and storage while ensuring protection of privacy and fundamental rights. Transparency regarding data sources, purposes of processing, and algorithmic decision-making should be promoted as core governance principles.

Cybersecurity considerations are equally important because AI systems may become targets of manipulation, adversarial attacks, data breaches, and other security threats. Consequently, AI governance should incorporate security-by-design and privacy-by-design approaches throughout the lifecycle of AI systems.

Furthermore, Bosnia and Herzegovina should align future AI governance efforts with European data protection standards and emerging international best practices to facilitate cross-border cooperation, innovation, and regulatory compatibility.

Recommendations for the Development of an AI Policy in Bosnia and Herzegovina

Based on the identified priorities, a future national AI policy should be guided by several fundamental principles.

First, the policy should adopt a risk-based approach that differentiates between low-risk and high-risk AI applications. Regulatory requirements should be proportionate to potential risks while avoiding unnecessary barriers to innovation.

Second, transparency and accountability should be established as core governance principles. Organizations deploying AI systems should be able to explain their use of AI and demonstrate compliance with relevant standards and safeguards.

Third, meaningful human oversight should remain a central requirement, particularly in sectors where AI-supported decisions may significantly affect individuals.

Fourth, the policy should support innovation through research funding, public-private partnerships, start-up support mechanisms, and collaboration between academia and industry.

Finally, AI literacy and capacity-building initiatives should be integrated into education, public administration, and workforce development programs to ensure that citizens and organizations can effectively benefit from emerging technologies.

Conclusion

AI is becoming a fundamental driver of economic transformation, public-sector modernization, and societal development. While many countries have already established comprehensive governance frameworks to guide AI adoption, Bosnia and Herzegovina currently lacks a dedicated national AI policy capable of providing strategic direction and regulatory certainty.

The absence of such a framework represents a growing challenge as AI technologies become increasingly integrated into public services, educational institutions, health care systems, and business operations. A coherent national policy is therefore necessary to balance innovation, competitiveness, and technological development with transparency, accountability, privacy protection, and human rights safeguards.

Among the various sectors and areas affected by AI, public administration, education, health care, business development, and data governance are the most important priorities for policy intervention. These areas combine significant opportunities for innovation with substantial governance responsibilities and societal impacts.

Developing a national AI policy focused on these strategic domains would not only support responsible AI adoption but also contribute to broader goals of digital transformation, economic competitiveness, and European integration. Such a policy should therefore be considered an essential component of Bosnia and Herzegovina's future development agenda.

BRAZIL

Centro Mackenzie de Liberdade Econômica, By Vladimir Fernandes Maciel

Brazil is moving from a principles-based AI agenda toward a more operational innovation strategy. Its current approach combines data-protection rules, a national AI investment plan, public-sector experimentation, development-bank finance, applied research centers, and workforce initiatives. This makes Brazil's agenda more ambitious than a purely declaratory model, but less predictable than jurisdictions that have already enacted a comprehensive AI law. The result is a promising, hybrid policy framework: intelligent because it links trust, demand, financing, skills, and compute capacity; incomplete because legal certainty, execution transparency, and domestic technological depth still need to catch up.

Brazilian Artificial Intelligence Plan: AI for the Good of All

The most important recent step is the Brazilian Artificial Intelligence Plan (Plano Brasileiro de Inteligência Artificial, PBIA), whose final version was published under the coordination of the Ministry of Science, Technology, and Innovation in 2025. The plan reframes AI as a development and innovation agenda rather than only a regulatory issue. It organizes government action around strategic axes and projects up to R$23.03 billion ($4.46 billion) in investments for 2024–2028, with a large share directed to business innovation, productive applications, public services, research infrastructure, and governance.

The PBIA spurs innovation through:

1. **Mission-oriented investment:** The plan gives AI policy a concrete budgetary and programmatic structure. By directing resources toward industrial challenges, AI value chains, public-sector use cases, and research infrastructure, it reduces uncertainty for companies, universities, start-ups, and public agencies seeking to invest in AI.
2. **Linkage with industrial policy:** By connecting AI to the current industrial policy ("Nova Indústria Brasil"), Brazil treats AI as a general-purpose technology for productivity, not merely a digital-services topic. This can encourage adoption in manufacturing, agribusiness, health, logistics, finance, government, and environmental monitoring.
3. **Strategic signaling**: The plan sends a clear message that the federal government intends to be both an enabler and a user of AI. For an emerging economy, this signaling matters because private actors often wait for evidence of sustained public commitment before scaling investments.

Trust, Data Protection, and Regulatory Certainty

Brazil's AI architecture did not begin with AI-specific legislation. It began with data protection and innovation policy. The General Data Protection Law (LGPD) established a broad privacy framework and grants data subjects the right to request a review of decisions made solely on the basis of automated personal data processing when those decisions affect their interests. This makes privacy, transparency, and accountability central to any AI deployment involving personal data.

At the same time, Brazil still lacks a final general AI law. PL 2338/2023, approved by the Senate and under consideration in the Chamber of Deputies, proposes rules for the development, promotion, and ethical and responsible use of AI centered on human beings. As of the current Chamber docket, the bill is awaiting the rapporteur's opinion in a special committee.

This governance layer supports innovation through:

1. **Trust as an innovation input:** Rules on data protection, automated decisions, and risk governance can raise user confidence and reduce reputational risk for firms adopting AI. This is particularly important in finance, health, education, public services, and consumer-facing digital platforms.
2. **Regulatory learning**: The National Data Protection Authority (ANPD) included AI in its 2025–2026 regulatory agenda and has been publishing progress reports on its priority projects. This gives companies a signal about upcoming issues while allowing regulation to be calibrated over time.
3. **Remaining uncertainty:** Because the general AI bill has not been enacted and the ANPD's AI-related rules are still developing, Brazil's framework remains partly uncertain. The challenge is to approve proportional, risk-based rules without creating compliance burdens that slow experimentation and entry by smaller firms.

Public-Sector AI, Procurement, and Sandboxes

Brazil has begun using the state as an early adopter and testbed for AI. The federal digital-government portal reports 182 AI solutions in operation as of 2025, 144 agencies planning AI

assistants, and only 41 agencies with defined AI guidelines. These numbers show both diffusion and a governance gap: adoption is moving faster than institutional standardization.

Public-sector AI encourages innovation through:

1. **Demand creation:** When government agencies become demanding buyers and users of AI, they create early markets for start-ups and solution providers. This can be especially relevant in Brazil, where private-sector AI adoption is growing, but many firms still rely on ready-made or externally customized tools.
2. **Controlled experimentation:** The ANPD's AI and data-protection sandbox allows up to three selected participants to test AI solutions under direct supervision until December 2026, with a focus on algorithmic transparency and personal-data protection. This type of sandbox helps regulators learn from real cases while giving innovators a safer path to test new models.
3. **Administrative capability:** The Ministry of Management and Innovation and the National School of Public Administration (MGI-ENAP) launched a 71-hour AI training program for federal public managers in 2026. By treating AI as a management competence, not only an IT topic, the program can also improve the quality of public demand for AI solutions and reduce poorly designed adoption.

Financing, Applied Research, and Business Adoption

Financing is one of the strongest elements of Brazil's current AI policy. The Brazilian Development Bank (BNDES) and the Brazilian Innovation Agency (Finep) reported $1 billion in approved credit and equity for AI between January 2023 and September 2025, including resources for AI developers, hardware, chips, supercomputers, cloud computing, and data centers. BNDES also reported that its "Garage" program will support 400 start-ups by 2028 and that, among the first 100 start-ups supported in the current edition, 49 use AI in their business models.

Brazil's financing and research agenda spurs innovation through:

1. **Patient capital for scaling:** Development bank credit, equity funds, and innovation finance can help firms move from proofs of concept to production-scale AI systems, especially in areas where venture capital alone is insufficient or geographically concentrated.
2. **University-industry bridges:** The State of São Paulo Research Aid Foundation (FAPESP)'s applied AI research centers—launched in collaboration with the Ministry of Science and Technology, communications and Internet-governance partners—support problem-oriented research in areas such as industry, renewable energy, cybersecurity, and education. The centers also help train AI talent and connect academic capacity to business and public-sector challenges.
3. **Closing the capability gap:** Cetic.br's TIC Empresas 2024 survey found that, among firms using AI, 76 percent acquired ready-to-use solutions and 56 percent hired external suppliers to modify or develop AI systems. This suggests that adoption is spreading, but internal development capacity is still limited. Public policy is therefore right to emphasize skills, applied research, and domestic value chains.

Compute Capacity, Skills, and International Positioning

The PBIA correctly identifies compute capacity as a strategic bottleneck. Brazil's Santos Dumont supercomputer returned to the global Top 100 in 2024, and government communications link its upgrade to the PBIA's ambition to expand national AI research infrastructure. For a country that wants to reduce technological dependence, public compute infrastructure can function as a shared capability for universities, research institutes, and mission-oriented projects.

Brazil is also expanding AI literacy and workforce policies. In education, the Ministry of Education launched a national reference framework in 2026 with recommendations and policy guidelines for responsible AI across all levels of education, from early childhood to postgraduate education. In public administration, the MGI-ENAP program trains managers to identify where AI can add value, assess data quality, and use generative AI and machine learning responsibly.

These efforts support innovation through:

1. **Compute as infrastructure:** AI innovation requires access to high-performance computing, cloud resources, datasets, and energy-intensive infrastructure. Public computers do not replace private investment, but they can lower barriers for researchers and smaller innovators.
2. **AI literacy**: A larger base of users, managers, teachers, students, and public servants who understand AI increases adoption and expands the pool of potential innovators. This broadens demand for AI solutions and improves the quality of experimentation.
3. **Responsible international integration:** Brazil is not simply importing one regulatory model. Its approach borrows from OECD-style principles, data-protection governance, industrial policy, and public-sector experimentation. This hybrid model can be a strength if it remains proportional, transparent, and execution oriented.

Bottom Line

Brazil is developing a relatively smart AI policy to drive innovation, but it has not yet reached institutional maturity. The strengths are clear: an investment plan, development bank finance, applied research centers, public-sector experimentation, a privacy foundation, and growing attention to compute and skills. The weaknesses are equally clear: the general AI law is pending, ANPD rules are still evolving, public-sector governance is uneven, and business adoption still depends heavily on externally supplied tools. The country has chosen the right direction. Its next test is delivery: converting plans into disbursements, pilots into scalable systems, principles into proportional rules, and adoption into domestic capability.

BULGARIA

ARC Fund, By Ruslan Stefanov and Georgi Dobrev

Bulgaria remains among the EU's most exposed economies across the energy/economic, technological, and demographic dimensions of security, yet it retains real, underexploited assets: one of Europe's most dynamic ICT sectors, new world-class scientific infrastructure such as INSAIT, BRAIN++ and the Discoverer+ supercomputer, and a history of fiscal stability reinforced

by its 2026 Eurozone membership.[75] Bulgaria's entrepreneurial energy is notable: newly registered companies exceeded 40,000 in 2024 for the first time since 1990, and the country ranks first in the EU in youth entrepreneurship.[76]

Absent a comprehensive, consistently resourced national innovation strategy, however, Bulgaria risks falling further behind both the European core and regional peers such as Poland, the Czech Republic, and the Baltic states.

According to ARC Fund's latest competitiveness analysis, Bulgaria improved marginally in the International Institute for Managerial Development's (IMD's) World Competitiveness Yearbook on the strength of macroeconomic stability, low taxes and its ICT sector—three of the country's defining competitive advantages over the past decade.[77] However, the country continues to suffer from a pronounced digital divide. The ICT sector continues to push ahead, with services exports ranking 15th globally and digital connectivity, cloud computing uptake, and broadband coverage recognized among the country's comparative strengths, increasingly anchoring Bulgaria within Euro-Atlantic economic integration.[78] Yet the wider population and business base remain among the most digitally backward in the EU: only 35.5 percent of the population possesses basic digital skills, just 49.9 percent of Bulgarian SMEs reach even a basic level of digital intensity against an EU average of 72.9 percent, and a mere 6.47 percent of enterprises use AI at all.[79] Closing this gap between a fast-advancing technology frontier and a lagging domestic economy is central to Bulgaria's transition from a cost-driven to an innovation-driven growth model.[80]

Bulgaria's AI policy remains at a nascent stage. Despite the country's early adoption of a Concept for the Development of AI in 2020, Bulgaria has made little progress in translating it into practical policy with a dedicated governing body and funding mechanism.[81] The country's approach to AI innovation policy remains fragmented and heavily dependent on co-financing provided by the EU. Furthermore, Bulgaria has lagged in joining international strategic initiatives for the development of AI. Bulgaria remains conspicuously absent from Pax Silica, the U.S.-led initiative to secure the global AI transatlantic technology stack, whose signatories expanded in June 2026 to include the EU, Germany, the Netherlands and regional peer Greece.[82] Formal participation would strengthen Bulgaria's standing within an increasingly security-conscious transatlantic technology order and support its ambition to position itself as a regional AI and digital hub. Bulgaria has likewise not adhered to the OECD AI Principles, the first intergovernmental standard on AI.[83]

Despite these shortcomings, Bulgaria has managed to implement several initiatives that have fostered the adoption and development of AI, which if properly interconnected to the wider economy hold considerable promise for business growth or social impact. Upgrading Bulgaria's innovation policy architecture and embedding it more firmly within the transatlantic policy infrastructure should be treated as a strategic priority. On the entrepreneurship and innovation-ecosystem front, Bulgaria's ongoing participation in the twelfth cohort of MIT's Regional Entrepreneurship Acceleration Program (MIT REAP) offers a concrete, still underexploited channel for deepening this integration, linking Bulgarian regional leaders with MIT's expertise to design a more coherent, internationally benchmarked national innovation strategy.[84] Innovation.bg 2025 itself identifies active integration with such leading international initiatives, alongside the EU's smart specialization strategies, as a pillar of the new social contract for innovation that Bulgaria needs.[85]

Implementing the AI Continent Action Plan

The AI Continent Action Plan is the EU's landmark policy initiative aiming to position Europe as a global leader in AI.[86] Bulgaria has been fairly successful so far in attracting AI Continent Action Plan instruments and available funding. Bulgaria has been selected to host one of the 19 EU AI Factories, BRAIN++, which will serve as a central hub for the development and deployment of advanced AI solutions.[87] BRAIN++ offers tailored support, ranging from access to compute power for technological validation and testing, to technical support from AI researchers and engineers, to advisory services on commercialization strategy and access to finance.[88] In the long run, the AI Factory is expected to serve as an effective service-oriented instrument that can help companies at various stages of growth develop and launch market-ready deep-tech products. The backbone of the factory is the Discoverer+ supercomputer, hosted at Sofia Tech Park and equipped with four DGX H200 server systems delivered by NVIDIA.[89] The facility is ranked 316th (as of June 2026) among the world's 500 most powerful supercomputing systems.[90] The launch and operation of the facility have been supported by EU funding, with the European High-Performance Computing Joint Undertaking (EuroHPC) covering 35 percent of Discoverer's infrastructure costs.[91] Brain++'s success would ultimately hinge on the effective exploitation of the facility and on leveraging further private funding for the creation of local data centers and AI solutions. Data sources point to some 30 commercial data centers in Bulgaria, which, however, serve colocation purposes rather than functioning as the power-dense, graphics processing units (GPU)-intensive facilities required for frontier model training.[92]

AI for Business Support

The Bulgarian government has co-invested with the EU in the creation of the national European Digital Innovation Hubs (EDIHs), which are important facilitators of AI adoption and are also elaborated in the AI Continent Action Plan.[93] EDIHs serve as one-stop shops, helping companies and public-sector organizations navigate their digital transformation. Bulgaria has co-invested in eight EDIHs specializing in AI and decision support across a diverse range of sectors.[94] For example, AgroDigiRise is one such hub, offering a portfolio of services related to digital transformation and technology testing to agricultural producers and agri-tech SMEs.[95] Such projects are important transmission instruments given the low levels of SME digitalization and the workforce's limited digital skills relative to the EU average, as noted in the Innovation.bg report.[96] EDIHs are also the first steppingstone in preparing SMEs to make use of frontier technologies such as supercomputers. In the context of making SMEs AI-ready, strategic initiatives such as REFRAIME, aim to build capacity for the protection of fundamental rights amid the rapid development of AI. The initiative provides AI developers in private, academic, and public sectors with the tools to understand AI ethics as an investment rather than a bureaucratic burden—one that can both enhance compliance and lower future financial exposure to legal costs.[97]

The Institute for Computer Science, Artificial Intelligence and Technology (INSAIT)

In 2022, the Bulgarian Ministry of Education and Science founded INSAIT in partnership between Sofia University and two leading Swiss institutes—ETH Zurich (Eidgenössische Technische Hochschule Zürich, Swiss Federal Institute of Technology Zurich, and EPFL (École Polytechnique Fédérale de Lausanne, Federal School of Technology in Lausanne)—with initial funding of approximately €85 million (through 2030).[98] The institute has generated significant scientific contributions at the frontier of research in deep-tech areas such as robotics, quantum computing,

and machine learning. INSAIT has attracted international AI research talent through its established Swiss academic network. It has also drawn support from leading technology companies, including Google, Amazon Web Services and DeepMind. In a recent milestone. INSAIT won Bulgaria's first European Research Council (ERC) grant in Natural Sciences and Engineering.[99]

The institute has laid the foundations for the first locally developed AI technologies, such as BgGPT, a Bulgarian LLM. BgGPT can generate important spillovers across the broader economy if empowered by cooperation with international peers and local innovative and entrepreneurial demand. In the longer term, INSAIT is positioned to channel expertise in complex AI systems to Bulgaria's deep-tech start-up base, while also nurturing the local talent pool through cutting-edge educational courses. It remains crucial for the institute alongside the relevant public institutions to design effective mechanisms for technology transfer that can expand its commercialization potential. Further work is needed in easing the accessibility of scientific human capital and research outputs to the private sector.

CALIFORNIA

Bay Area Council Economic Institute, By Sean Randolph

AI and the Economy

AI is playing a uniquely critical role in the economic trajectory of the San Francisco/Silicon Valley Bay Area. As the global epicenter for AI development and deployment, the Bay Area currently attracts 75 percent of all AI funding in the United States, and 60 percent of AI funding globally. Much of that investment is concentrated in the City of San Francisco, with 45 percent being in just two companies – OpenAI and Anthropic, and 90 percent in the five leading AI companies. In 2025, all ten of the leading venture deals in the region were in AI companies, with the largest deals being done by the corporate venture (CVC) arms of leading technology companies such as Google and Microsoft. That narrative however, obscures a different story of large numbers of smaller AI companies receiving smaller but substantial funding from traditional venture firms.

While at the latest reading OpenAI accounted for approximately 1 million square feet of office space in San Francisco and a growing footprint in Silicon Valley, and Anthropic accounted for another 800,000 square feet, many smaller firms are leasing between 20,000 and 150,000 square feet in previously vacant office towers. With service firms opening or expanding offices nearby in order to be close to their AI clients the growing footprint of AI companies in the region, their expanding employment and spending, and contributions to the tax base are stimulating an economic resurgence in areas that had been slow to recover from the pandemic—supporting new activity at restaurants, hotels, street-level retail, and other service sectors.

Regulatory Strategy

Because of this, AI is recognized by the public sector – both city and state – as high priority economic driver that will set the pace of California's economic trajectory for years to come. For the same reason, while recognizing the many issues that the accelerating development of AI raises, government in California has embraced a regulatory strategy that addresses specific risk cases while at the same time being careful to minimize the barriers that preemptive regulation may pose to continued innovation. In this respect the California approach differs from the precautionary strategy adopted by the European Union's AI Act by largely avoiding front-end, pre-emptive

regulation that imposes large financial penalties and compliance burdens but will be unable to stay ahead of rapid technological change.

AI Dissemination and Competitiveness

While media and public attention is for understandable reasons largely focused on large language models, the capital and energy that those models require suggests that apart from sovereign models very few companies across the world have the mean to develop those models independently of the models that are already available. Competitiveness will therefore turn more on the development of small language models, applications that address specific economic and societal priorities, and the dissemination of AI literacy and skills into the business world and the economy more generally. From this perspective the development of AI capacity will be a prime determinant of business competitiveness as well as employment, as the ability to engage with AI will increasingly be a criterion for employment in nontech as well as tech companies.

For this reason, California's strategy, led by the Governor's office, focuses heavily on maximizing the dissemination of AI skills into the broader workforce. An early executive order by the Governor directed that all State of California government agencies provide AI training to state employees, and that those agencies each develop guidelines for the appropriate use of AI. External to state government, agreements were reached to link leading AI companies with the California community college system, which provides two-year Associate Degree programs and technical certifications, to embed AI training in the curriculum and to develop specific AI curricula in response to changing technological advancements and employer requirements. Related initiatives include support for AI entrepreneurs.

This initial focus on the skills dissemination through the Community College system was later supplemented by similar agreements that established training and education partnerships between leading AI companies and the California State University (CSU) system, which grants bachelor's and master's degrees. Similar to the state's agreement with Community Colleges, the CSU agreements create collaborative links between the companies producing AI technology and that enable the accelerated embedding of AI, linked to industry and market requirements, in CSU curricula.

Parallel efforts are underway in the private sector. One example is the Bay Area Council's AI for All initiative with the City of San Jose, that is designed with industry partners such as OpenAI, Anthropic and Google, to provide high quality AI literacy training, free of charge, to a broad segment of the population. These strategies point to the importance of the deployment of AI skills and the value of public-private partnerships to competitiveness and adaptive employment strategies.

CHILE

Libertad y Desarrollo, By Nicolás Durán and Natalia González

Chile has emerged as Latin America's leading country in AI readiness. It was the first nation to complete the United Nationals Educational, Scientific, and Cultural Organization's (UNESCO's) Readiness Assessment Methodology (RAM) for AI and has consistently ranked first in the Latin American Artificial Intelligence Index (ILIA), which evaluates countries across dimensions such as talent, research, infrastructure, governance, and innovation.[100] These results reflect more than

isolated policy initiatives; they demonstrate a sustained national effort to build the institutional, human, and technological foundations needed to support AI-driven innovation.

Chile's experience is noteworthy because it differs from many international approaches. Rather than relying primarily on comprehensive AI legislation, the country has emphasized institution-building, policy continuity, public-private collaboration, and investment in enabling capabilities. This strategy has combined long-term planning with flexible governance instruments, allowing policymakers to adapt as AI technologies evolve while avoiding unnecessary regulatory uncertainty.

This approach has become increasingly relevant as the global AI landscape shifts. AI is no longer driven solely by advances in algorithms. Its development increasingly depends on access to computing infrastructure, reliable energy, highly skilled talent, and digital connectivity. Countries capable of combining these assets with stable institutions are likely to capture a growing share of AI-related investment and productivity gains.

Chile possesses several of these advantages. Its leadership in critical minerals, rapid expansion of renewable energy, improving digital infrastructure, and relatively stable institutional environment position the country to participate not only as a user of AI technologies but also as a provider of the infrastructure supporting their global deployment.

Stable AI Governance

One of the defining features of Chile's AI strategy has been its policy continuity. Since the publication of the National Artificial Intelligence Policy in 2021, successive administrations have maintained their core objectives while updating implementation mechanisms and expanding priority areas.[101] This continuity has provided predictability for universities, research centers, start-ups, and private investors, helping foster long-term investments in AI capabilities.

Rather than introducing comprehensive legislation at an early stage (President's Boric administration, however, presented a bill with such characteristics in Congress), Chile initially adopted a governance model based on strategic planning, administrative guidance, and coordination among public and private stakeholders. The National AI Policy established three broad pillars—enabling factors, development and adoption, and ethics and governance—which continue to guide public action.[102] Subsequent updates have refined these priorities without fundamentally changing the overall strategy.

This gradual approach has allowed institutions to accumulate experience before adopting more formal regulatory measures. Instead of attempting to anticipate every technological development, policymakers have prioritized building institutional capacity, encouraging experimentation, and strengthening coordination across government, academia, and industry.

The result has been a governance framework that combines stability with adaptability. While legislation remains under discussion, Chile has already developed many of the institutional capabilities necessary to support AI innovation, demonstrating that effective governance depends not only on legal rules (and perhaps, in a dynamic and rapidly evolving technology, legal instruments don't rise as the most suitable) but also on sustained public capacity and strategic coordination.

Government as an AI Adopter

Chile's AI strategy recognizes that governments should not only regulate emerging technologies but also adopt them. Public-sector adoption can improve service delivery, increase administrative efficiency, and create demand for AI solutions, accelerating innovation across the broader economy.

In fact, several ministries and public services have incorporated algorithms and semi-automatized decision systems to their decision-making process. Currently, those algorithms are mostly being used in the health sector, or in relation to social, public order and security, and education and electoral policies, among others.

To support responsible adoption, the Ministry Secretary General of the Presidency and the Ministry of Science, Technology, Knowledge, and Innovation issued Circular No. 711 in 2023, providing guidance for the use of AI within public institutions.[103] The document promotes principles such as human oversight, transparency, accountability, and data protection while allowing agencies sufficient flexibility to experiment with new technologies.

These efforts were complemented by recommendations issued by the Chilean Transparency Council, which encourage public institutions to disclose when algorithmic systems influence administrative decisions and to maintain appropriate mechanisms for human review.[104]

Together, these initiatives establish a common governance framework without imposing rigid requirements that could hinder technological adoption.

Chile has also invested in developing AI capabilities within the public sector. Programs such as "*Stack Público,*" currently promoted by the Ministry of Science, provide public officials with practical training in AI, enabling them to identify opportunities for adoption, assess risks, and integrate AI tools into public administration.[105] This emphasis on institutional capacity recognizes that digital transformation depends not only on technology but also on the skills of those responsible for implementing it.

By positioning government as both a regulator and an early adopter, Chile has created an environment that encourages experimentation while building public trust. This dual role strengthens the state's own capabilities and supports the diffusion of AI technologies throughout the economy.

Building AI Talent

Human capital has been one of the strongest pillars of Chile's AI strategy. While AI infrastructure and digital technologies can be imported, the ability to develop, adapt, and deploy AI depends fundamentally on the availability of skilled workers, researchers, entrepreneurs, and public officials.

Chile currently leads Latin America in AI talent, scientific output, and private investment in research and development, according to the Latin American AI Index (ILIA).[106] These outcomes reflect decades of investment in higher education, scientific research, and collaboration between universities, research centers, and industry rather than short-term AI-specific policies.

The National AI Policy identifies talent development as a key enabling factor for long-term competitiveness.[107] Accordingly, government initiatives seek to strengthen AI capabilities

throughout the education system while promoting stronger links between research institutions and productive sectors. The objective is not simply to increase the number of AI specialists but to broaden the adoption of AI-related skills across the workforce.

Chile has also sought to expand AI capabilities beyond the national government. Programs such as "*Ciudades por la IA*" support municipalities in identifying local challenges that can be addressed through AI while connecting them with technology providers and start-ups capable of developing practical solutions.[108] Although modest in scale, these initiatives help diffuse AI capabilities throughout the country and encourage experimentation at the local level.

Ultimately, Chile's long-term competitiveness will depend less on developing frontier AI models than on ensuring that businesses, workers, and public institutions can effectively adopt and use AI technologies. Widespread diffusion of AI capabilities will likely generate larger productivity gains than isolated technological breakthroughs.

AI Infrastructure

As AI systems become more computationally intensive, countries increasingly compete not only through research and innovation but also through the infrastructure required to support AI development. Reliable electricity, high-performance computing, digital connectivity, and access to critical minerals have become strategic assets in the global AI economy.

Chile is well positioned in this emerging landscape. The country combines global leadership in copper and lithium production with abundant renewable energy resources, expanding digital infrastructure, and a stable investment environment. Together, these assets provide an opportunity to participate in AI value chains beyond the development or adoption of AI applications alone.

Critical minerals represent one of Chile's most significant comparative advantages.[109] Copper remains essential for electrical transmission, data centers, and advanced computing infrastructure, while lithium plays a central role in energy storage technologies that increasingly support AI-related infrastructure. As global demand for AI infrastructure expands, these resources are likely to become even more strategically important.

Energy constitutes a second competitive advantage. AI computing requires large and reliable electricity supplies, making access to affordable, low-carbon energy an increasingly important factor in data center location decisions. Chile's rapid deployment of renewable energy has strengthened its attractiveness as a destination for digital infrastructure investments while creating opportunities to better utilize surplus renewable generation.[110]

At the same time, investments in digital infrastructure—including new data centers and the Humboldt submarine cable connecting South America with Asia-Pacific—will further strengthen Chile's position as a regional digital hub.

Rather than viewing these assets independently, Chile has an opportunity to integrate them into a broader economic strategy. The country's objective should not simply be to export the inputs required by the global AI economy, but to attract greater investment in computing infrastructure, digital services, and AI-enabled industries that generate higher value-added activities domestically.

A Regulatory Approach That Supports Innovation

As AI adoption accelerates, governments face increasing pressure to establish dedicated regulatory frameworks. As explained before, Chile is currently debating legislation that would introduce a comprehensive legal framework for AI systems, largely based on a risk-based approach similar to that adopted in other jurisdictions.

The objectives of the proposed legislation—including protecting fundamental rights, increasing public trust, and providing legal certainty—are legitimate and increasingly common across advanced economies. Nevertheless, Chile's experience also illustrates that AI innovation can develop successfully before comprehensive regulation is introduced.

As mentioned before, prior to the current legislative debate, Chile had already established a National AI Policy, administrative guidance for public-sector AI use, transparency recommendations, and initiatives supporting AI adoption and workforce development. These measures created institutional capabilities while allowing policymakers to gain practical experience before adopting binding legal requirements.

This sequencing offers several advantages. Because AI technologies evolve rapidly, flexible governance mechanisms can often adapt more quickly than legislation. Administrative guidance, sector-specific regulation, and existing legal frameworks frequently provide sufficient tools to address many emerging challenges while avoiding unnecessary compliance costs that could discourage innovation and investment.

This does not imply that AI should remain entirely unregulated. Applications involving critical infrastructure, public safety, or decisions with significant consequences for individual rights may require additional safeguards, transparency requirements, and human oversight. However, these measures should remain proportionate to clearly identified risks and avoid imposing broad obligations on lower-risk applications.

Chile’s experience suggests that successful AI governance depends not only on regulation but also on institutional capacity, policy continuity, and an environment that encourages innovation. Preserving these conditions while addressing emerging risks will likely be more important than the speed with which new legislation is enacted.

From AI Readiness to AI Productivity

Chile's AI strategy demonstrates that innovation can be promoted through sustained institution-building rather than comprehensive regulation alone. Over the past several years, the country has developed a coherent policy framework centered on long-term planning, flexible governance, public-sector adoption, and investment in human capital. Together, these measures have positioned Chile as Latin America's leading AI ecosystem while providing a stable foundation for future technological development.

The next phase of Chile's AI strategy should focus less on expanding institutions and more on accelerating adoption. As with previous general-purpose technologies, the largest economic benefits from AI will likely come not from developing frontier models domestically but from integrating AI across firms, public services, and productive sectors. Continued investment in skills, digital infrastructure, and organizational capabilities will therefore be essential to translating technological readiness into productivity growth.

Chile also enters this new phase with important structural advantages. Its leadership in critical minerals, expanding renewable energy capacity, growing digital infrastructure, and stable investment environment position the country to become an increasingly attractive location for AI-related infrastructure. Capturing this opportunity will require policies that encourage long-term investment while ensuring that businesses can adopt emerging technologies efficiently and responsibly.

This objective places particular importance on regulatory design. As governments around the world develop AI legislation, Chile should seek to preserve the institutional flexibility that has characterized its approach to date. Protecting fundamental rights, promoting transparency, and managing high-risk applications remain essential public objectives. At the same time, regulatory frameworks should avoid creating unnecessary barriers that could slow experimentation, discourage investment, or delay the diffusion of AI across the economy.

Ultimately, Chile's experience suggests that successful AI policy depends on more than regulation. Innovation is supported by stable institutions, skilled workers, enabling infrastructure, and governments that can adapt to technological change while providing predictable conditions for investment. By continuing to strengthen these foundations, Chile will be well positioned not only to maintain its regional leadership but also to participate more actively in the global AI economy.

COLOMBIA

TicTac de la CCIT, By Germán López

In recent years, Colombia has established public policy frameworks for AI through national strategies, institutional capacity building, and the gradual incorporation of AI across public administration. On that note, Colombia's approach has focused on creating enablers necessary for AI adoption, particularly through governance, institutional modernization, capacity building, and digital transformation.

While many of these initiatives are still in their infancy and their long-term impacts remain to be assessed, they illustrate a transition from broad policy principles toward the implementation of concrete strategies designed to support AI-driven innovation.

Colombia's National AI Policy (CONPES 4144 Of 2025)

Adopted in 2025, Colombia's National AI Policy (CONPES 4144 of 2025) represents the country's primary strategic framework and establishes a roadmap for the development, adoption, and responsible use of AI, bringing together actions related to digital infrastructure, data governance, human capital, research, innovation, and risk management.[111]

The policy recognizes that, despite important advances in digital transformation, Colombia faces challenges related to technological infrastructure availability, access to high-quality data, specialized talent, and the adoption of AI solutions across the productive sector. To address them, it proposes a coordinated set of actions aimed at strengthening the foundations of the Colombian national AI ecosystem.

1. Given its recent adoption, it is still too early to fully assess its impact. However, it sets a long-term vision for its development and encourages innovation through:

2. Coordinated public-private action, aligning government agencies, businesses, universities, and research centers around shared objectives.
3. Reducing barriers to technology adoption, through measures aimed at strengthening infrastructure, data ecosystems, and institutional capabilities.
4. Developing specialized talent, by promoting education, training, and workforce development initiatives related to AI.
5. Providing long-term strategic direction, helping reduce uncertainty and facilitating investment planning across the ecosystem.

Agreement PCSJA24-12243 of 2024 on the Use of AI in the Judiciary

In 2024, Colombia's Superior Council of the Judiciary (Consejo Superior de la Judicatura – CSJ) issued Agreement PCSJA24-12243, establishing guidelines for the use of AI tools within the Judiciary.[112] The initiative emerged in response to the growing availability of generative AI and seeks to provide clear rules for their use by judges, justices, and judicial employees.

The agreement recognizes the potential of AI tools to support activities such as document management, information retrieval, drafting assistance, and other administrative and judicial support functions. At the same time, it establishes safeguards related to human oversight, data protection, transparency, accountability, and the protection of fundamental rights.

Rather than simply authorizing the use of AI, the agreement creates an institutional framework that provides legal certainty and operational guidance for its responsible adoption within the justice system. On that note, agreement PCSJA24-12243 encourages innovation through:

1. Reducing institutional uncertainty, by establishing criteria and boundaries for the use of AI technologies in judicial activities;
2. Supporting controlled experimentation, allowing officials to explore AI tools within a framework of oversight and accountability;
3. Creating public-sector demand for AI solutions, encouraging the development of technologies tailored to the needs of the justice system;
4. Promoting technological adoption across government institutions, facilitating the gradual integration of emerging technologies into public administration.

Inter-American Development Bank-Financed Digital Transformation Program for the Judiciary

Over the past several years, Colombia's Judiciary has implemented a broad digital transformation agenda supported by the Inter-American Development Bank (IDB).[113] The program aims to improve the efficiency, accessibility, and transparency of the justice system through digitalization, technological modernization, and institutional strengthening.

Among its key components are the digitalization of judicial records, modernization of information systems, increased interoperability across institutions, and the strengthening of digital capabilities within the judiciary.

Although the program was not originally designed as an AI initiative, it creates many of the conditions necessary for future AI deployment by improving the availability, quality, and accessibility of judicial information. Specifically, the Judicial Digital Transformation Program encourages innovation through:

1. Digitizing large volumes of judicial information, creating structured datasets that may support future AI applications;
2. Modernizing technological infrastructure, reducing operational barriers to the adoption of advanced digital tools;
3. Improving interoperability across systems, facilitating access to information for analytics and AI-enabled processes;
4. Strengthening institutional readiness, preparing the justice sector to integrate emerging technologies more effectively.

Artificial Intelligence Committee of the Council of State (Resolution No. 2 Of 2026)

Through Resolution 2 of June 19, 2026, Colombia's Council of State (Consejo de Estado) established its Artificial Intelligence Committee, a specialized advisory body responsible for developing guidelines, promoting staff training, identifying risks, and supporting the adoption of emerging technologies, particularly generative AI.[114]

The resolution acknowledges the potential of AI to improve operational and judicial efficiency, enhance information management, and support institutional modernization. At the same time, it highlights risks associated with algorithmic bias, inaccurate AI outputs, data protection concerns, and the potential impact on fundamental rights.

The creation of the committee represents one of the most recent efforts to institutionalize AI governance within Colombia's highest administrative court. As such, the AI Committee of the Council of State encourages innovation through:

1. Building institutional capacity for responsible AI adoption, promoting training and specialized guidance for judicial officials;
2. Developing governance mechanisms and operational guidelines, helping reduce uncertainty surrounding the use of emerging technologies;
3. Creating spaces for learning and controlled experimentation, allowing institutions to assess both the benefits and risks of AI before broader deployment;
4. Generating best practices for the public sector, which may serve as references for other government entities seeking to incorporate AI tools into their operations.

Conclusion

Colombia's approach to AI policy focuses on institution-building and the creation of enablers for technology adoption. Recent initiatives have focused on strengthening governance, modernizing public institutions, developing digital infrastructure, and building human capital. While many of these efforts are still in their early stages, they reflect a growing commitment to leveraging AI as a

tool to improve productivity, modernize government institutions, and foster innovation across the country.

COSTA RICA

IDEAS LABS, by José Adalid Medrano

Costa Rica enters the AI era from a position that, seen from the outside, appears robust, yet a closer look reveals cracks that put its economic future at risk. The country was a regional pioneer when it adopted a National Artificial Intelligence Strategy (ENIA) in 2024, followed a year later by an Action Plan with verifiable targets and assigned institutional responsibilities.[115] Layered onto that instrument is a regulatory architecture that includes a personal data protection law, a chapter on computer crimes in the Criminal Code, a specialized data protection authority, and an antidiscrimination labor regime applicable to the use of AI in the workplace.

The private sector reinforces that impression, since the country hosts operations of global technology leaders, three out of four multinational service companies established in its territory use AI-based solutions, and Costa Rica ranks first in Latin America on digital skills according to the World Economic Forum, with more than 2,600 annual graduates in computer science.[116] On closer inspection, however, this looks like a mirage, because many of those rules stem from a restrictive view of technology use and do not genuinely create opportunities for businesses or the population.

When regulating a cross-cutting technology capable of affecting every citizen of a country, legal certainty is required for decision-making, and that certainty cannot come from a lax framework but from a predictable one, designed to create prosperity and to establish with clarity what is permitted and under what conditions. Producing that framework is the task of Congress, and its legitimacy will depend on emerging from a broad regulatory debate capable of building the foundations on which the rules that will change the nation's future are set. In legislating on this matter, Costa Rica is not resolving a sectoral issue: it is defining the economic model that will determine its competitiveness and, with it, the conditions of prosperity, privacy, and democratic functioning of the coming decades.

The ENIA and Its Action Plan

The National Artificial Intelligence Strategy 2024–2027, led by the Ministry of Science, Innovation, Technology, and Telecommunications (MICITT), made Costa Rica the first Central American country with a national policy on the matter, in a process accompanied by UNESCO and the Development Bank of Latin America and the Caribbean.[117]

It is organized around seven pillars covering: i) ethics and responsibility, ii) territorial articulation and economic development, iii) promotion of research, development, and innovation, iv) smart government, v) talent development, vi) digital infrastructure, and vii) international leadership.

Those pillars rest on seven guiding principles: i) peace and human dignity, ii) human oversight, iii) transparency and explainability, iv) equity and nondiscrimination, v) accountability, vi) sustainability and well-being, and vii) safety and cybersecurity.

To these are added five cross-cutting principles running through the entire strategy: i) gender perspective, ii) inclusion and accessibility, iii) data protection, intellectual property (IP), and privacy, iv) promotion of research, development, and innovation, and v) education and training.

In August 2025, MICITT published the corresponding Action Plan, which translates those pillars into work streams with indicators, baselines, annual targets, and responsible institutions, involving more than 25 public entities including the Costa Rican Social Security Fund, the Costa Rican Electricity Institute, the National Insurance Institute, the Ministry of Public Education, and the National Learning Institute. Compared with equivalent plans in other countries of the region, the Costa Rican instrument stands out for its level of operational detail.[118]

The ENIA and its Action Plan drive innovation through:

1. **The state as early adopter and buyer.** The smart government pillar seeks to modernize public administration, and the plan gives it concrete form through a Digital Catalogue of Public Sector AI Projects and Innovative Public Procurement processes.
2. **Territorial decentralization.** The territorial articulation pillar brings capabilities beyond the Greater Metropolitan Area through Community Innovation Laboratories and technology transfer to agriculture, with plan targets under the Institute of Rural Development (INDER) reaching 7,000 families in cattle traceability and 100 agricultural production units per year.
3. **Technical assistance for SMEs.** The same pillar promotes adoption among SMEs, and the plan sets a target of 200 production units receiving technical assistance from a baseline of 50, with MICITT as the responsible entity and the National Institute of Apprenticeship (INA) and the Costa Rican Promoter of Innovation and Research as partners.
4. **Enabling infrastructure.** The digital infrastructure pillar links adoption to the rollout of 5G networks and to a National Center of Excellence, and the plan adds a prefeasibility study on national computing capacity targeted for 2027.[119]

Positioning Within Global AI Governance

Costa Rica has sought to position itself through multiple, nonexclusive accessions, consistent with the international leadership pillar of its national strategy:

1. **Latam-GPT.** In December 2025, MICITT signed a memorandum of understanding with Chile's Ministry of Science to jointly develop a regional language model, under the declared principle of shared technological sovereignty. The national technical counterpart is MICITT's Directorate of Research, Development, and Innovation, and the agreement commits the country to contributing national datasets to the regional digital heritage.[120]
2. **Digital Economy Partnership Agreement (DEPA).** The agreement establishes modern rules to facilitate cross-border electronic commerce, data security, and digital trust, and includes among its express objectives the adoption of emerging technologies such as AI, in addition to incorporating the free cross-border flow of data and the prohibition of forced localization of technological infrastructure. Costa Rica formalized its accession in May 2026.[121]
3. **Pax Silica.** In June 2026, the country joined this strategic partnership launched by the U.S. Department of State, aimed at securing supply chains for AI and other critical technologies.

The initiative spans every layer of the technology stack, from critical minerals and energy supply to semiconductors and transportation logistics, and seeks to deepen economic cooperation, reduce coercive dependencies, and protect innovation from unfair nonmarket practices.[122]

The Costa Rican Regulatory Debate Reveals a Gap in Understanding

Costa Rica has several AI bills before the legislature, reflecting broad interest among lawmakers in regulating the issue, though not necessarily a deep grasp of what is at stake. In one case, legislators delegated the initial draft to a generative AI system and presented this as a novelty; in another, they drew on the European model without considering the country's particular needs or the economic impact of transplanting such a restrictive approach.[123] That regulatory transplant deserves attention because the frameworks being copied were designed by jurisdictions that produce AI companies and need to contain them, whereas Costa Rica is fundamentally an adopter and an exporter of services, and would therefore assume the compliance costs of a containment regime without the industrial base that such a regime presupposes.

The lack of clarity runs so deep that a single bill proposes, correctly though in limited form, the establishment of regulatory sandboxes to encourage the creation of projects in this field, while at the same time requiring companies to obtain the consent of employees and unions before implementing AI in the workplace, which reflects a view belonging to the century before last on how to confront an industrial revolution.[124]

Recommendations

Costa Rica must concentrate its efforts on building capabilities and legal certainty, which means enacting as positive law a regulatory framework that enables innovative projects, protects citizens from abusive uses, and allows for cross-cutting training and educational programs that equip the population to navigate the wave of change brought by AI-driven technological development. Specifically:

- **A regulatory debate on necessary limits to certain rights.** Rights such as privacy and copyright must be guaranteed, while a regulatory debate is needed on which areas could be subject to limitations that allow economic development without hollowing out the content of constitutional rules or affecting individual dignity. One example is the use of personal information available on the Internet, which in some cases may enable fair and necessary uses, but in others may lead to state surveillance, harassment, or other abuses against citizens.
- **Compensating authors as innovation policy.** On copyright, the country has its own interest in defining rules for compensating authors, since a system that fails to compensate them adequately will reduce the quality of the final product generated by these systems, seriously harming national innovation. This should be accompanied by a national policy encouraging domestic and foreign companies to train their models on works created by the state, since any limitation of this kind affects the collective interest.
- **Punishing conduct, not tools.** When rules are drafted, criminal law should sanction the harmful acts that can be committed with AI without criminalizing the tool itself. Sanctioning the creation of credible sexual montages of a person is not the same as adding an aggravating circumstance for having used AI, because in the face of a ubiquitous

technology this ends up building a criminal policy that punishes the use of the instrument rather than the harm caused. The region already shows both paths: in Chile a bill is under discussion that autonomously criminalizes the generation and distribution of intimate images created with AI. The sound approach is that if an aggravating circumstance is established for this conduct, it should relate to the impact on the victim rather than to the technology used.[125]

- **Promoting the adoption of open source models.** Promoting open-source language models is the most realistic path to building national capabilities and technological sovereignty, as it allows greater control over data processing and entry costs that are compatible with the scale of the Costa Rican market.
- **Regulating state use of AI rigorously.** The use of these technologies by the state requires stricter rules than those applicable to the private sector, because the combination of surveillance capacity, profiling, and automated decision-making in public hands carries a high potential to destroy a liberal democratic system.
- **Prioritizing a regulatory sandbox in education.** Priority should be given to a regulatory sandbox in education capable of transforming the country's capabilities to seize the opportunities these technologies bring. In Costa Rica, education is governed by rules that hold back innovation, and at a time of accelerated technological development the nation's prosperity will depend on training and higher education programs that match the times. This is also the most effective way to protect the right to work, because blocking technological adoption does not preserve jobs but shifts activity to other jurisdictions, whereas guaranteeing fast and repeatable training returns to workers the ability to decide when to retrain. Digital education, however, cannot be limited to the defensive, since teaching privacy and cybersecurity produces citizens who know how to protect themselves but not necessarily how to create, and in a context where AI has lowered the cost of developing software and enabled small firms to offer services across borders, the operational constraint is no longer capital but the capabilities installed in the population.

Costa Rica must build capabilities that allow it to prosper in a changing world, and it is through the strengthening of cross-cutting digital education that it will develop the resilience so necessary in periods of accelerated transformation. The country must be clear that, in defining its AI framework, it is not settling how a tool is used: it is deciding under what rules the next generations will prosper, and whether the outcome will be shared prosperity or the condemnation of part of the population to structural poverty.

ECUADOR

CITEC, By Andrés Vega

Ecuador has moved rapidly from fragmented AI initiatives toward a national policy framework that combines innovation promotion with rights-based safeguards. In January 2026, the government published its Strategy for the Promotion of the Development and Ethical and Responsible Use of Artificial Intelligence (EFIA), establishing a 2025–2029 roadmap for AI governance, talent, infrastructure, investment, and adoption. Two months later, the Superintendency for Personal Data Protection (SPDP) brought AI systems that process personal data under an AI-specific compliance

rule. A draft amendment now under consultation seeks to make that rule more proportionate by tying processor obligations to actual access, visibility, or effective control over personal data.[126]

Together, these instruments show an emerging Ecuadorian model: the government is using strategy, data-protection regulation, and regulatory calibration to create trust, reduce uncertainty, and stimulate AI adoption. The opportunity is significant, but so are the constraints. Ecuador is classified in the 2025 Latin American AI Index as a late adopter beginning to awaken; R&D expenditure remains around 0.44 percent of GDP, and infrastructure and talent gaps continue to limit scale. At the same time, demand for AI skills is rising quickly and the country has made measurable gains in connectivity, data-center capacity, and early AI education.[127]

A National Roadmap: Ecuador's AI Strategy (EFIA)

Published through Ministerial Agreement No. MINTEL-MINTEL-2025-0030 on January 19, 2026, EFIA is Ecuador's first comprehensive national AI strategy. It sets a 2029 vision in which AI is adopted ethically, responsibly, inclusively, and sustainably to advance digital transformation, socioeconomic development, and citizen well-being. Its stated scope covers public-sector entities and public or private actors—domestic or foreign—that develop, implement, use, or commercialize AI systems in Ecuador, or whose systems produce legal effects in the country.[128]

EFIA is organized around three pillars: 1) AI governance; 2) capacity and technology; and 3) AI adoption and development. It translates these pillars into 21 action lines and measurable targets. Among them are 4 AI standards or certifications, 10,000 people completing AI training for work, $200 million in cumulative investment in AI-enabling digital infrastructure and services, 1 technology-free zone, and a regulatory framework for at least 1 AI-focused sandbox.[129]

EFIA drives innovation through:

1. **Regulatory experimentation:** The strategy calls for a regulatory sandbox for emerging technologies, with emphasis on AI. A supervised testing environment can reduce uncertainty for start-ups, universities, and established companies by allowing new models to be tested before full-scale market deployment.
2. **Investment and scale:** EFIA seeks to attract capital through technology free zones, start-up acceleration, co-investment mechanisms, and public-private investment in data centers, cloud services, and other digital infrastructure. Its infrastructure target of $200 million provides a concrete signal that AI policy is not limited to principles; it is also an industrial and competitiveness agenda.
3. **Skills and workforce development:** The strategy promotes AI content from basic education through to higher education, scholarships and specialization, multidisciplinary research, and digital skills for citizens. It also aims for 10,000 workers to complete AI training, helping firms adopt AI without deepening labor-market exclusion.
4. **Data, cloud, and open standards:** EFIA promotes cloud adoption, secure and standardized open data, and broader access to AI tools through public digital-access points. These measures lower the fixed costs of experimentation and make it easier for smaller firms and public institutions to build on shared digital infrastructure.

5. **Standards and market trust:** The strategy targets four technical standards or certifications and sector-specific guidance for ethical, transparent, and responsible AI. Clear conformity mechanisms can reduce due-diligence costs for buyers and give responsible developers a way to differentiate their systems in the market.[130]

Table 1: Ecuador's AI starting point[131]

Indicator	Latest figure cited in EFIA
Workers reporting AI use in their tasks	36% (2024)
R&D expenditure	0.44% of GDP
Households with Internet access	66%
Urban / rural Internet coverage	73.6% / 48.1%
Demand for AI courses	3,027 enrollments per million economically active people; 3rd in the region
Certified data centers	12
GPU capacity	26.0 TFLOPS per million people, below the regional average of 34.2

Protecting Personal Data in AI Systems

On February 12, 2026, the SPDP issued Resolution No. SPDP-SPD-2026-0009-R, later published in Official Gazette No. 240 on March 10, 2026. The rule applies when AI systems process personal data of individuals in Ecuador, regardless of where the system or provider is located. It covers controllers and processors that develop, train, implement, deploy, or provide such systems, and defines four roles in the AI supply chain: developer, deployer, distributor, and implementer.[132]

The resolution does not regulate AI systems that do not process personal data. Where personal data are involved, however, it turns the general obligations of Ecuador's Personal Data Protection Law into AI-specific operational requirements.[133]

The SPDP rule requires:

- **Transparent notice:** Individuals must receive clear, specific, and transparent information about the use of AI, the purposes of the processing, and its automated nature.
- **Automated-decision safeguards:** The current rule expressly protects the right not to be subject to decisions based solely or partially on automated assessments, together with the rights to information and objection. These protections build on Article 20 of Ecuador's Personal Data Protection Law.
- **Risk management and impact assessment:** Controllers and processors must identify and manage risks and, under the original wording, conduct a data-protection impact assessment before developing an AI system that processes personal data.

- **Security by design and by default:** The rule requires administrative, technical, physical, organizational, and legal safeguards calibrated to the categories and volume of data, the state of the art, the purpose of processing, and implementation costs.
- **Documentation and auditability:** AI-related processing must be included in the Record of Processing Activities (RAT), automated decisions with legal or rights impacts must be documented, and AI systems must be audited according to their risk level.
- **Regulatory supervision:** The SPDP may audit AI systems and impose corrective measures under the data-protection law or precautionary measures under Ecuador's Administrative Code.[134]

The resolution supports innovation by increasing trust in AI-enabled services and by giving companies a clearer compliance baseline for data-intensive systems. It also creates a common language for procurement, vendor management, and due diligence across the AI supply chain. At the same time, the original wording applies many obligations broadly and symmetrically to controllers and processors, even where a processor may have little or no practical access to the underlying personal data. That concern led directly to the proposed 2026 amendment.[135]

Calibrating Scope: The 2026 Draft Amendment

In June 2026, the SPDP opened a public consultation on a draft amendment to Resolution No. SPDP-SPD-2026-0009-R. The consultation runs from June 19 through July 16, 2026. The stated purpose is to provide greater clarity regarding the rule's application to processors.[136]

The amendment would retain the resolution's rights-protective structure while making processor liability more functional and proportionate. Its central change is that AI-specific duties would apply to processors only when they have access to, visibility over, or effective control of the personal data being processed. A new general provision further states that processor obligations would be enforceable only for the operations or stages of processing over which the processor has such access, visibility, or control. The provision is explicitly framed as a proportional allocation of responsibility—not a blanket exemption.[137]

The draft also changes the pre-development requirement from a mandatory risk assessment and impact assessment in every case to risk management plus an impact assessment "when applicable," aligning the obligation more closely with the threshold-based approach already established in the data-protection framework. It rewrites the article on data-subject rights so that the AI rule relies on the general rights in the Personal Data Protection Law and its regulation, rather than restating the automated-decision paragraph in the current resolution.[138]

The proposed amendment would drive innovation through:

1. **Proportional responsibility:** Obligations would follow actual control over personal data rather than formal position in a contractual chain. This reduces the risk that cloud, infrastructure, or technical service providers are held responsible for processing operations they cannot inspect or influence.
2. **Greater supply-chain clarity:** The access–visibility–control test provides a more practical way to allocate duties among developers, deployers, distributors, implementers, controllers, and processors. Clearer role allocation lowers transaction costs and improves contracting.

3. **Lower compliance friction:** Making impact assessments conditional on legal applicability avoids unnecessary documentation for lower-risk uses while preserving stronger review where processing is likely to create high risks for individuals.
4. **Support for cross-border services:** Because the underlying rule applies regardless of the physical location of the system or provider, a more precise allocation of processor duties is particularly important for international cloud and AI services serving the Ecuadorian market.
5. **Preserved accountability:** The reform does not remove liability. Processors remain accountable for the phases of processing they can see or control, and controllers continue to bear primary responsibility for lawful, transparent, and secure processing.[139]

From Policy to Adoption

Ecuador's policy direction is notable because it combines innovation incentives with enforceable data-protection conditions. EFIA creates the national roadmap and sets targets for skills, standards, investment, cloud adoption, open data, start-ups, technology free zones, and regulatory experimentation. The SPDP rule translates personal-data principles into concrete requirements for AI systems. The draft amendment then introduces a feedback mechanism: regulation is being adjusted after implementation concerns emerged, rather than remaining static.[140]

This combination can be especially valuable in a country where AI demand is growing faster than research capacity. EFIA reports that Ecuador ranks third in the region for demand for AI courses, yet the country remains below regional averages in compute capacity and invests only around 0.44 percent of GDP in R&D. It also faces a persistent urban-rural connectivity gap. Policy therefore has to do more than control risk; it must lower the cost of responsible adoption, strengthen local capabilities, and ensure that infrastructure and skills are available beyond the largest cities.[141]

The most important implementation test will be coordination. MINTEL leads the strategy, while the SPDP enforces personal-data rights. The Ministry of Production, the Ministry of Labor, education authorities, standards bodies, universities, and the private sector are assigned roles across EFIA's targets. If these institutions align guidance, sandboxes, procurement rules, standards, and enforcement, Ecuador can offer companies a coherent path from experimentation to market deployment. If they act in isolation, overlapping obligations could slow adoption and weaken the investment signal.[142]

Outlook

Ecuador is not attempting to become a frontier-model power overnight. Its emerging comparative advantage is more practical: creating an environment where businesses, public institutions, universities, and start-ups can deploy AI responsibly to solve local problems in finance, agriculture, health, education, logistics, and public services. The country's 2026 policy package moves in that direction by pairing a national innovation strategy with privacy safeguards and a willingness to refine regulatory scope.[143]

For global policymakers, Ecuador offers an instructive case of adaptive AI governance in a middle-income economy. The approach is neither pure deregulation nor a comprehensive AI statute. Instead, it relies on a strategic roadmap, existing data-protection law, targeted administrative regulation, and iterative reform. Its success will depend on whether measurable commitments—training, infrastructure, standards, investment, sandboxes, and coordinated enforcement—are implemented at the same pace as compliance obligations.[144]

EL SALVADOR

FUSADES, By Alvaro Trigueros-Argüello and Marjorie Chorro de Trigueros

Since 2020, the Government of El Salvador has articulated an explicit country-level strategy to become a regional technology hub. Unlike jurisdictions that treat AI and digital transformation as sectoral policies, El Salvador frames technology as a country model, using state capacity, global alliances, and first-mover branding to reposition the country across three interconnected arenas: public service delivery, investment attraction, and international positioning. The bet has been deployed on 4 simultaneous fronts: a legal and institutional architecture built around the National Digital Agenda 2020–2030, 22 public institutions and 44 statutes (28 enacted within the last five years); a fiscal-incentives system expanded through 18 laws passed between 2022 and 2026; strategic alliances with global technology partners (Google Cloud, xAI, NVIDIA); and a growing budget effort. This piece examines how AI policy is being operationalized across three flagship areas—health care, education, and the digitization of government services—and what the early evidence shows about the bet.

The Legal-Institutional Architecture: AI Governance by Executive Design

El Salvador's AI policy sits inside a broader digital-transformation stack that has been institutionalized by law. The General Law on the Digital Modernization of the State (2023) established the framework for state modernization and, notably, wrote the Google Cloud alliance directly into statute rather than treating it as a vendor contract. The Law on the Promotion of Artificial Intelligence (February 2025) created the National Artificial Intelligence Agency (ANIA) under the Executive, giving it authority over AI, robotics, and related technology promotion. The Law on the Promotion of Innovation and Technology Manufacturing (TEC law, 2023) offers exemption from income tax, VAT, import duties, and municipal taxes for 15 years to firms operating in software, AI, robotics, cybersecurity, new energy sources, and technology manufacturing. The Digital Asset Issuance Law (2023) and the earlier Bitcoin Law (2021) placed El Salvador at the front of the regional regulatory frontier for tokenized finance. In May 2026, ANIA published the National AI Strategy 2026: Velocity, Sovereignty, Deployment, which sets ambitious measurable 2028 and 2031 targets—including AI contributing 20 percent of GDP, 100,000 to 125,000 net AI-related jobs, $5 to 10 billion in accumulated AI investment, and 50 percent of government services becoming AI-augmented, among others.

This architecture spurs AI innovation through:

1. **Government orchestration:** ANIA, the National Commission on Digital Assets (CNAD), and the National Bitcoin Office (ONB) all report to the Presidency, ensuring coordinated execution rather than fragmented ministerial competition.

2. **Global alliances embedded in law:** The Google Cloud partnership (2023; $500 million committed over 7 years) established Google Distributed Cloud in-country, a Cloud Center of Excellence, and Google Workspace as the collaboration platform for 83 government agencies and 1.5 million students and teachers. Later alliances with xAI (2025) and NVIDIA (2025) extended the model to AI tutoring and sovereign compute.

3. **Fiscal incentives calibrated to attract high-tech investment:** The 15-year tax holiday under TEC law covers not only classical software firms but also new energy technologies (small modular reactors, hydrogen, storage), positioning El Salvador to serve emerging AI-infrastructure demand.

AI in Public Health Care: Doctor SV

Doctor SV is a flagship AI-enabled public-service project. Financed by 2 consecutive loans from the Development Bank of Latin America and the Caribbean (CAF) ($77 million approved in 2023 for the initial telemedicine platform and $75 million approved in February 2026 for Phase 2), the initiative offers 24/7 video consultations, AI-assisted diagnostics, digital prescriptions, and an integrated family health record accessible from a mobile phone. It was launched publicly in November 2025 with participation from the government, CAF, and Google Cloud as the technical partner. According to the program's management, the application reached 2.3 million consultations in its first 5 months, and Google Play recorded over 1 million downloads by May 2026. CAF's own 2025 report documents that AI-assisted diagnostic assertiveness has reached above 93 percent. Phase 2 targets 30,000 daily consultations and 400 digital kiosks for medication delivery and rapid triage, and the AI Strategy 2026 Phase-1 KPI of "one million-plus consultations" has therefore already been met and exceeded.

Doctor SV spurs AI innovation through:

1. **The state as anchor customer:** By procuring AI diagnostics at a national scale, the government creates a stable demand base that would not exist under a purely private market for tele-health in a small economy.

2. **Institutionalized partnership with a frontier provider:** The Google Cloud alliance provides the AI stack while CAF finances the deployment, decoupling technological capability from domestic development constraints.

3. **Measurable service-delivery outcomes:** Unlike declaratory AI strategies, Doctor SV publishes usage and capacity metrics, which subject the policy to accountability that most AI programs in emerging economies do not face.

AI in Education: From Universal Device Access to a Nationwide AI Tutor

Education has been the country's most systematic experiment in staged digital adoption. Phase 1 (2021–2023) delivered universal device access through the ENLACE program: 1.2 million laptops and tablets to students in the public system plus computers for the full teaching workforce, in every case with free Internet connectivity. Google Workspace has been the primary learning platform for the national education system since 2021, and Google for Education has become the main pedagogical infrastructure. Phase 2 (2025 onward) builds on that base. In December 2025, the Government announced a partnership with xAI to deploy what it calls "the world's first nationwide AI education program," using Grok as a personalized tutor in 5,000-plus public schools

and serving more than 1 million students over 2 years. The AI Strategy 2026 sets 100 percent public-school coverage of the Grok deployment as the Phase-1 KPI, and positions El Salvador as a co-developer of governance, auditing, and safety frameworks for AI in classrooms. The AI Strategy also targets "top global performance" in PISA and health metrics by 2028—an ambitious benchmark against the country's PISA 2022 baseline (mathematics 343, reading 365, science 373, among the lowest positions).

This staged model spurs AI innovation through:

1. **A ready installed base:** By first universalizing devices and cloud platforms, Phase 1 removed the two most common bottlenecks to AI-in-education elsewhere (hardware access and platform fragmentation), which allows Phase 2 to focus on pedagogical outcomes rather than deployment logistics.
2. **Central governance of AI in classrooms:** Rather than each ministry procuring separately, the Grok deployment is centrally administered, which allows consistent monitoring of learning outcomes and shared negotiation of auditing protocols with the provider.
3. **A national demonstration project for AI adoption:** The Grok rollout gives El Salvador a globally visible use-case that is directly connected to its country-brand strategy of first-mover positioning in AI.

The gap that remains is on the supply side of human capital. Gross expenditure on R&D was 0.14 percent of GDP in 2022, researchers stood at 57.6 per million inhabitants, and no Salvadoran university appears in the QS World University Rankings. The 2026 approval of the World Bank Accelerate Learning with Digital Innovation loan (P511960, $501 million) is the largest single component to watch on this front, and its execution will be a leading indicator of whether the education pillar can convert access and tools into deeper capability the following five years.

Digitizing Government Services: The Full Stack

The third arena is the full-stack digitization of the state. Beyond the health and education flagships, El Salvador has deployed AI and digital infrastructure across four converging fronts. First, connectivity sovereignty: CAF approved a $145 million loan in July 2024 to finance the country's first submarine cable, deliberately framed by the Government as strategic national infrastructure rather than a telecom upgrade. Second, sovereign compute: the ONB announced in June 2025 the "world's first sovereign quotation" for NVIDIA B300 chips; the chips arrived in February 2026 and are hosted at the DataTrustSV AI data center, marketed to visiting delegations of U.S. venture capitalists as physical infrastructure for AI partnerships. Third, AI in citizen services: the Attorney General's Office (FGR) operates a 24/7 WhatsApp-based citizen intake channel with AI triage; the electric utility (CEL) uses AI for hydrological forecasting; and the Metropolitan Planning Office (OPAMSS) has deployed NIX AI, a geospatial AI system that accelerates permitting and land-use approvals. Fourth, digital assets and Bitcoin infrastructure: as of March 2025, the sovereign Bitcoin reserve exceeded 6,102 BTC (about $550 million); the CNAD had registered 81 Digital Assets Service Providers (PSAD), 48 issuers (Binance, Bitfinex and Tether among others) and approved 253 emissions of tokenized projects; and El Salvador's Digital Assets Law offers sweeping tax exemptions for issuance and development activities.

This full-stack approach spurs AI innovation through:

1. **Public compute as shared infrastructure:** DataTrustSV and the sovereign B300 acquisition give domestic firms and research institutions access to compute that a small private market could not sustain on its own.
2. **AI adoption inside the state's own operations:** By using AI in customs, permitting, energy forecasting, and citizen intake, the government creates a diversified internal demand for AI solutions and generates operational learning that can transfer to private-sector adoption.
3. **A jurisdictional offering for tokenized finance:** The combination of Bitcoin legal tender, the Digital Assets Law, and the CNAD as a functioning supervisor creates a package that is unusual for the region and that can attract investment in crypto-adjacent activities and, potentially, in the "agentic capital markets" concept the AI Strategy places on the future agenda.

Early Correlations, Signals, and Gaps

The bet is being financed. Between 2019 and 2025, FUSADES documented $784 million in public investment (PAIP) directly identifiable as hub-tech, part of the $1.68 billion in the broader consolidated budget (GPCP) hub-related, and $809 million contracted in external loans (SIGADE) of which $213 million had been disbursed by first-quarter 2026. Alongside this, the Google Cloud alliance commits $500 million over 7 years. Early economic and social correlations, over the horizon 2021–2025, are the result of improvement in investment climate and security, but is also consistent with the fast-response mechanisms a technology-hub bet would be expected to activate first: formal employment as a share of the economically active population rose from 28.3 percent in 2021 to 32.7 percent in 2025; social security (ISSS) contributors increased by 129,627 (+15 percent) between April 2021 and December 2025; high-technology employment under the Eurostat classification grew 16.8 percent, with especially strong growth in computer consulting (+207.6 percent), software publishing (+1,261 percent on a low base), and wired telecommunications (+257.6 percent); and exports of ICT services reached $455 million in 2025 and high-technology goods (CITI) reached $386 million.

The signals in slower-response mechanisms are weaker or mixed. FDI persists below the Central American average (INVEST's promotion budget is roughly $3 million per year compared with $51 million at PROCOMER in Costa Rica). The Global Innovation Index (GII) absolute score fell from 31.3 in 2013 to a low of 19.9 in 2022 and recovered partially to 22.2 in 2025, with the ranking stable around position 98. The Network Readiness Index 2025 places El Salvador at 99 out of 127 economies, with the country ranked 120 in Trust and 117 in Governance—the 2 specific dimensions the AI bet needs most urgently to lift. Although overall poverty fell from 2019 to 2025, absolute rural poverty rose 4.6 percentage points (from 6.5 percent to 11.1 percent), a reminder that the current composition of the new hub bet does not, on its own, reach the most vulnerable rural households.

Bottom Line

El Salvador's AI policy is best read as a state-led, government-orchestrated bet to reposition a small, dollarized economy through digital transformation. Its design choices are unusually pro-innovation for a country of this size: alliances with global providers institutionalized in statute rather than in contracts, compute frontloaded rather than deferred, and the state deployed as

anchor customer for AI in health, education, and citizen services. The early evidence is coherent with what the bet should produce first—faster formal-employment growth, expansion of high-technology subsectors, and rising exports of ICT services and high-technology goods. The gaps are equally clear and are being surfaced by the country's own diagnostic infrastructure: FDI attraction, digital governance and trust, human capital for R&D, and the reach of the bet toward vulnerable rural populations. Two open questions require structured monitoring: how Bitcoin, digital-assets policy, and the "agentic capital markets" concept translate to productivity and per-capita income; and whether the AI Strategy 2026 targets for 2028 and 2031 will materialize. For a small economy pursuing a hub strategy, El Salvador's experience so far suggests three transferable lessons: institutional coordination matters more than the sum of individual laws; alliances with global providers can substitute for the domestic innovation capacity a small country cannot yet produce; and demonstration projects like Doctor SV and Grok in the public schools system are how a small state buys legitimacy and time to build the deeper enabling capabilities that a durable hub requires.

GERMANY

German Economic Institute, By Dr. Vera Demary

Germany's federal structure leads to a diverse landscape of AI policies across the country. While the EU AI Act establishes a general framework for AI policy throughout the continent, Germany's federal government is responsible for national AI policies. Furthermore, each of the 16 German states has introduced its own AI policy, with some municipalities also implementing policies at a local level. This monograph will focus specifically on examples of AI policies at the federal level. Germany has taken some useful steps to boost AI implementation and competitiveness but needs to keep pace to counter the massive investment in AI being made in other areas around the world.

AI Strategy and High-Tech Agenda: The Backbone of Policy

The German federal government launched its initial AI strategy in 2018, subsequently updated in 2020, which remains current today.[145] Under the slogan "AI Made In Germany," the strategy aims to position the country as a global leader in AI research, development, and implementation. This encompasses not only technological leadership but also adherence to European AI values: responsible and human-centered AI forms the core of the strategy, aspiring to serve as its defining quality label. To achieve these ambitions, the strategy outlines 12 key fields of action: strengthening R&D, fostering innovation competitions and European innovation hubs, facilitating AI transfer to businesses, promoting start-ups, managing labor market transformation, utilizing AI in public administration, enhancing data availability, adapting the regulatory framework, developing standards, fostering national and international networking, and increasing societal engagement. In 2024, the OECD recognized Germany's AI strategy as visionary and globally leading, though it also noted that the rapid pace of AI development somewhat limited its overall success.[146] Nevertheless, this strategy provides a crucial foundation for numerous AI policies and initiatives in Germany, which are linked to one or more of these action fields and are regularly evaluated for their effectiveness in relation to the strategy's goals.

The coalition agreement among the current governing parties (CDU – Christian Democratic Union, CSU – Christian Social Union, SPD – Social Democratic Party) builds on the AI strategy's ideas,

specifically detailing objectives for value creation in businesses and greater efficiency in public administration through AI.[147] AI is identified as one of several key technologies vital for future innovation, aligning with Germany's high-tech agenda.[148] This agenda integrates AI into Germany's research and innovation policy, underlining its broad importance for innovation and its far-reaching influence across various federal policy areas. Whilst no further update to the AI strategy is planned owing to time constraints, the high-tech agenda is accompanied by a roadmap with detailed milestones starting in 2026.[149] Its general AI-related goal is to make Germany and its European partners the world-leading location for AI and the flagship market for industrial AI and AI-based robotics. The federal government lists 16 funding opportunities in this lead technology alone, offering funding for a range of projects on AI-related topics.[150] The funding of the AI Service Centers (see next section) is among them.

AI Service Centers: Fostering AI Uptake Through Infrastructure

The Federal Ministry of Research, Technology, and Space funds Germany's AI Service Centers (KI-Servicezentren) to provide better access to compute infrastructure to companies.[151] There are four centers in total that have received such funding since 2022. They are distributed across Germany and support knowledge transfer between research and practice. To this end, they offer researchers and businesses, including start-ups, access to high-performance computing infrastructure for AI development. The centers also serve as hubs for collaborative work on AI solutions and practical support on AI topics. Their focus is on lowering the barriers to using AI in companies and accelerating their uptake of AI. The idea is that without support from the centers, many smaller companies would not implement AI at all or delay implementation, slowing the scale-up of AI adoption in German businesses. This is the potential gap that the centers address.[152] Although four centers for the entire country might seem few, they address a specific challenge for companies: access to computing power, which can be managed efficiently at this scale.

The centers are designed as consortia with different partners, such as research institutions and universities, embedded in a broader ecosystem that includes computing infrastructure, research, companies, and other projects. While AI service centers generally offer consulting, training, and access to infrastructure, they specialize in diverse technologies, creating a wide range of access points for researchers and companies keen to use AI. Their focus areas extend from explainable AI and AI applications for critical infrastructure in the energy and health sectors to large AI models and the broader transfer of AI knowledge.

Mittelstand-Digital: Practical Support For SMEs

The Federal Ministry for Economic Affairs and Energy has been funding the Mittelstand-Digital project (roughly translated as "digital SMEs") since 2012.[153] It supports SMEs, including the skilled crafts, in their digital transformation, covering AI and cybersecurity topics as well. The project covers two pillars: First, there are Mittelstand-Digital Innovation Hubs that interact with SMEs and provide expert knowledge, training, workshops, demonstrators, and practical examples on AI. These innovation hubs are regionally distributed; some specialize in certain sectors or topics. Second, there are the Cybersecurity for SMEs Initiative and the Transfer Center for Cybersecurity in SMEs. They offer specific support to improve SMEs' cybersecurity and related skills, also aiming to raise awareness of these topics. Since cybersecurity is closely related to AI, both pillars are a relevant part of German AI policy.

Mittelstand-Digital takes a practical approach: it recognizes that SMEs face particular pressures with regard to finances, personnel, and time. Many fail to recognize the potential of digital transformation for their processes, products, or business models. At the same time, they account for most German businesses.[154] Against this backdrop, Mittelstand-Digital offers information on digitalization, AI and cybersecurity, guidance, and practical support free of charge. Since the project was established, 26 innovation hubs have been funded. The next round of funding for Mittelstand-Digital begins in 2027, with an even stronger focus on cybersecurity alongside its existing AI focus.

GREECE

Laboratory of Industrial and Energy Economics (LIEE), National Technical University of Athens, Greece (NTUA), By Petros Dimas, Dimitrios Stamopoulos, and Aggelos Tsakanikas

An Ongoing, Vibrant Timeline of Institutional & Regulatory Efforts

Greece has undertaken a concerted strategic effort to establish a robust governance framework, advance cutting-edge technological infrastructure, and accelerate public and private sector adoption of AI. This strategic trajectory is defined by a comprehensive series of key milestones, legislative actions, and institutional initiatives within Greece's Strategic Framework for Artificial Intelligence and Data Governance. The process began in July 2025, when initial regulatory steps were taken by hosting the 1st Consultation Forum on the application of the European AI Act.[155]

Momentum accelerated significantly in the spring of 2026, when the Special Secretariat for Artificial Intelligence and Data Governance organized an event in Brussels focused on AI governance and AI Act implementation, bringing together European institutional representatives and national authorities.[156] This was closely followed by the 2nd Consultation Forum in Greece (March), where over 80 stakeholders from the public, private, and research sectors discussed the horizontal application of the regulation, targeted simplification measures, and the creation of AI regulatory sandboxes within public administration.

The government has recently (April 2026) emphasized its goal to position AI as a core asset for society and entrepreneurship, noting that over 400,000 Greek businesses already utilize AI solutions—a 55 percent increase in adoption over a single year.[157] Greece leads the EU in Generative AI adoption among youth (83.5 percent), highlighting the strategic need to translate widespread personal use into productive professional and educational applications.[158]

On May 18, 2026, the Special Secretariat signed a memorandum of understanding (MOU) with the Athena Research Center to modernize public administration by developing smart document management systems, automating citizen support, and establishing testing frameworks for high-impact AI applications.[159] On May 25, 2026, the "Artificial Intelligence for All" guide was officially released, providing citizens, workers, and students with a free, practical manual crafted by leading scientists to support the safe and responsible use of AI tools in daily life.[160]

The June "BEYOND 2026" exhibition in Athens explored AI's role in empowering Europe and digitally transforming public administration.[161] A major legislative milestone followed on June 21, 2026, when the draft law for the implementation measures of the European AI Act was released for consultation.[162] This legislation proposed designating the Hellenic Data Protection Authority as

the central market surveillance authority, establishing an AI Coordination Center, and creating a unified registry for public sector AI systems. Subsequently, on June 24, 2026, officials announced that the new national supercomputer "DAEDALUS" ranked 31st in the global TOP500 list and 23rd in the Green500 list for exceptional energy efficiency; this system will serve as the computational core for the upcoming "PHAROS AI FACTORY" in Lavrio.[163] Following the public consultation the draft law for the National Implementation Framework of the AI Act was submitted to Parliament, with official hearings of relevant scientific and institutional bodies taking place in July 2026.[164]

Alongside these chronological developments, several foundational initiatives have recently been completed to reinforce this ecosystem. These include:

- The launch of the modernized National Data Portal, which provides free access to over 9,000 datasets from 450 public entities to fuel AI development.[165]
- The formal establishment of the Special Secretariat for Artificial Intelligence and Data Governance as the central coordinating body.[166]
- The formation of the Board of Directors for the "PHAROS AI FACTORY," a joint subsidiary of the Hellenic Corporation of Assets and Participations and the Ministry of Digital Governance tasked with steering Greece's AI computing strategy.[167]

The PHAROS AI FACTORY: Operational Framework, Infrastructure, and Strategic Mission

The "PHAROS AI FACTORY" (officially the Hellenic Artificial Intelligence Factory S.A.) serves as the commercial arm of Greece's national AI Factory initiative, forming part of a broader European EuroHPC network of AI Factories.[168] It is a subsidiary company jointly owned by the Hellenic Corporation of Assets and Participations (HCAP) with a 70 percent stake, and the Ministry of Digital Governance and AI (30 percent).

The factory will be hosted at the Technological Cultural Park of Lavrio, backed by a dedicated budget of €30 million. Its computational core will be the new national supercomputer "DAEDALUS." DAEDALUS is a state-of-the-art system capable of 85.69 petaflops, making it the most powerful supercomputer in Greece to date. It currently ranks 31st globally for overall computing power and 23rd for energy efficiency.

The primary objective of the PHAROS AI Factory is to bridge academic research with the real economy. By providing immense computing capacity, it aims to supply researchers, start-ups, and Greek enterprises with the tools required to build advanced AI applications. Building on its core operational framework, the PHAROS AI Factory is specifically designed to serve as the commercial and strategic vehicle that bridges the gap between academic research and the economy. It will support Greek start-ups through the following targeted mechanisms:

- **Providing Access to Advanced Tools and Computing Power:** PHAROS will leverage the massive computational capabilities of the new national supercomputer, "DAEDALUS." It will grant start-ups, researchers, and Greek enterprises direct access to these advanced tools, enabling them to build and train sophisticated AI models that would otherwise be resource-prohibitive.
- **Fostering Practical AI Applications:** It will assist start-ups in developing highly practical AI applications tailored for critical sectors, including Health, the Greek Language and Culture, and Sustainable Development.

- **Driving National Competitiveness:** By equipping start-ups with state-of-the-art infrastructure, PHAROS aims to help these emerging companies innovate faster, ultimately boosting Greece's overall economic competitiveness and creating new opportunities for growth across the tech sector.

Regulatory Framework for AI: European Alignment and National Implementation

Regulation of AI in Greece is primarily driven by the European Union's AI Act (Regulation (EU) 2024/1689), which serves as the world's first comprehensive legal framework for AI.[169]

The European AI Act: A Risk-Based Approach

The core philosophy of the AI Act relies on a tiered, risk-based approach that classifies AI systems into four distinct categories:

- **Unacceptable Risk:** AI systems that pose a clear threat to fundamental rights, such as government social scoring or technologies designed to manipulate the behavior of vulnerable groups, are strictly banned.
- **High Risk:** Systems deployed in critical sectors like health care (e.g., medical devices), infrastructure (e.g., transport), and employment (e.g., resume-screening software) are subject to rigorous obligations. These include mandatory risk assessments, human oversight, detailed documentation, and the use of high-quality training data.
- **Limited Risk:** Systems that interact directly with humans, such as AI chatbots, are subject to explicit transparency obligations, ensuring users are clearly informed that they are interacting with a machine.
- **Minimal Risk:** Most AI applications, such as spam filters or video games, remain freely permitted without special legal requirements beyond existing general laws.

Additionally, the AI Act establishes specific transparency and systemic risk-management rules for large language models. To mitigate the risks associated with AI-generated synthetic content (deepfakes) and misinformation, the AI Act mandates that all synthetic media be marked in a machine-readable format to clearly signal their artificial origin. This is complemented by the Digital Services Act (DSA) and the EU Code of Practice on Disinformation, which impose strict obligations on online platforms to actively monitor, mitigate, and curb the spread of illegal content and fake news. The implementation timeline for the AI Act is phased: initial steps began in 2025, core regulations activate in 2026, and full enforcement across all high-risk systems will be completed by 2027.

Greece's National Implementation Framework

Greece is among the first EU member states to proactively establish its national framework for the AI Act, targeting full implementation by August 2026. A draft law was submitted to the Greek Parliament to create the requisite institutional mechanisms with legislative provisions that include:

- **Supervisory Authorities:** The Hellenic Data Protection Authority (HDPA) is designated as the central market surveillance authority and national contact point for the AI Act. For high-risk systems, the protection of fundamental rights will be jointly supported by the Hellenic Authority for Communication Security and Privacy (ADAE), the National Commission for Human Rights (EEDA), and the Ombudsman.

- **Notifying Authority:** The Hellenic Telecommunications and Post Commission (EETT) assumes the role of the national notifying authority.
- **Innovation and Support:** An AI Coordination and Expertise Center will be created alongside AI Regulatory Sandboxes, which will allow start-ups and SMEs to test innovative AI applications in real-world conditions under state guidance.
- **Accountability:** A unified registry will be established for AI systems used across the public sector to guarantee administrative transparency. The legislation also introduces a formal complaints mechanism and a structured system of administrative sanctions for noncompliance.

Beyond the scope of the AI Act, the deployment of AI in Greece is further anchored by robust existing legal frameworks:

- **Data Protection:** The General Data Protection Regulation (GDPR) and its implementing Law 4624/2019 establish the fundamental baseline for any AI system processing personal data.
- **Consumer Protection:** Existing consumer protection laws apply directly to AI-integrated products and services, ensuring they adhere to safety standards and prevent deceptive practices.
- **IP:** Current IP legislation governs both the datasets used to train AI models and the legal status of AI-generated outputs.

Concluding Remarks

Greece's strategic framework for AI appears to be setting a solid groundwork that balances robust regulatory governance with high-capacity technological infrastructure and market innovation. By aligning national legislation with the European AI Act, designating dedicated supervisory authorities such as the Hellenic Data Protection Authority, and establishing open data resources like the modernized National Data Portal, the state has built a structured baseline for responsible AI deployment. At the same time, flagship initiatives—most notably the operationalization of the PHAROS AI Factory and the DAEDALUS supercomputer—provide the computational capacity required to connect academic research with commercial use, support growing business adoption, and build on high youth engagement in Generative AI.

Moving forward, sustained progress depends on effective coordination among public, academic, and private stakeholders. Implementing proposed mechanisms such as the AI regulatory sandboxes will be critical to guiding start-ups, SMEs, and public entities through compliance while supporting practical applications in sectors like health care, culture, and sustainability. As European regulatory deadlines approach, national efforts must remain centered on finalizing legislative measures, strengthening AI literacy across society, and maintaining accessible computing resources to secure long-term competitiveness and digital sovereignty.

INDIA

The Dialogue, by Jameela Sahiba

Strategic Framing

India has not approached AI policy as a single legislative act. Instead, it has built a layered program that treats compute, data, skills, applications, safety, and diplomacy as separate but coordinated tracks, largely run from a single nodal agency. The organizing slogans, articulated by the Ministry of Electronics and Information Technology (MEITY), are "Making AI in India" and "Making AI Work for India", a dual mandate that treats domestic AI capability-building and mass-market AI adoption as equally important, rather than sequencing one before the other.[170]

This framing is deliberate. India's AI policy sits downstream of a broader conviction, shaped by the success of the India Stack (Aadhaar, UPI, DigiLocker), that state-built digital public infrastructure (DPI), when opened to private developers, can achieve adoption at a scale and cost that neither pure market competition nor pure state provision can match on its own. AI policy is being built on the same logic: the government provides subsidized infrastructure and public datasets, private and academic actors build applications on top of them, and adoption is driven by government-anchored use cases in agriculture, health, education and governance before it diffuses into the broader economy.

The second organizing idea is regulatory restraint. India has explicitly chosen not to enact a standalone AI law of the kind the EU has pursued. The stated position of MEITY leadership is that existing statutes such as the Digital Personal Data Protection (DPDP) Act 2023, the Information Technology Act 2000, consumer protection law, and sector regulators such as the Reserve Bank of India (RBI), SEBI, and IRDAI already cover most AI-related harms, and that a horizontal AI statute at this stage would slow adoption more than it would reduce risk.[171]

Institutional Architecture I The IndiaAI Mission

The IndiaAI Mission, approved by the Union Cabinet in March 2024 with an outlay of ₹10,371.92 crore (approximately US$1.25 billion) over 5 years, is the structural spine of India's AI policy.[172] It is implemented by IndiaAI, an Independent Business Division under the Digital India Corporation within MEITY, and is organized into 7 pillars:

- **IndiaAI Compute:** Subsidized, impaneled GPU capacity for startups, researchers, and academic institutions, procured through a public-private empanelment model rather than direct state ownership of hardware.[173]
- **IndiaAI Foundation Models:** Direct funding for Indian teams to build sovereign large language models, prioritizing Indian languages and domain-specific use cases over general-purpose frontier competition.[174]
- **AIKosh:** A national platform for public, anonymized, and non-personal datasets, intended to reduce Indian developers' dependence on foreign or scraped data.[175]
- **IndiaAI Application Development Initiative (IADI):** Grant funding for deployment-ready AI applications in priority sectors: healthcare, agriculture, governance, climate and assistive technologies.[176]

- **IndiaAI FutureSkills:** Fellowships, graduate programs, and curriculum funding aimed at expanding the domestic AI talent pipeline beyond the existing IT-services base.[177]
- **IndiaAI Startup Financing:** Streamlined funding access for deep-tech AI startups, including a global acceleration track run with Station F and HEC Paris.[178]
- **Safe & Trusted AI:** Funding for indigenous responsible-AI tooling on bias mitigation, machine unlearning, privacy-preserving machine learning and self-assessment frameworks for developers.[179]

While MEITY is the nodal ministry, sector regulators retain authority within their domains. This is a conscious institutional choice: rather than creating a single AI regulator with cross-cutting powers, India has kept sectoral regulators (RBI, SEBI, IRDAI, and line ministries such as Health and Agriculture) as the primary rule-makers for AI within their remit, with MEITY playing a coordinating and infrastructure-provisioning role.

Impact To Date

Three years into implementation, the Mission has produced output, concentrated heavily in the compute pillar, alongside genuine execution gaps that a parliamentary standing committee flagged in March 2026.[180]

Table 2: Impact of IndiaAI Mission to date

Metric	Status (2026)
Compute capacity	Over 38,000 GPUs onboarded from 14 empaneled providers, nearly 3.8 times the original 10,000-GPU target, at a subsidized rate of roughly ₹65/hour.[181]
Compute pillar spending	₹4,563 crore of the ₹10,372 crore outlay, making it the largest single allocation within the Mission.[182]
Sovereign foundation models	Four startups selected to build Indian LLMs including Sarvam AI, SoketAI, Gan AI and Gnani AI; BharatGen launched as the first government-funded multimodal model spanning 22 Indian languages.
AIKosh dataset platform	More than 5,500 datasets across 20 sectors and over 385,000 platform visits.
Applications approved	Over 30 India-specific applications approved under IADI in healthcare, agriculture and cybersecurity.
Skilling	500 PhD fellows and 13,000 graduate students supported under FutureSkills, though the program has fallen short of its original fellowship targets.
Multilingual access	Bhashini platform: 20 Indian languages, 350+ AI models, 1 million+ downloads, integrated with services such as Indian Railways.
Budget execution	Only 32% of the 2025-26 allocation was utilized by December 2025; the Finance Ministry cut the 2026-27 IndiaAI Mission allocation by roughly 50%.[183]

While the compute pillar offers GPU at subsidized rates for early-stage AI startups, the application and skilling pillars have moved more slowly, and the parliamentary panel's findings around low fund utilization, missed fellowship targets, and a mid-course budget cut point to an implementation gap between policy design and delivery capacity, a pattern consistent with other large Indian digital-infrastructure programs in their early years.

Regulatory Philosophy I Governance Without a Statute

On November 5, 2025, MEITY released the India AI Governance Guidelines, the clearest articulation yet of how the government intends to regulate AI without new primary legislation.[184] The Guidelines were produced by a drafting committee constituted in July 2025, informed by public consultation, and organized around seven guiding principles, referred to as "sutras": Trust, People First, Innovation over Restraint, Fairness and Equity, Accountability, Understandable by Design, and Safety, Resilience and Sustainability.

The operative choice embedded in the Guidelines is a "techno-legal" approach: existing law is applied to AI systems (the DPDP Act for personal data, the IT Act for platform obligations, sectoral law for financial or health-specific risk) rather than creating a new AI-specific statute; compliance is encouraged through voluntary self-certification, regulatory sandboxes and design-stage safeguards rather than prescriptive, ex-ante mandates; and rule-making authority for AI within a sector sits with that sector's existing regulator. The RBI's own FREE-AI Framework, submitted in August 2025 with seven finance-specific principles, is the most developed example of this sectoral model in practice.[185]

The Guidelines also recommend new coordinating institutions rather than a new regulator: an AI Governance Group (AIGG) as a small, permanent inter-ministerial policy body; a technical secretariat within MEITY; and mechanisms for an India-specific AI incident database and risk classification framework, most of which remain at the design stage rather than operational. The explicit position of MEITY's Secretary at the Guidelines' launch was that the government's focus is on "using existing legislation wherever possible," with human-centricity and harm mitigation as the operating test rather than a compliance checklist.

Global Positioning I The AI Impact Summit

India used its February 2026 India AI Impact Summit to convert domestic policy into international standing.[186] The summit drew participation from more than 100 countries, over 100 global AI CEOs, and an estimated 5 lakh (500,000) in-person attendees, making it one of the largest AI-focused gatherings to date.

Its central diplomatic output, the New Delhi Declaration on AI Impact, was eventually endorsed by 92 countries and organizations, including the United States, China, the United Kingdom, Russia, and the EU member states present.[187] Structured around three "sutras" around People, Planet, and Progress and seven thematic "chakras," the Declaration committed signatories to voluntary, non-binding mechanisms: a Charter for the Democratic Diffusion of AI, intended to widen access to foundational AI resources for lower-income countries, and a Global AI Impact Commons for sharing scalable AI use cases. The summit also announced an expansion of India's sovereign compute pool and formalized India's participation in emerging multilateral AI coordination structures.

The strategic intent is legible: having built the domestic infrastructure and governance narrative first, India positioned itself as the natural convening power for the Global South's AI agenda, shifting the international conversation from the risk-focused framing of the UK's 2023 AI Safety Summit toward an access-and-diffusion framing that plays to India's comparative position as a large, price-sensitive, multilingual adopter market rather than a frontier-lab economy.[188]

How the Policy Thinking is Evolving

The following tensions are shaping the next phase of India's AI policy and are visible in current public debate.

- **Access must translate into utilization:** The expansion of subsidized compute is valuable only if startups, researchers and smaller firms can access it, obtain sufficient compute time, and use it to move from experimentation to commercial deployment.
- **Public datasets must become genuinely usable:** AIKosh will need continued investment in data quality, documentation, interoperability, licensing clarity, privacy protection and mechanisms for researchers and firms to provide feedback on datasets.
- **India's foundation-model strategy will need to prioritize differentiated capability:** India is unlikely to outspend the largest global technology companies on frontier-scale models. Its comparative advantage may instead lie in multilingual models, efficient models, domain-specific systems, edge AI, and applications designed around Indian conditions.
- **Regulation must remain proportionate and adaptive:** The India AI Governance Guidelines provide a foundation, but their effectiveness will depend on implementation. Risk classifications should be evidence-based, regulatory sandboxes should provide genuine space for experimentation, and compliance requirements should not impose disproportionate costs on startups and research institutions.
- **Sovereignty on borrowed hardware:** India's compute build-out runs almost entirely on NVIDIA GPUs procured through empaneled cloud providers. This creates a structural dependency: the same U.S. export-control authority that previously restricted access to advanced chips for other countries poses a latent risk to India's compute roadmap, notwithstanding chip-access protections included in the February 2026 U.S.-India interim trade framework. Sovereign compute, in its current form, is sovereign in funding and allocation control, not in the underlying hardware supply.
- **Execution capacity behind policy ambition:** The parliamentary standing committee's March 2026 findings on low fund utilization and missed skilling targets, along with a 50 percent cut to the following year's budget request, indicate that the Mission's institutional delivery capacity has not kept pace with its design ambition.[189] This mirrors an early-stage pattern seen in other large Indian public programs, where infrastructure pillars (which involve procurement and empanelment) move faster than human-capital pillars (which require building new training and placement pipelines from a smaller base).

The direction of travel from these tensions is a shift from an infrastructure-first posture toward a more balanced one: expect increased emphasis on the AIKosh data pillar, formalization of the AI Governance Group via the recently set-up AI Governance and Economic Group and Technology and Policy Expert Committees, and continued preference for sectoral regulation over a horizontal AI law, at least through the current Mission cycle to 2029.[190]

Implications

For organizations assessing India as an AI market, three points in this policy architecture are directly relevant to operations. First, subsidized compute access is real and material; GPU pricing roughly 60 percent below global benchmarks is currently the single most consequential lever the Indian government offers to AI builders, ahead of grants or tax incentives. Second, regulatory obligations for AI in India today are set by existing sectoral laws rather than a dedicated AI statute: compliance planning should map to the DPDP Act, RBI/SEBI/IRDAI rules where relevant, and the voluntary AI Governance Guidelines, rather than anticipating a horizontal AI Act in the near term. Third, government-anchored application pillars such as IADI grants, AIKosh datasets, and Bhashini's multilingual infrastructure signal where public-sector demand and public data will first concentrate: agriculture, health, governance, and multilingual citizen services, ahead of general-purpose commercial AI adoption.

INDONESIA

Paramadina Public Policy Institute (PPPI), By Ahmad Khoirul Umam

The global race to regulate AI is unfolding in an increasingly volatile geopolitical and geoeconomic context. Trade fragmentation, export controls on semiconductors, and bifurcation of AI value chains across the United States and Chinese ecosystems now define the terms on which emerging economies must build their own AI capacity.[191] For a middle power such as Indonesia, such uncertainty is not abstract. The digital economy of Indonesia in 2025 was the largest in Southeast Asia, at an estimated $99 billion in gross merchandise value.[192]

However, the cloud infrastructure, semiconductors, and foundation models that drive that economy are still almost entirely in foreign hands. Indonesia is thus faced with the dilemma that most emerging digital economies face today: how to legislate for AI without stifling nascent domestic innovation or losing strategic autonomy to external technology powers. This article argues that Indonesia's evolving AI policy architecture must resolve five interlocking tensions to convert Indonesia's demographic and market scale into durable technological sovereignty, rather than perpetual regulatory catch-up, anchored in the National AI Strategy (Stranas KA 2020 to 2045), the Personal Data Protection Law of 2022, and the 2023 ministerial circular on AI ethics.

Indonesia has deliberately been lax in regulating AI. There are nine values of ethics, including transparency, accountability, and inclusivity, in the Ministry of Communication and Digital Affairs (Kominfo) Circular Letter Number 9 of 2023, but these are only nonbinding recommendations and not an enforceable law.[193] One reason for the delay of a more binding Presidential Regulation on AI, initially planned for 2025 and now for 2026, was to avoid discouraging early-stage investment in a still fragile startup ecosystem.[194]

There is a real and defensible dilemma about measuring ambiguity. Too much regulation could push Indonesian startups out of a race already dominated by well-capitalized U.S. and Chinese firms, while the regulatory vacuum leaves consumers and smaller developers at the mercy of unaccountable systems. Confronted with these pressures, Kominfo's National AI Roadmap 2025–2029 chooses to implement regulatory sandboxes and incremental, risk-based obligations rather than comprehensive, rules-based obligations.[195] ASEAN is increasingly deploying this model but

institutional capacity needs to be sustainable to monitor compliance when pilots move to binding law.

Table 3: Selected indicators of Indonesia's AI and digital policy landscape, 2023–2026

Indicator	Value
Digital economy GMV, 2024	US$90 billion (+13% YoY)
Digital economy GMV, 2025 (est.)	US$99 billion
Government AI Readiness Index rank	42nd of 188 countries
Public view of AI as "more helpful than harmful"	80% of respondents
PDP Law full compliance deadline	October 2026
PDP Law noncompliance penalty	Up to IDR 2 billion or 2% of annual revenue
Jobs exposed to AI, low-income economies (avg.)	~26%, vs. 60% in advanced economies

Indonesia's Personal Data Protection Law (Law Number 27 of 2022) took effect in October 2024 after a two-year transition period, and noncompliance will incur penalties of up to 2 billion rupiah or 2 percent of annual revenue from October 2026 onward.[196] Ministerial Regulation Number 5 of 2020 requires that some data, especially data processed by public service providers, be stored domestically. But Indonesia's AI infrastructure, cloud computing capacity, graphics processing clusters, and most large language models are still almost entirely foreign-supplied.

This creates a structural asymmetry, in which Indonesia can control the use of data within its borders, but has little leverage over the infrastructure layer on which that data ultimately runs. Bridging this gap will demand consistent public investment in sovereign computing capacity, as well as industrial policy that addresses access to data centers and semiconductors as a matter of national infrastructure, not just private commercial arrangements.

The overwhelmingly English language and Western-sourced corpora used to train generative artificial intelligence systems pose a distinct risk to Indonesia's linguistic and cultural diversity. Indonesia has taken the UNESCO Recommendation on the Ethics of Artificial Intelligence as a reference and has started piloting UNESCO's Readiness Assessment Methodology to identify governance gaps.[197] However, Indonesia's copyright regime, still based on Law Number 28 of 2014, has not yet been revised to clarify whether AI training on copyrighted Indonesian literary, musical, and audiovisual works is fair use or infringement, leaving local creative industries in a legal grey zone that larger jurisdictions like the EU have already begun to resolve through explicit text-and-data-mining exceptions or licensing requirements. When unresolved, this ambiguity discourages digitization of Indonesian cultural content at a time when such content is most needed to reduce model bias against Bahasa Indonesia and the country's hundreds of regional languages.

According to the International Monetary Fund, almost 40 percent of jobs globally are at risk from AI, with the share hitting 60 percent in advanced economies but closer to 26 percent in low-income countries, putting Indonesia at an intermediate but growing level of exposure as automation moves from manufacturing into services.[198] Public opinion has been unusually receptive,

encouragingly. Recent AI readiness research on survey data found that 80 percent of Indonesians consider AI to be more helpful than harmful, one of the highest shares recorded in the world, and far above the 36 to 40 percent recorded in the United States, Canada, and the Netherlands.

That optimism is an asset for policymakers to build on, but only if they can match it with credible infrastructure for upskilling. Existing programs such as Kominfo's Digital Talent Scholarship and BRIN's applied-AI training pilots are still tiny by the standards of a workforce of some 140 million, highlighting the necessity to integrate AI literacy into vocational and higher-education curricula at much greater scale and speed.

So far, Kominfo and sector regulators such as the Financial Services Authority have led the AI governance process in Indonesia, with the latter's 2025 AI Governance Guidebook for banking offering a promising sector-specific model of oversight. Civil society organizations such as Southeast Asia Freedom of Expression Network (SAFEnet) have put forward independent critiques of shortcomings in the implementation of Stranas KA, noting that its governance recommendations are largely aspirational, without dedicated funding or a lead coordinating ministry.[199]

Technical input is provided by universities and research bodies such as the National Research and Innovation Agency (BRIN), but formal consultation mechanisms linking academia, civil society and industry to the drafting of the pending Presidential Regulation remain informal and inconsistently documented, with public comment periods announced ad hoc rather than mandated by law. A more institutionalized approach, such as the multistakeholder consultation processes used to develop the European Union's AI Act or Singapore's Model AI Governance Framework, would improve both the legitimacy and technical quality of Indonesia's eventual binding AI law, while reducing the risk that the rules, once finalized, are disproportionately captured by the largest incumbent technology firms.

The main challenge for Indonesia, then, is not a lack of ambition but rather a lack of institutional sequencing: how to translate a strong national strategy and a uniquely high level of public trust into enforceable, well-resourced regulation before infrastructure dependency and cultural bias become structural. At its heart, it has scale, demographics, and a degree of public acceptance of AI that few countries have at the same time. Indonesia is not starting from scratch. Through the Personal Data Protection Law, the National AI Roadmap 2025-2029, and Stranas KA, Indonesia has a fairly coherent policy scaffold that many peer economies still lack. And sector regulators, such as the Financial Services Authority, have shown that workable, risk-based rules can be written without waiting for an omnibus AI law.

What is left is the ability to execute. Such a policy architecture, binding yet proportionate regulation of AI, combined with persistent investment in sovereign infrastructure, reforming copyright rules, large-scale upskilling, and institutionalized multistakeholder consultation, would allow Indonesia to turn the current momentum of its digital economy into sustainable technological sovereignty, and could position the country not just as a large consumer market for foreign artificial intelligence systems, but as a credible rule-maker in the emerging Southeast Asian AI governance order, rather than a perpetual state of regulatory catch-up.

ITALY

Competere and I-Com, By Pietro Paganini and Stefano da Empoli

Introduction

AI is becoming a decisive driver of industrial competitiveness, administrative productivity, and service innovation. In the European context, the challenge is to ensure that AI policy does not become merely a regulatory exercise, but also serves as a strategy for strengthening productivity, investment, and technological adoption. For Italy, this means not trying to compete with the United States or China on the scale of foundation models, but becoming a leader in applied AI for the real economy: manufacturing, agrifood, health, public services, and strategic supply chains.

Public policy can play an enabling role by creating the right conditions for experimentation, investment, digital infrastructure, innovative procurement, and technology transfer. The Italian examples reveal a promising, albeit still fragmented, trajectory: AI can strengthen companies, territories, and public services, provided that regulation does not stifle innovation and instead helps translate it into concrete applications.

CINECA and the Leonardo Supercomputer

Background

The Leonardo supercomputer, hosted by CINECA at the Bologna Technopole, is one of Europe's most powerful high-performance computing (HPC) systems and forms part of the EuroHPC infrastructure. It demonstrates that AI policy is not only about regulation and software development, but also about strategic computing infrastructure capable of supporting research, innovation, and industrial competitiveness.

CINECA is Italy's leading public supercomputing center. Established in 1969, it is a nonprofit consortium bringing together 102 Italian universities, research organizations, and public institutions, including the ministries responsible for universities, research, and education. Its mission is to provide advanced computing services to researchers, public authorities, and businesses, enabling scientific research and technological innovation across a wide range of sectors.

The Initiative

Leonardo is CINECA's flagship high-performance computing system. Located at the DAMA Technopole in Bologna, it was developed through a joint investment of €120 million by the EU and the Italian Ministry of University and Research, becoming fully operational in August 2023.

With a peak performance of around 241 petaflops and storage capacity exceeding 100 petabytes, Leonardo entered the global ranking as the world's fourth most-powerful supercomputer in 2022 and has remained among the global leaders, ranking twelfth in June 2026. Its computing capacity enables researchers and companies to analyze massive datasets and train increasingly sophisticated AI models in significantly less time than conventional computing systems.

Access to Leonardo is granted through competitive calls evaluated by independent experts. Researchers, companies, and public institutions can apply for computing resources to support

projects in AI, climate modeling, engineering, advanced materials, genomics, personalized medicine, cybersecurity, and energy.

Evidence and Early Results

Demand for the system has been strong since its launch. During the initial early-access phase in 2023, 21 projects used more than 133 million computing hours. Subsequently, 12 large-scale European research projects received approximately 380 million additional computing hours.

Leonardo has also enabled European start-ups to develop advanced language models and AI applications that would otherwise require computing resources available mainly to large global technology companies.

Since 2025, Leonardo has served as the technological backbone of the IT4LIA AI Factory, an initiative that provides start-ups, SMEs, researchers, and public administrators with access not only to high-performance computing, but also to datasets, technical expertise, training, and specialized support. In June 2026, the infrastructure was further strengthened through the introduction of LISA, a new computing system specifically designed to support large language models and generative AI applications.

Policy Relevance

The Leonardo case illustrates that building competitive AI ecosystems requires more than effective regulation. It also depends on sustained investment in strategic computing infrastructure, specialized expertise, and mechanisms that make advanced computational resources accessible to researchers, start-ups, and businesses. Italy's approach demonstrates how public investment in shared digital infrastructure can strengthen both scientific excellence and industrial innovation.

Strategy for Attracting Foreign Investment in Data Centers

Background

AI depends not only on algorithms and data, but also on the physical infrastructure needed to store information, operate cloud services, and train or run computationally intensive models. Data centers have therefore become a strategic component of AI competitiveness, digital sovereignty, and the resilience of public and private services.

In November 2025, the Ministry of Enterprises and Made in Italy (MIMIT) published a national strategy to attract foreign industrial investment in data centers, following a consultation involving central and local authorities, industry associations, and private operators. The strategy notes that Italy's colocation market reached €654 million in 2023, up 10 percent from the previous year, but also identifies fragmented permitting, energy costs, and uneven territorial rules as barriers to further growth.

The Initiative

The strategy combines investment promotion with administrative, territorial, and environmental policy. Its priorities include recognizing data centers as a distinct industrial activity; simplifying authorization procedures; developing uniform rules and predictable timelines; mapping suitable sites, especially disused industrial areas; strengthening electricity grids, renewable generation, and storage; promoting water reuse and heat recovery; and developing specialized technical skills.

Implementation is supported by practical tools. Since January 2025, data center activities have been explicitly included in the explanatory notes to ATECO code 63.10.10. The Invest in Italy portal provides investors with information on potential locations, while the planned enhancement of SINFI, the national infrastructure map, is intended to combine data on fiber networks, submarine-cable landing points, Internet exchange points, electricity infrastructure, renewable generation, industrial sites, and environmental risks. According to MIMIT, reusing a partly equipped site can shorten construction timelines by as much as two years.

The regulatory framework has also begun to evolve. Article 8 of Decree-Law No. 21/2026, converted into law by Law No. 49/2026, established a single authorization procedure for new data centers, expansions to existing facilities, and related electricity-grid connections. Parliament is considering a broader framework as well: the Chamber of Deputies approved the consolidated bill in February 2026, and the measure is now under examination in the Senate as Bill S. 1821.

Evidence and Early Results

Italy has moved from a strategy document to an operational package that includes a clearer industrial classification, site-selection tools, national and regional coordination mechanisms, and a single authorization procedure. These measures directly address the regulatory uncertainty and administrative fragmentation highlighted by investors.

Recent announcements also point to an expanding investment pipeline. In June 2026, MIMIT reported a proposal by K2 Strategic for a hyperscale campus south of Milan, involving potential investment of up to €5.3 billion and approximately 300 megawatt (MW) of capacity. The Ministry also announced a new Equinix project in Lombardy and established a contact group with the regional government to coordinate authorization procedures and the projects' possible designation as being of strategic national interest.

Policy Relevance

The data center strategy shows that innovation-oriented AI policy must address permitting, energy, connectivity, skills, and territorial planning alongside research and regulation. By reducing transaction costs and making suitable sites easier to identify, public policy can improve investment conditions. Its success, however, should ultimately be measured by completed projects, geographic diversification, additional computing capacity, environmental performance, and durable benefits for local economies.

MADE Competence Center and AI4I

Background

Italy's strategy to accelerate AI adoption in industry relies on institutions that bridge the gap between cutting-edge research and practical industrial applications. The partnership between the MADE Competence Center and AI4I (the Italian Institute of Artificial Intelligence for Industry) represents one of the country's most important initiatives in this area, particularly for SMEs.

The MADE Competence Center is a public-private technology-transfer hub established in 2019 under Italy's National Industry 4.0 Plan. Based at Politecnico di Milano, it helps manufacturing companies experiment with and adopt advanced digital technologies before committing to large-scale investments. Its 2,500-square-meter demonstration facility reproduces real industrial production processes and hosts technologies including AI, robotics, digital twins, predictive maintenance, and automated quality control.

AI4I is a national research institute established by the Italian Government in 2024 and based in Turin. Its mission is to develop advanced AI research and accelerate its application across manufacturing and other strategic industrial sectors. While MADE works directly with companies on technology testing and implementation, AI4I contributes research expertise, advanced computing resources, and links with start-ups and AI developers.

The Initiative

In June 2025, MADE and AI4I signed a strategic cooperation agreement to accelerate the adoption of AI across Italian manufacturing. The initiative focuses primarily on SMEs, which often lack the specialized skills, data, and financial resources needed to develop AI solutions independently.

The partnership combines MADE's expertise in technology transfer and industrial processes with AI4I's research capabilities and computing infrastructure. Companies can receive technical advice, specialized training, and support in identifying the AI applications best suited to their business needs.

Through MADE's DRAIVE methodology, firms analyze their production processes, identify opportunities for AI adoption, and develop implementation roadmaps. AI4I's SUK platform complements this process by connecting companies with start-ups and technology providers capable of delivering appropriate AI solutions. The two organizations also provide access to high-performance computing resources and jointly participate in national and European innovation programs.

In practice, participating companies can deploy predictive maintenance systems based on sensor data, computer vision for automated quality inspection, collaborative robotics, and AI-driven optimization of production planning, energy consumption, and supply-chain management.

Evidence and Early Results

Evidence of the model's reach is already emerging. Since its establishment, MADE has completed more than 495 innovation projects and delivered over 690 training courses for companies.

Its AI portfolio alone includes 22 dedicated AI projects involving 20 companies, reflecting growing demand for practical solutions capable of moving from experimentation to large-scale industrial deployment. The collaboration with AI4I further strengthens this model by integrating advanced AI research, computing capacity, and technology transfer into a single innovation ecosystem.

Policy Relevance

The partnership between MADE and AI4I demonstrates that successful AI adoption in manufacturing depends not only on technological innovation, but also on institutions capable of translating research into practical industrial solutions. By combining research excellence, technology transfer, industrial testing, and business support, the initiative reduces the barriers that often prevent SMEs from adopting AI and offers a model for strengthening industrial competitiveness through applied AI.

AgID Guidelines on AI Development and Procurement

Background

Public administrations face a distinctive challenge when adopting AI. They must identify useful applications and procure rapidly evolving technologies while safeguarding fundamental rights,

public oversight, cybersecurity, data quality, and continuity of service. Traditional procurement procedures are often poorly suited to systems whose performance depends on data, model updates, and continuous monitoring after deployment.

The Agency for Digital Italy (AgID) is the public body entrusted with the mission of fostering and supporting the digitalization process of Italian Public Administrations. More recently, AgID was designated, together with the National Agency for Cybersecurity (ACN), as the national authority for AI, being called to enforce the EU AI Act for Italy.

The Initiative

Through Determination No. 43/2026, AgID launched a public consultation on two new documents: guidelines for developing AI systems and guidelines for AI procurement in public administration. The consultation ran from March 12 to April 11, 2026. The development guidelines cover the entire AI lifecycle—from planning and data preparation to model construction, testing, deployment, monitoring, and retirement. They also address reference architectures, cybersecurity, the roles of human operators, hardware neutrality, portability, and reversibility.

The procurement guidelines translate these principles into procurement decisions. They help administrations classify systems and assess their risk levels, select appropriate sourcing and deployment models, estimate whole-life costs, and specify contractual requirements. Particular attention is paid to data governance, explainability, auditability, human oversight, security, service levels, post-deployment monitoring, and exit strategies designed to limit technological lock-in.

AgID has paired the guidelines with reusable operational tools, rather than leaving administrations with principles alone. These include a common glossary; guidance on training, validation, fine-tuning, and retrieval-augmented generation; a model technical specification; and an example application of the Levelized Cost of Artificial Intelligence (LCOAI) metric. The model specification includes templates for risk management, testing, key performance indicators, service levels, an AI bill of materials, data portability, and a supplier exit plan.

Evidence and Early Results

Because the development and procurement documents were published as drafts, the available evidence concerns institutional readiness rather than measured improvements in public services. The principal early output constitutes a shared methodology that public buyers can use to compare solutions, make lifecycle costs transparent, and define requirements that remain verifiable once a system enters operation.

The accompanying templates are especially relevant for smaller administrations that may lack specialist AI procurement teams. They can reduce duplicated design work and create a more consistent dialogue with suppliers. At the same time, there is as yet no public evidence of cost savings, shorter procurement cycles, or improved system performance attributable to the guidelines. These outcomes should be assessed once the guidelines have been finalized and implemented.

Policy Relevance

The AgID guidelines demonstrate how public procurement can become an instrument of innovation policy. Clear, reusable requirements can create demand for secure, interoperable, and auditable AI, improve market access for suppliers able to meet common standards, and reduce dependence

on individual vendors. The enabling effect will depend on proportionate implementation, regular updates, and investment in administrative capabilities so that compliance tools support experimentation rather than create a new barrier to adoption.

Reg4IA Project

Background

Many public services are well suited to applied AI—such as health care, mobility, environmental monitoring, tourism, territorial management, and administrative procedures—and are delivered or organized at the regional level. This creates opportunities for experimentation close to users but also creates a risk that individual territories will develop isolated pilots that cannot be reused elsewhere.

Regions for Artificial Intelligence (Reg4IA) was created to address this coordination problem. Promoted by the Department for Digital Transformation together with Italy's regions and autonomous provinces, the project builds on the 2023 agreement "Together for Digital Transformation" subscribed by the National Government and the Conference of Regions and Autonomous Provinces.

The Initiative

Presented in Genoa on March 11, 2026, Reg4IA has a budget of €20 million from the Fund for Technological Innovation and Digitalization. It brings together all Italian regions and autonomous provinces in four interregional hubs led by Liguria, Lombardy, Puglia, and Tuscany. Each partnership develops proof-of-concept solutions in a specific policy area, shares technical expertise, and seeks to make successful components reusable and replicable nationwide.

The health and tourism hub brings together Liguria, six partner regions, and the Autonomous Province of Trento. Its €6.5 million project focuses on forecasting health care demand, dynamically allocating resources, managing appointment schedules and bookings, reducing missed appointments, and analyzing tourism flows to improve visitor distribution and personalize the visitor experience. The work also includes predictive models and digital twins designed to anticipate how health care needs will evolve across different areas.

The other three hubs apply the model to different public functions. Lombardy and Veneto are developing a federated "smart land" architecture for environmental data and sustainable mobility. Puglia coordinates a partnership that uses AI to support human decision-making in policymaking and in technical and administrative processes. Tuscany leads a project on territorial resilience and security that combines AI with a 5G pilot to monitor infrastructure and environmental risks, support emergency management, and improve spatial planning.

Evidence and Early Results

Reg4IA remains at the implementation stage, so verified service outcomes are not yet available. Its first concrete outputs are the formation of four partnerships covering all Italian regions and autonomous provinces, the allocation of dedicated funding, and the definition of specific use cases rather than generic commitments to adopt AI.

The next phase should therefore be assessed through common indicators: changes in waiting times and missed appointments, processing times for administrative procedures, the accuracy of

environmental and risk forecasts, service quality, and, crucially, the number of solutions successfully reused by partner regions.

Policy Relevance

Reg4IA offers a model of multilevel AI governance in which national coordination provides funding and common direction while regional administrations test solutions in real-world service environments. This structure can reduce duplication, pool scarce expertise, and create a path from local proof of concept to nationwide reuse. Its long-term value will depend on interoperable data, clear legal and organizational responsibilities, rigorous impact evaluation, and sustained funding beyond the pilot phase.

Conclusion

These examples show that innovation-oriented AI policy should not be limited to regulating risks. It should also create the conditions for companies, public administrations, and territories to test, adopt, and scale concrete solutions.

For Italy, the priority is to build an applied AI model capable of strengthening strategic sectors and increasing national productivity. This requires infrastructure, skills, innovative public procurement, cooperation between research and industry, and a predictable regulatory framework.

The challenge is not merely technological; it is most of all political and industrial. Italy must use AI to become more competitive and efficient and better able to translate innovation into growth.

MEXICO

Fundación IDEA, By Carolina Agurto

AI Policy and Innovation in Mexico

The growing use of AI across various economic sectors has begun to reshape the way governments and institutions design strategies for innovation, digitalization, and competitiveness. In Mexico, the development of a public policy on AI is not yet reflected in a comprehensive law or a consolidated national strategy, but rather in a combination of emerging institutional capacities, digital modernization, regulatory reorganization, and subnational efforts aimed at technological transformation.

Regulations and initiatives in Mexico to introduce AI as a tool for innovation remain fragmented and uneven. However, there are already significant signs of institutional development, particularly in the areas of digital government, telecommunications, administrative digitization, and regional innovation hubs. At the same time, various economic sectors—health care, manufacturing, agribusiness, fintech, and education—are already demonstrating concrete examples of AI use to improve productivity, decision-making, and operational capabilities.

The most significant aspect of the Mexican case is that the true laboratory for AI innovation appears to be emerging at the local level, rather than the federal level. States such as Jalisco, Querétaro, and Mexico City are beginning to develop distinct models for technology adoption, digital regulation, and capacity building related to AI.

Regulatory and Institutional Frameworks Related to AI

Agency for Digital Transformation and Telecommunications (ATDT)

The creation of the Agency for Digital Transformation and Telecommunications (ATDT) is likely the most significant institutional development related to AI and digital transformation in Mexico. Its Internal Regulations were published in January 2025, followed by the release of the 2025–2030 Sectoral Program, which aims to coordinate capabilities in digital government, technological infrastructure, cybersecurity, telecommunications, administrative streamlining, and data intelligence.

The importance of the ATDT lies in the fact that it brings together functions related to interoperability, digital infrastructure, and technology governance—fundamental elements for the future adoption of AI tools in both government and the productive sectors. Although it does not yet constitute a comprehensive AI policy, it does serve as an enabling platform for government digitalization and technological modernization.

The initiative aims to promote innovation through:

1. Administrative modernization and digitization of public services.
2. Strengthening institutional capacity in data and technology.
3. Coordination of digital infrastructure and connectivity.
4. Development of government capacity for automation and data analysis.

However, significant limitations remain; institutional capacity still needs to be translated into operational standards, budgets, evaluation metrics, and clear technology governance mechanisms.

Jalisco: Digital Governance and Institutional Capacity

Jalisco is likely the Mexican state that is most clearly attempting to develop a subnational public policy related to AI and digital governance. In 2024, the state government presented an "Artificial Intelligence and Data Governance Policy," designed as a strategic and ethical framework for the government's use of AI.

The document seeks to establish a strategic framework for the government's use of AI based on data governance, algorithmic ethics, digital sovereignty, and the responsible use of emerging technologies. The initiative aims to strengthen institutional capacities for data analysis, automation, and public sector modernization, aligning with international digital governance trends promoted by the OECD and various European cities.

In addition, Jalisco has developed specific institutional capabilities through government departments focused on technological innovation, automation, geomatics, analytics, and data-driven decision-making. At the same time, the state is promoting digital literacy programs, teacher training, and the incorporation of AI into educational processes.

The strategy aims to promote innovation by:

1. Building institutional capacity in AI and data.
2. Automation and modernization of government processes.

3. Human capital development and digital literacy.
4. Strategic use of data for public decision-making.

Even so, the model faces significant limitations: there is a lack of budgetary clarity, many components remain at the planning stage, and there is still no comprehensive industrial and technological strategy centered on AI.

Querétaro: Digital Infrastructure and Computing Capacity

Querétaro is rapidly establishing itself as Mexico's leading hub for digital infrastructure related to AI, cloud services, and advanced computing capabilities. In recent years, the state has attracted significant investments in data centers, hyperscale infrastructure, and the expansion of international cloud services, including projects linked to AWS/Amazon and CloudHQ.

Querétaro's strategic importance lies in the fact that the AI economy is critically dependent on physical infrastructure: computing power, storage, energy, fiber optics, and connectivity. In this regard, the state is beginning to position itself as Mexico's leading data center hub and possibly as the most important physical hub for the deployment of AI capabilities in the country.

Unlike other subnational models that focus more on regulation or digital governance, the case of Querétaro follows an approach more akin to indirect technology industrial policy. The combination of digital infrastructure, investment attraction, connectivity, and energy capacity is beginning to create the material conditions for the expansion of cloud services, data processing, and the adoption of AI by businesses.

The strategy aims to promote innovation through:

1. Expansion of hyperscale infrastructure and data centers.
2. Enhancement of computing and storage capabilities.
3. Attraction of international technology investment.
4. Integration of cloud services and advanced connectivity.
5. Development of regional capabilities related to the digital economy.

The case also highlights some of the most significant challenges facing Mexico's AI ecosystem. Much of the momentum continues to be driven by private investment, and there is still no formal government AI strategy comparable to more institutionalized models. Furthermore, energy bottlenecks pose a significant risk to the future expansion of computationally intensive digital infrastructure.

Even with these limitations, Querétaro is likely already the most important state in Mexico in terms of physical AI infrastructure.

Specific Examples of AI and Innovation in Mexico

Health: AI and Precision Medicine

One of the strongest examples of AI applied in Mexico's public sector comes from the Mexican Social Security Institute (IMSS), which developed an AI tool to predict how melanoma patients will respond to immunotherapy. The project's approach involves using data analysis and predictive

models to improve personalized medicine and treatment stratification. The case is significant because it demonstrates how AI is beginning to be integrated into clinical processes and medical decision-making within the public health system.

The initiative aims to promote innovation through:

1. Application of AI in precision medicine.
2. Integration of data analysis into clinical processes.
3. Strengthening of hospital technological capabilities.
4. Modernization of public health services.

Advanced Manufacturing and Nearshoring

In manufacturing, Nissan Mexico reported tangible results stemming from digital transformation and industrial automation initiatives at its Mexican plants. Based on the World Economic Forum's SIRI (Smart Industry Readiness Index) framework and a predictive system called Smart-E Tools, the company has streamlined key manufacturing processes, achieving a 3 percent reduction in maintenance failures and providing specialized training for more than 20 leaders in collaboration with MIT.

This case is particularly relevant in the context of nearshoring and advanced manufacturing, where the adoption of AI, analytics, and automation is beginning to be integrated into production chains focused on productivity and industrial resilience.

The initiative aims to promote innovation through:

1. Industrial automation and predictive maintenance.
2. Integration of advanced analytics into manufacturing.
3. Development of specialized technical skills.
4. Improved operational efficiency.

Fintech Ecosystem and Financial Analytics

The financial sector remains one of the most advanced environments for technology adoption and digital experimentation in Mexico. Fintech regulations, including standardized APIs and innovative models supervised by the CNBV and Banxico, have enabled the growth of a broader digital ecosystem. As an illustrative example, the fintech company Konfío reports using AI and data analytics to streamline credit assessment processes for SMEs.

The initiative aims to promote innovation through:

1. Expansion of digital credit and payment models.
2. Use of AI for financial analysis and risk assessment.
3. Regulatory experimentation in financial services.
4. Greater access to technology for SMEs.

Academic Institutions as Drivers of AI Innovation in Mexico

Mexican academic institutions are increasingly integrating AI into research, professional training, and institutional modernization strategies, particularly through leading universities and specialized public institutions that are beginning to position themselves as strategic actors within Mexico's digital economy. The Universidad Nacional Autónoma de México (UNAM) has developed interdisciplinary AI initiatives through specialized laboratories, AI and data science academic programs, and a digital repository containing approximately 725 academic and research resources related to AI that have been produced at the UNAM. Similarly, the Instituto Politécnico Nacional (IPN) has strengthened AI capabilities through the Artificial Intelligence Engineering program which provides a solid foundation in programming, algorithms, data structures, and computer science theory, aiming to apply these tools into practical AI projects. Within the legal and criminal justice field, the Instituto Nacional de Ciencias Penales (INACIPE) has also begun incorporating AI-related analysis into academic discussions, programs related to AI and specialized publications focused on legal expert systems, explainable AI, digital evidence, and the legal, ethical and human rights implications of emerging technologies in criminal justice and public institutions.

Private universities have also accelerated AI adoption as part of broader digital transformation strategies. Tecnológico de Monterrey has emerged as one of the most advanced institutional models through the incorporation of generative AI tools, the adoption of AI in various academic programs, interdisciplinary AI research groups, partnerships with global technology firms and international academic institutions, and the development of networking strategies through events such as the Institute for the Future of Education Conference in 2025. Likewise, the Universidad de las Américas Puebla (UDLAP) strengthened its position as a regional innovation leader by investing in advanced AI software and hardware, allowing researchers and students to execute large-scale AI models locally without relying on cloud services. UDLAP has integrated this infrastructure into educational simulations, conversational AI evaluation systems, and applied research projects, reinforcing its role in advanced technological training and digital innovation.

The initiative aims to promote innovation by:

1. Strengthening human capital development and specialized digital skills.
2. Integrating AI research into higher education and public policy discussions.
3. Expanding institutional capacity in data analysis, automation, and advanced computing.
4. Promoting collaboration between academia, government, and the private sector.
5. Modernizing educational and professional training systems through digital technologies.
6. Supporting interdisciplinary research on ethics and AI governance.

Nuevo León: Digital Government, AI Adoption, and Regional Innovation Ecosystems

Nuevo León is emerging as one of Mexico's most important regional ecosystems for digital innovation, advanced manufacturing, and technology-driven economic modernization. Recent initiatives demonstrate an accelerating process of government digitization, institutional modernization, and collaboration between the public sector, academia, and private industry aimed at strengthening regional capabilities related to AI, automation, and digital transformation.

One of the most illustrative examples is the Government of Nuevo León's "NLínea" platform, which has been recognized by OECD as an international reference case in public-sector digitalization. The initiative integrates digital identity validation, interoperable citizen records, online administrative procedures, and blockchain-based verification systems into a unified digital government platform designed to streamline interactions between citizens, businesses, and public institutions. The platform reflects broader efforts to modernize administrative capacity, reduce bureaucratic costs, and improve the efficiency of public service delivery.

At the municipal level, governments within the Monterrey metropolitan area have also accelerated digital transformation initiatives in collaboration with civic technology organizations such as Cívica Digital. Projects implemented in municipalities including Monterrey, San Pedro Garza García, and Guadalupe have focused on the digitization of public services, electronic document management, digital signatures, online permitting systems, and administrative interoperability. These initiatives aim to reduce paperwork, improve operational traceability, simplify procedures for citizens and businesses, and strengthen institutional efficiency through digital tools.

Simultaneously, Nuevo León has begun promoting AI adoption through broader innovation and competitiveness strategies. In 2026, the state government announced collaboration initiatives with OpenAI focused on AI training programs for students, entrepreneurs, start-ups, and SMEs. These efforts seek to strengthen workforce readiness, improve technological capabilities, and support the integration of AI tools into productive sectors linked to advanced manufacturing and nearshoring.

The regional innovation ecosystem has also expanded through initiatives such as the Monterrey Digital Hub AI Cluster, which seeks to connect government institutions, universities, technology firms, and industrial actors around applied AI development. The initiative is particularly relevant in sectors such as manufacturing, logistics, energy, and industrial automation, where Nuevo León already maintains strong competitive advantages due to its industrial base and integration into North American supply chains.

These initiatives aims to promote innovation by:

1. Strengthening digital government modernization and online public services.
2. Promoting AI adoption and workforce training for SMEs, start-ups, and industry.
3. Encouraging collaboration between government, academia, and private technology actors.
4. Promoting collaboration between academia, government, and the private sector.
5. Supporting advanced manufacturing, automation, and nearshoring competitiveness.
6. Attracting technology investment and strengthening regional innovation capabilities.

In conclusion, Mexico does not yet have a comprehensive national AI strategy, but it is already beginning to build institutional, regulatory, and technological capabilities that can accelerate innovation across various sectors of the economy. Rather than a unified policy, Mexico's AI ecosystem is emerging from government digitization efforts, digital infrastructure, university-industry collaboration, and academic and business adoption.

The cases of Jalisco, Querétaro, and Nuevo León show that the most significant momentum is likely developing at the subnational level, while sectors such as health care, manufacturing, and

fintech already feature concrete AI applications focused on productivity, automation, and data-driven decision-making. Taken together, these developments suggest that Mexico is in an early but significant stage of building capabilities for the AI economy.

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WESTERN BALKANS (NORTH MACEDONIA)

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The Regional Frame

Every government in the Balkan region operates around the field of two important European instruments. Firstly, the EU AI Act, which is the world's first comprehensive horizontal AI law, which classifies AI systems by risk tier such as, unacceptable, high, limited, and minimal, with attached obligations accordingly. Because accession track countries must align their legislation with the EU acquis, the AI Act effectively functions as the template, and it is thus likely to serve as the main model for AI laws in the region, even in countries that are not yet EU members.[200]

Secondly, the Council of Europe Framework Convention on Artificial Intelligence, which was adopted in May 2024, supplies additional protections for human rights, binding AI development to human rights, democracy, and to respect the rule of law. The result of these frameworks is that all six candidate countries follow a similar strategy where they align their policies with European

standards to gain market access and support for the EU accession, while also competing with each other to attract skilled workers and investments.[201]

The following sections examine AI policies in six Balkan countries: Serbia, Albania, North Macedonia, Montenegro, Kosovo, and Bosnia and Herzegovina.

Serbia

Serbia is the region's pacesetter, as it was one of the earliest movers in Southeast Europe. For the first time, Serbia adopted its national AI strategy in 2019 (covering the years 2020–2025) becoming, by the government's account, one of the first countries in Southeast Europe to take such a step.[202] In January 2025, the Serbian government replaced that document with a second generation "Strategy for the Development of Artificial Intelligence 2025-2030," as the new strategy prioritizes legislative development, innovation, digital infrastructure, and a broader deployment of AI in the public sector. Institutional coordination runs through a newly dedicated Council for Artificial Intelligence, which encompasses different ministries and academia. It is mainly tasked with overseeing the action plan as well as the drafting of the forthcoming AI Law.[203] Though Serbia is not an EU member state, its approach to AI regulation tries to mirror the similar EU AI Act. They both use a risk-based system, which has fewer rules for low-risk AI applications and stricter oversight for high-risk ones.[204] Moreover, Serbia is also a member of the Global Partnership on AI (GPAI), joining many countries that are shaping the path of future AI governance.[205] The quick progress shown by Serbia has resulted in the country placing 39th worldwide in the "2025 Government AI Readiness Index," making it the highest-ranked country in the region, and rising 18th places to its current spot in a short period of time.[206]

Major AI Development Projects in Serbia: From the National AI Platform to the BIO4 Campus

As Serbia is growing rapidly in AI ecosystem capabilities, there have already been a range of initiatives and projects which demonstrate the country's expanding engagement with AI. To begin with, one of the most significant recent developments is the National AI Platform, hosted within Serbia's State Data Center in Kragujevac. The platform is built around NVIDIA-based supercomputing infrastructure that provides the computational infrastructure for AI research, and development. The platform is operated by the Office for Information Technologies and eGovernment and is integrated into Serbia's broader AI Strategy (2020–2025; 2025–2030).[207] In 2023, OECD recognized Serbia's National AI Platform as one of the nine most-innovative public sector AI projects globally.[208] The upgraded National AI Platform is designed to support high-performance AI workloads, enabling faster model training, large-scale inference, and more complex AI applications across Serbia's digital ecosystem. The infrastructure includes a supercomputing system initially acquired in 2021 (valued at approximately €2 million), supplied by NVIDIA and Atos (Eviden), featuring DGX A100 systems and AI-optimized computing capacity. As of 2026, Serbia is expanding this infrastructure even more through a multiphase upgrade program led by NVIDIA and Eviden (Atos), including next-generation DGX H200 and Grace Hopper-based systems, significantly increasing compute capacity, storage, and energy performance.[209]

To add, discussions on a third system are already underway, further showing how Serbia's AI ecosystem continues to expand. Building on its growing computational infrastructure, Serbia has also announced the creation of a National AI Factory, which is a unique initiative in the Balkan region, introduced for the first time. Backed by an investment of €50 million, the project combines advanced supercomputing resources with software platforms and developer tools, making AI capabilities even more accessible to different researchers, start-ups, universities, and small enterprises.[210] This project, inspired by the EU's AI Factory model, is designed to strengthen innovation within Serbia and accelerate the adoption of AI across the country.[211] The initiative supports the development of AI solutions across public administration, health care, transport, and industrial innovation. Alongside investments in infrastructure, Serbia has also continued to strengthen its research capacity through dedicated institutions and innovation hubs. The state-funded Institute for Artificial Intelligence Research and Development of Serbia, plays a major role in advancing applied AI research, while the BIO4 Campus, which is currently under development in Belgrade, has the aim to bring together different expertise in biotechnology, life sciences, and AI.[212] The campus is expected to become a massive driver of deep-tech innovation, as it is projected to integrate major research facilities with data-center and supercomputing resources.[213] Lastly, there have been efforts to improve the coordination within the country's AI ecosystem. In an agreed partnership with the United Nations Development Program (UNDP), Serbia launched its first interactive map of its AI ecosystem in 2025, connecting research organizations, government institutions, and private-sector actors.[214]

Overall, Serbia's experience with AI exhibits a swift, but gradual and more coordinated approach to AI development compared to the other countries in the region. Rather than focusing only on the innovation aspect, the country has been heavily investing into strategy and research infrastructure, which has created new conditions for sustained growth, while preparing a layout for future governance measures.

Albania

Over the years, alongside Serbia, Albania has increasingly recognized the growth of AI as part of its broader digital transformation agenda. While its AI ecosystem is still in early development, the government has taken steps to promote innovation and integrate AI into public administration and economic development.

One of Albania's foundational documents on AI is the Digital Agenda 2022–2026, which explicitly elevates AI, advanced computing reforms, and cybersecurity, building on an e-government base in which more than 95 percent of public services are already delivered through the e-Albania platform.[215] The progress has not stopped, as "A Smart Specialization Strategy (2024-2030)" is in current preparation and execution, and a regulatory survey prepared by the Albanian consulting firm CMS notes that AI is currently governed indirectly through the Digital Agenda, cybersecurity law, and justice-sector digitalization programs.[216]

Albania's AI Ecosystem: Diella, Digital Governance, and AI Innovation

In Albania's ongoing digital transformation, the government has developed AI-enabled conversational services within the e-Albania platform, which serves as the country's central e-

government portal. While these systems originated as basic text-based virtual assistants for citizen services around 2024, they have continuously evolved toward more interactive interfaces integrated into public administration workflows.[217] One of the most famous developments is "Diella," which is an AI-driven digital assistant within the e-Albania ecosystem, designated to support administrative processes and improve transparency, while battling corruption in the country. Since January 2025, Diella has functioned as the Virtual Assistant of the national e-Albania platform, and by September 2025, Diella had recorded approximately 972,000 interactions as well as around 36,000 issued documents from the platform, reflecting its integration in Albania's digital administrative work.[218] While public communication has framed such tools as supporting anticorruption and efficiency objectives, official EU documentation describes them more broadly as part of Albania's e-government automation and service digitalization strategy rather than fully autonomous decision-making systems.[219] Positioned as the "Minister of State for Artificial Intelligence," Diella is presented in official communication as a symbolic step toward the integration of advanced technologies into institutions and overall governance. Its stated mission includes supporting administrative processes and facilitating the integration of AI across different sectors in the state.[220]

At the same time, Albania has pursued more initiatives surrounding AI which have been more symbolic. In 2025, the government allocated around $10 million to invest in the Thinking Machines Lab, which is a frontier AI company founded by Albanian-born former OpenAI CTO Mira Murati. The investment, made alongside a funding round led by Andreessen Horowitz, represents somewhat of a rare case of a small country taking an equity position in a global AI firm, linking national policy with diaspora expertise.[221] A central pillar of Albania's AI governance has been its focus on public procurement reform. By concentrating its main AI application in the area, the government has targeted one of the most corruption-sensitive functions of the state, aligning technological innovation with the broad rule of law objectives central to the EU accession process.[222]

Albania's AI trajectory is mainly characterized by rapid experimentation, combining practical digital service delivery with strategic moves. Its long-term impact will depend on whether these initiatives evolve into robust, transparent, and fully accountable systems of public administration.

North Macedonia

North Macedonia has been a country that entered 2024 without any AI-specific regulations, lagging behind neighboring states, but the newly elected government in the same year placed digitalization as one of the main points on its agenda, leading to the creation of the Ministry of Digital Transformations.[223] The AI policy plan is positioned inside the Smart Specialization Strategy 2024–2027 (which has been developed with the European Commission's Joint Research Center), rather than as a standalone AI strategy plan. The country's commitment to aligning with the European standards was further shown in 2026 when it signed the Council of Europe Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law, signaling its transformation to a rights-based approach to future AI governance. Compared to its neighbors such as Albania and Serbia, North Macedonia's trajectory is one consisting of institution-building in real time rather than a finished legal mechanism.[224]

Innovation Cases in North Macedonia

"Vezilka," which has been one of the biggest projects launched, is the first National Center for Artificial Intelligence. Launched in October 2025 and valued at around €6 million, Vezilka has been co-financed through the EU's Horizon Europe program and the EuroHPC Joint Undertaking, led by the Skopje Faculty of Computer Science and Engineering (FINKI), and affiliated as a satellite project of the Greek "Pharos" European AI factory. This project enables access to European high-performance computing (HPC) infrastructure for many different domestic researchers, institutions, and start-ups, showcasing that using EU instruments can leapfrog a capability gap.[225] Veilka's first declared objective is to build a new large language model for the Macedonian language. This is important, as for a small language community, this is a way to protect cultural and linguistic identity by ensuring that major AI systems do not overlook or sideline the language. North Macedonia is focusing on its AI development through targeted national priorities, as the Vezilka center, for example, has a broad mandate that includes health care data analysis, energy optimization, public administration automation, and smart agriculture. This approach concentrates limited resources on areas with clear national importance while also integrating training and skills development as a key part of its work.[226]

Another project that has shaped the country's strategy attempts is "ADA," an AI-based digital assistant or chatbot launched by the government in 2023. "ADA" was designed to be able to provide citizens and investors with automated access to information on investment opportunities, state aid programs, and related administrative procedures, as in the case of "Diella." Positioned as a new tool that will help improve transparency and administration efficiency, the system aims to reduce the need for direct human interaction in delivering routine public-sector information and easing access to government services for its citizens.[227] Recently, a new plan of data center development in North Macedonia (2026) has focused on proposals for large, investor-driven facilities that operate continuously and require significant electricity and cooling water. Planned projects, such as a 15-MW data center, are presented as major investments but are expected to be highly automated, creating few long-term job opportunities.[228]

Compared to its neighboring states, North Macedonia's approach reflects one of a fast follower strategy. Instead of developing entirely original AI systems, it focuses solely on adopting and scaling existing European capabilities while trying to improve sustainability.

Montenegro

As of yet, Montenegro has not adopted a formal national AI strategy, but it has already done the diagnostic groundwork. In 2024–2025, the Ministry of Public Administration and the Chief Digital Office, with UNDP support and EU funding, produced an Artificial Intelligence Landscape Assessment (AILA), which represents the country's first AI readiness report, which explicitly is intended as the evidence base for the forthcoming new national strategy. The assessment placed Montenegro in an early but coordinated "systematic" phase, identifying weak mechanisms for challenging algorithmic decisions and recommending legal recognition of AI plus a dedicated government AI-technology strategy.[229]

Pre-Strategic AI Governance in Montenegro

As aforementioned, rather than legislating in the abstract, Montenegro commissioned a structured readiness assessment across three pillars: government as user, government as enabler, and ethical AI, and is using its findings to design the strategy.[230] Treating policy design as a research problem is itself a smart policy choice that lowers the risk of premature regulation. The AILA steers AI toward sectors where Montenegro holds genuine advantages such as tourism, energy, and environmental protection, rather than attempting to compete across the board. Montenegro is taking a cautious approach to AI development rather than rushing into a formal national strategy. It is positioning its relatively cheap electricity as an advantage for attracting data centers and AI workloads, while prioritizing strong data governance over standalone AI systems.[231] Policy work in 2025 has framed AI as emerging from a solid digital infrastructure and as a starting point, rather than as a standalone, isolated policy field, as some other countries have positioned it. At the same time, a recent deepfake incident has pushed authorities toward more reactive regulation within the country.[232] At the international level, Montenegro's recent signature of the Council of Europe Framework Convention on Artificial Intelligence and Human Rights (CETS No.225) signals another shift toward rights-based AI governance. This legally binding treaty is intended to ensure that AI systems are developed and used in a way that protects fundamental rights, and strengthens democratic institutions, while still allowing innovation.[233] Domestically, AI governance is also shaped by a small but still growing innovation ecosystem concentrated in Podgorica and supported by hubs such as Tehnopolis in Nikšić. However, with limited AI-specific legislation, governance remains largely dependent on general digital policy, institutional coordination, and alignment with EU standards.[234] Montenegro is betting that a well-diagnosed late start can ultimately be more effective than early but poorly structured AI adoption methodology.

Kosovo

Unlike the other countries in Western Balkans, so far Kosovo has been a unique case in the field of digital technology and AI governance.

Kosovo's Agenda

While Kosovo has no standalone AI policy mechanisms or strategy, it has developed one of the region's most ambitious umbrella digital transformation strategies: the Kosovo Digital Agenda 2030 (DAK 2030). Approved by the Government of Kosovo, the strategy sets out a long-term vision for a "gigabit society" aligned with EU digital policy frameworks, including the EU Digital Decade and broader European digital transformation goals.[235] This agenda is structured around five strategic foundations: secure and modern digital infrastructure, digital transformation of the private sector, business digitalization, digital public services, development of digital skills alongside research and innovation capacity, and strengthened cybersecurity systems. An important note is that it sets an explicit target of 80 percent adoption of cloud, AI, and big data technologies among companies by 2030, which is aligned with the EU's 2030 Digital Compass goals. Kosovo's structural advantage in carrying out this agenda is striking, as it reports the highest household Internet usage in the Western Balkans (around 99.7 percent) and Europe's youngest population, making it an ideal country for digital upskilling.[236]

In recent years, Kosovo has also strengthened internal government capacity for data-driven policymaking through training and institutional support initiatives. In November 2025, the Office of the Prime Minister, with UNICEF, ran a widespread workshop introducing causal machine-learning methods for policy evaluation to staff across various ministries, the statistics agency, and customs, building analytical capacity inside the government rather than outsourcing it.[237] Furthermore, the Digital Agriculture Program and Action Plan 2025–2028, adopted in July 2025 with Food and Agriculture Organization of the United Nations (FAO) support, started placing data and digital tools at the center of a strategically important sector, creating a concrete domain in which AI-adjacent technologies can be easily piloted or used.[238] To add on, Kosovo has implemented its newest "Employment Strategy 2024-2028," prioritizing digital skills and lifelong learning, which represents an explicit attempt to preempt the displacement risks that analysts warn AI poses to Kosovo's heavily routine-task workforce, and to direct reskilling toward the youth and women.[239]

Bosnia And Herzegovina

Bosnia and Herzegovina is known as the regional laggard, not for its lack of talent but because of the constitutional fragmentation in the country. Since authority over digital and innovation policy is split across the state level to two entities (the Federation of Bosnia and Herzegovina and Republika Srpska), and, in the Federation, to ten cantons, there has been no unified national digital or AI strategy established yet.[240] There have been existing entity-level documents, but they have been described in independent assessments as outdated, fragmented, and lacking operational mechanisms. Independent analysis using the AI Index, GII, and Government AI Readiness Index finds the country underperforming peers such as Serbia and North Macedonia, with skilled-labor emigration ("brain drain") a recurring constraint and fewer than one-third of adults possessing basic digital skills.[241]

Bosnia and Herzegovina's Coordination

While regionally throughout Bosnia there has been a lack of coordination on some policies, locally there has been some development. Republika Srpska adopted and prepared an Action Plan for Innovation in SMEs (2024–2027), creating within one entity a more robust legal foundation for technology development, including state-backed credit lines for start-ups through its Investment Development Bank. Moreover, the capital Sarajevo developed its own Science and Innovation Strategy, advancing Sarajevo as an EU "Mission City."[242] This provides an example of innovation policy migrating to the governance level where it can actually be enacted. Bosnia and Herzegovina's association with Horizon Europe has become one of the country's most significant external mechanisms for integrating into European research and innovation systems.[243] Alongside this, Bosnia has continuously hosted and engaged in major international research and training initiatives linked to European scientific ecosystems. One example is the 2025 Eastern European Machine Learning Summer School (EEML), held in Sarajevo, which brought together early-career researchers and leading experts from across Europe and beyond, further developing local research communities within broader international AI and machine learning networks.[244] In parallel, public-sector digital transformation in Bosnia and Herzegovina has been strongly supported by coordinated international programs, particularly those led by the EU and the UNDPs.[245] These initiatives focus

on strengthening digital governance, improving administrative capacity, and supporting cross-government coordination in a context where institutional responsibilities are fragmented across multiple levels of government. As a result, these externally supported programs have, in practice, provided much of the coordination capacity for implementing digital transformation policy, partially compensating for the absence of a single, unified national digital agency.[246]

Ethics Gap in AI Governance

Across the Western Balkans, AI is increasingly being adopted, prompting governments to seek ways to modernize public administration and accelerate the digital transformation. However, the rapid deployment of AI technologies has also exposed ethics gaps between technological innovation and the regulatory frameworks needed to ensure transparency, accountability, and public trust. UNESCO's recommendation on the ethics of AI emphasizes that AI systems should be human-centered, transparent, and subject to appropriate oversight mechanisms.[247]

But despite these standards and demands, Western Balkan countries continue to face institutional weakness and governance challenges that hinder effective AI oversight. As such, the case of Albania's "Diella" highlights the risks associated with AI governance in the region. While the Albanian government presents "Diella" as a tool to reduce corruption and increase efficiency in public procurement, critics have also questioned the transparency of its decision-making processes and the extent of human accountability for its algorithmic decisions. Furthermore, critics argue that the symbolic presentation of AI in governmental roles may blur the distinction between just technological assistance and political authority, leaving space for the undermining of democratic accountability.[248]

As the Western Balkans continue their integration with European institutions, alignment with emerging new governance frameworks such as the EU AI Act and the Council of Europe Framework Convention on Artificial Intelligence will become increasingly important. Effective AI governance requires robust legal frameworks, independent oversight, and clear mechanisms for accountability, because without these safeguards the region risks widening the gap between AI adoption and ethical governance.[249]

PAKISTAN

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Executive Summary

National Artificial Intelligence Policy 2025 is a comprehensive and strategic policy of Pakistan which overcomes developmental barriers with the help of AI in the economic transformation process. The policy has six pillars—AI Innovation Ecosystem; Awareness and Readiness; Secure AI Ecosystem; Transformation and Evolution; AI Infrastructure; and International Partnerships—and will be governed by a multistakeholder governance framework.

The report highlights and critically evaluates five policy initiatives aimed at AI innovation and economic competitiveness. They are: (1) the National Artificial Intelligence Fund (NAIF) and Centers of Excellence (coe-AI) to enable Pakistan's AI innovation ecosystem to be the institutional

and financial backbone of Pakistan; (2) the National AI Skill Development Program for one million trainees and 10,0000 new trainers, a demand-side workforce program; (3) the Regulatory Sandbox Framework for controlled experimentation of the deployment of AI; (4) the AI Infrastructure Pillar, including high-performance computing, data repositories, and cloud-first policies; and (5) the International Partnerships and Collaborations Pillar, aimed at enabling Pakistan's integration into the global innovation AI ecosystem.

Although Pakistan's policy is very ambitious, it faces considerable implementation challenges. These range from budgetary limitations on the size of the NAIF, a lack of skilled AI trainers, an emerging governance framework for data, and the coordination challenges associated with a federal system. However, Pakistan's experience provides valuable insights for other developing economies grappling with the challenges of integrating AI, upholding ethical standards, and enhancing inclusive growth while dealing with limited resources.

Introduction

Pakistan is a unique country when it comes to AI policy. The nation has a population of over 230 million and is experiencing a rapid digitalization of its infrastructure, which could form the backbone of an important AI-driven growth path if these endowments are utilized well. Meanwhile, structural factors (38 percent poverty rate, low R&D spending as a proportion of GDP, disjointed data governance, and a lack of advanced computing infrastructure) significantly shape the context in which Pakistan's AI ambitions are being realized, making them less similar to those of OECD economies with which international AI governance discourse is usually linked.

This is a reality that the National AI Policy 2025 explicitly recognizes. The policy preamble acknowledges that collecting, processing, using, and exchanging data through automated/intelligent means would take the entire society to the next level of its evolution. The development framework is inspired by the work of the ITU's AI for Good initiative and the UN Sustainable Development Goals (SDGs), as well as relevant internal policies, such as the Personal Data Protection Act, Cloud First Policy, Digital Pakistan Policy, and Uraan Pakistan National Economic Transformation Plan 2024–29.

Most importantly, the policy does not simply outline goals it seeks to achieve; it includes a set of programs, measurable goals, institutional structures, and timelines. This flawed-in-practice structural discipline—if structurally a good one—brings Pakistan's AI strategy into a category of policy documents from emerging economies that deserve serious analytical attention from the international community.

Policy Initiative

The financial and institutional instruments are two complementary instruments at the core of the innovation ecosystem pillar of the National AI Policy. The NAIF is to be funded by at least 30 percent of all the money raised from Ignite's current R&D Fund, as specified by the Telecommunication Reorganization Act 1996 (amended 2006). The policy will be accompanied by a National AI Fund Committee that will be established within two months for managing the use of the funds and prioritization. Simultaneously, the policy calls for establishing a network of Centers of Excellence in Artificial Intelligence (coe-AI) in all the provinces of Pakistan and a two-tiered structure has been provided with primary centers in Islamabad, Karachi, and Lahore and auxiliary centers in Peshawar, Quetta, Faisalabad, and Hyderabad.

The second pillar of the policy introduces a multilayered system of working toward creating a workforce development model. The National AI Skill Development Program, in association with the National Vocational and Technical Training Commission (NAVTTC), provincial governments, the Ministry of Education, and private sector organizations, aims to train 200,000 people per year using a hybrid learning approach in AI and allied technologies. There will be 10,000 qualified AI trainers by 2027 through a "Train the Trainer" initiative. The coe-AI is also tasked with introducing a National High-Tech Internship Program with 20,000 stipends for internship positions every year. Higher education is to have 3,000 scholarships for postgraduate and doctoral education in AI every year, and a scheme of providing education loans without any interest for 15,000 students per year. A specialized offshoot program for marginalized women and Persons with Disabilities (PWDs) is to be developed jointly in partnership with Bait-ul-Maal and Ehsaas Program with the help of digiskills.pk for remote delivery.

The Third Pillar (Secure AI Ecosystem) and Fifth Pillar (AI Infrastructure) together create a Regulatory Sandbox Framework on how to deploy AI in an agile way under supervision. The policy explicitly aims for at least 20 enterprises to be helped by a regulatory sandbox by 2027 under the Third Pillar and 50 enterprises under the Fifth Pillar. The Securities and Exchange Commission of Pakistan (SECP) has been identified as the lead stakeholder and coe-AI has been providing technical assistance. The sandbox will be particularly geared to "data control and processing," with agile regulatory harmonization, and will be supervised by the proposed AI Directorate of the National Commission for Personal Data Protection (NCPDP).

The Fifth Pillar presents a holistic AI infrastructure program with four key pillars. Firstly, a national High-Performance Computing (HPC) grid (to be built with a network of HPC centers with specialized AI hardware) with computational access and participation in AI R&D of at least 100 (and in some provisions, 150) academic institutions. Second, the establishment of a National and Provincial AI Data Repository, which will store high-quality data for the purpose of training AI models while also preserving data reserves for each sector. Third, a nationwide network of AI Hubs in key cities that will help address gaps between academia and industry, and will also meet local innovation needs. Fourth, alignment with the Cloud First Policy 2022, as Pakistan encourages open source AI infrastructure and public cloud platforms, and with a target of contributing 50 new AI models every year to open international AI platforms.

Innovation Rational

Pakistan has an innovation support ecosystem with a long history of fragmentation, marked by inadequate funding of R&D, poor relations between academia and industry, and the lack of institutional support for AI. NAIF-coe-AI joins forces to tackle the "valley of death" challenge in technology commercialization, as they provide a complementary mix of financial, mentorship, computing resources, and start-up co-location.

One of the most serious structural problems of Pakistan is the lack of human resources in the field of AI. Only 10 percent or less of the workforce is currently skilled in AI, according to the policy. A large-scale, demand-responsive talent pipeline is essential for the success of the coe-AI ecosystem and private sector AI adoption. The policy's workforce structure is unique in that it has been designed to deal with the supply side of young people (scholarships, training programs, internships) as well as the quality assurance side (e.g., mandatory qualifications, monitoring and evaluation, and capacity targets for trainers).

The need for legal clarity is particularly critical in regulated industries such as financial services, health care, energy, and agriculture, where AI is being deployed. In regulated industries like financial services, health care, energy, and agriculture, traditional ex-ante rulemaking is inadequate to provide legal clarity, especially when dealing with AI deployment. To promote this, regulatory sandboxes offer limited, defined spaces where companies can experiment with new AI products and services within a framework that is monitored by regulators, but does not require compliance with existing regulations in full. This instrument is consistent with the approach of the leading AI regulators such as the Financial Conduct Authority of the United Kingdom, the Monetary Authority of Singapore, and the EU AI Act provisions of real-world testing.

Compute is becoming a key enabler of innovation capacity for AI. One of the most significant global structural inequalities is the "compute divide" between rich and poor countries, with developing countries lagging significantly behind. The cost of GPUs, lack of a reliable cloud infrastructure, and the absence of centralized, curated training datasets are some of the challenges Pakistan's research institutions and start-ups have faced in the past. This is directly dealt with in the Fifth Pillar, which represents an investment strategy for the supply side.

Mechanism for Driving Innovation

The coe-AI mandate is an all-encompassing one. Each center must:

- Fund at least 400 AI projects per year with at least PKR 1 million per project in academia and the private sector, which are commercialization-viable.
- Provide a minimum of 200 AI theses and research materials per year, with a maximum support of PKR 200,000 to ensure their publication in known international journals.
- Offer incubation, acceleration, and linkages with public-private stakeholders to AI start-ups.
- Help regulators to establish AI sandboxes and implement a Thematic Innovation Fund for priority area calls.
- Volume scaling using hybrid delivery, so that people can be reached beyond physical infrastructure bounds.
- Build a capacity loop of trainer multiplication via the 10,000 trainers target.
- Implement demand-side signalling via internships with certifications, generating credentials that are recognized by employers through certification of internships.
- Mitigate risk of inequality amplification due to the use of AI through the program for marginalized women and PWDs.
- Integrate AI and data science within STEM education at all levels of primary, secondary, and higher education.
- Reduce risk for first movers: enterprises can use AI applications without taking all the risks associated with regulation, reducing experimentation costs.
- Implement regulatory learning: supervisors collect live data on the operation of AI systems, to guide more sensitive future rulemaking.

- Implement ecosystem signalling: a sandbox that works will make countries and investors realize that the regulatory environment in Pakistan is conducive to the development of AI, and is not solely prohibitive.
- Open computational resources for academic institutions, allowing a larger range of AI development to take place than is possible based on individual institutional budgets.
- Develop a rich and comprehensive dataset that is centralized, so that researchers and start-ups don't have to contend with data preparation as a major hurdle in developing AI models.
- Introduce a shared AI model repository and API infrastructure, which will encourage the use of AI models, minimize duplication of efforts, and enable Pakistani AI solutions to achieve international standards.
- Support of the Cloud First Policy, indicating that AI infrastructure investments will be interoperable with Pakistan's overall digital government transformation initiative.

Expected Economic and Technological Impact

The NAIF-coe-AI architecture facilitates a positive innovation cycle. Nondilutive funding and access to physical infrastructure are advantages to start-ups, but also pathways to commercialization and international publication for research institutions, and a locally developed pipeline of AI talent for the industry. Centers are spread geographically across all four provinces, to create innovation dividends beyond the larger metro corridors. The state-based centers of excellence can create tangible progress in domestic AI capacity when complemented with an ongoing funding requirement, as demonstrated by international comparators such as the Center National pour la Recherche Scientifique et Technique (CNRST) AI initiative in Morocco and the National AI Roadmap (2021-2025) in Malaysia.

By 2027, it may generate the biggest pool of AI-savvy workforce of any economy in the South Asian region, as per the scale at which it is implemented. The impact on Pakistan's IT export sector is not far-fetched, as the sector has traditionally focused on low-margin services; AI-competent manpower would allow it to shift from low- to high-margin services and also toward AI product development. Gender and disability dimensions are included to meet SDG 5 and SDG 10, and more human capital will likely be brought into the AI-intensive labor markets by leveraging the currently underutilized workforce in this program.

The sandbox approach is especially relevant for Pakistan's fast-growing fintech industry as it has shown potential in growth but is also experiencing substantial regulatory uncertainty in the area of AI-powered credit scoring, fraud detection, and automated advisory. It also establishes the roadmap for AI applications in health care diagnostics and agricultural crop forecasting— sectors specifically named in the Fourth Pillar's sectoral transformation roadmaps. By enabling and documenting a sandbox, it eliminates regulatory risk premiums, which can help attract inward FDI to AI-dominant industries for international investors.

The importance of localized training datasets, especially for Urdu, regional and sector-specific datasets, extends beyond Pakistan. The linguistic AI assets built in Pakistan could be used by the linguistic communities around the world and open up export opportunities in the Arabic script and South Asian Language natural language processing (NLP) markets. If the 50 annual model contributions to an open platform come through, Pakistan would significantly boost its visibility

and credibility in the international research community of AI, thereby bringing in collaborative research partnerships and talent.

The infrastructure investment in HPCs is very costly and requires long-term multi-year procurement and maintenance agreements. The policy does not contain a budget envelope for the compute grid and data repository, which leads to fiscal uncertainty. Worldwide, much larger sovereign investments over longer periods of time have been needed to support such programs, among them the EU's EuroHPC Joint Undertaking and Saudi Arabia's Shaheen supercomputing program. In Pakistan, fiscal space is a problem and public-private partnerships (PPP) structuring of the compute infrastructure will be essential with the policy's PPP architecture on this pillar being underdeveloped.

Implementation Considerations

Although institutionally established, the absolute amount of the earmark held by Ignite in its R&D Fund is relatively small (300 projects and 200 theses year after year), and there is no explicit target fund size given, which means uncertainty on whether the NAIF can be funded sufficiently, given the stated per-project amounts. The time given for committee formation is too short to allow for the inter-ministerial coordination that has been reported in the problem areas in Pakistan. Moreover, there is no clarity about the criteria for coe-AI governance independence, which is raising concerns over the political insulation and allocation of funding based on merit.

The 200,000 trainers to be trained annually is ambitious, given the current digitization of the training infrastructure and trainers in Pakistan. The trainer shortage is probably the limiting factor: The policy's own goal says that there are only 10,000 qualified trainers in the pipeline by 2027, so it's a structural limitation in the short term. Further, the quality vs. quantity dilemma often found in large government training programs around the world can only be addressed with the proper third-party certification authority that can monitor the process.

The SECP is already conducting a sandbox for selected financial sector use cases of AI, suggesting the institutional precedent is there and needs to be generalized and scaled. The critical risk is institutional fragmentation, where the policy has placed the governance of the sandboxes in multiple institutions (i.e., SECP, NCPDP, coe-AI, and the AI Directorate), without making the borders between the different institutions explicit. If there is no one-stop coordination, enterprises could be subject to multiple overlapping or conflicting supervision obligations that will be detrimental to the innovation principle of the sandbox.

The Sixth Pillar is the least detailed of the six pillars. The policy doesn't actually state that there are no existing commercial partnerships for AI, and the aim is merely to achieve "international AI partnerships and collaborations" by 2026, which is hard to meaningfully measure. Implementing planning is complicated because there are no specific priorities for the partner countries, target investment amounts, or specific institutional lead designations for different agreement tracks. Besides, Pakistan's geopolitical positioning also gives rise to sensitivities, which need to be carefully managed in Pakistan's bilateral partnership diplomacy for AI.

Overall Strengths of Pakistan's AI Policy Framework

The National AI Policy 2025 showcases positive attributes of Pakistan's AI policy, which sets it apart from similar AI policies of developing economies. First, the six pillars are not isolated, but interdependent with the first influencing the second, and so on—workforce development is a

component of the innovation ecosystem, infrastructure as a component of research, and governance structures as a component of the enabling environment for the other pillars. Second, the policy is unusually specific with the quantification, including numeric targets for training volume, funding for projects, number of institutions, number of patent registrations, and number of participants in the sandboxes, which whilst creating risks of accountability, also has the potential to be a basis for genuine performance tracking.

Thirdly, the policy's explicit focus on inclusion, through the marginalized women and PWDs program, regional coe-AI distribution, and rural digiskills.pk extension, provides evidence that the policy is aware of the potential to exacerbate inequalities through AI-driven growth. This aligns with the latest developments in international best practice, such as the EU's Recommendations on "trustworthy AI" and UNESCO's Recommendations on the Ethics of AI that make equity a design principle and not an afterthought. Finally, the policy is rooted in existing laws (Telecommunication Reorganization Act, draft Personal Data Protection Act, Cloud First Policy), which suggests intentional efforts to establish institutional consistency and not parallel governance structures.

Areas Requiring Further Policy Development

There are three aspects of the policy that are worth special focus in the next revision. The first is fiscal architecture, which is very ambitious in terms of its targets but notably silent about aggregate budget envelopes, funding timeframes, and public-private cost-sharing arrangements. If there is no clear commitment in the fiscal work, there is not much clarity in the prioritization of implementation and accountability is weak. This has been tackled by the policies of Malaysia, Indonesia, and the UAE, which include an indicative multiyear funding envelope in addition to their strategic framework.

The second consideration, data governance granularity, is the second area we consider. However, Pakistan's data governance framework is limited when compared to the policy's goals of AI. In this regard, while the Third Pillar addresses cybersecurity, transparency, and governance of generative AI, Pakistan's data governance remains underdeveloped relative to the policy's vision for AI. While there are some future policies mentioned, such as the National Data Security Policy, the Identity and Access Management protocols and the Open-Source AI Governance Framework, there is a gap in the implementation of these policies between the short- and medium-term, as there are no interim data-sharing policies.

The third is federal-provincial coordination. Pakistan is a federal state, where the provinces have constitutionally given powers in Education, Health, and Agriculture, which form the core of the Fourth Pillar and are the areas where AI transformation is required. Provincial governments are identified as stakeholders in the policy, but no mechanisms for coordination, resource-sharing formulas, or dispute resolution procedures are identified. Both the National Strategy for Artificial Intelligence (NSAI) in India and the AI strategy of Brazil are instructive examples of federal AI policies that explicitly discuss the issue of subnational implementation architecture.

Alignment With International Best Practices

The policy of Pakistan shows some signs of aligning with a few international norms of AI governance. The principles of the OECD AI Principles (2019) and the risk-based governance approach in the EU AI Act are present in the third pillar, with a focus on human oversight,

algorithmic transparency, and lifecycle impact assessments. The regulatory sandbox mechanism is similar to Singapore's AI Governance Framework and FCA's AI sandbox in the UK. The explicit mention of UNESCO's AI Ethics Recommendations and ITU's AI for Good framework indicates their involvement in multilateral governance norms.

While this policy does not address the OECD's recommendations on AI Compute Access or the ongoing global discussions on the governance of AI foundation models, these will play a growing role in the future growth of Pakistan's AI ecosystem. Explicit engagement of the compute infrastructure agenda of the Global Partnership on AI (GPAI) compute access workstreams would be beneficial for the Fifth Pillar's compute infrastructure agenda.

Table 4: Key performance indicator summary

Key Performance Indicator	Target	Timeline
Train 1 million individuals in AI	1,000,000 trained	By 2027
Train-the-Trainer initiative	10,000 new trainers	By 2027
National High-Tech Internship Program	20,000 stipend internships/year	Ongoing
Postgraduate AI scholarships	3,000 per annum	Ongoing
AI R&D project funding	400 projects/year	Ongoing
AI theses and research funding	200 theses/year	Ongoing
Regulatory sandbox participation	50 enterprises	By 2027
Academic compute access	150 institutions	By 2026
Open AI model contributions	50 models/year	By 2026
AI patent registrations	1,000 patents	By 2026
Public servant AI training	100% coverage	By 2027
AI awareness (Internet users)	90% coverage	By 2026

Conclusion

The National AI Policy 2025 is a substantive study of designing AI innovation policy when resources are limited, institutions are constrained, and the population is the driver of opportunity. The policy implications from three lessons are of special significance for policymakers in similar economies. Policymakers in similar economies can learn from these lessons.

First, the integrated pillar approach (innovation financing, workforce development, regulatory framework, sectoral transformation, physical infrastructure, and international engagement in one policy instrument) is a model which helps to prevent fragmentation that leads to poorer outcomes for many technology strategies in developing economies. The coherence of Pakistan's framework, with or without the capacity to implement it, provides a governance structure to produce synergies across policy areas.

Second, Pakistan's inclusion-by-design (IBD) approach is built on the premise that the policy of AI must be forward-looking about distributional consequences, as opposed to taking a reactive stance that merely considers the needs of gender and people with disabilities and regional distribution as secondary issues. It can be applied to any economy with an appreciation of the potential for social and economic inequalities to be exacerbated by the adoption of AI.

Third, the quantification discipline that is part of the policy's key performance indicators (KPI) and action matrix (as flawed as this is currently is) creates accountability infrastructure which can be further developed. Measurable targets allow for independent monitoring and for international benchmarking, as well as for evidence-based policy iteration. In countries where the policy framework on AI is only a document with aspirational ideas without anchor points, it would be beneficial for policymakers to follow similar frameworks and introduce quantification, though at the risk of setting targets that are challenging to meet in the short term.

The Pakistan experience also points to the key dilemma in designing AI policies in developing economies—the drive to create innovation-enabling policies must be accompanied by the institutional and fiscal strength to put them into practice. The next few steps in resolving this tension—how to implement gradually, secure strategic alliances on the international stage, and identify areas of current capability deficits and learn from them—will make the difference between Pakistan's AI Policy 2025 being a success in developing-economy AI governance and a cautionary tale on the gap between policy design and policy delivery.

THE PHILIPPINES

Philippine Institute for Development Studies (PIDS), By Christopher Ed Caboverde and Francis Mark Quimba, Ph.D.

Amidst the changes in people's daily lives brought about by AI, AI is expected to make a greater contribution to the global economy. PricewaterhouseCoopers (PwC) predicts that AI will increase global GDP by around $16 trillion in 2030, a 14 percent increase from 2017 global output.[250]

The effects of AI will be especially felt in emerging economies.[251] Among the emerging economies that could potentially see economic dividends due to AI is the Philippines. It is estimated that the Philippines would see a $31 billion boost on the country's gross value added (GVA) as well as a $2,000 per annum boost in average labor productivity.[252] These gains are due, among other things, to potential savings in time spent on routine tasks, which, in turn, allow workers to focus on creating or delivering more value-added outputs.[253]

Other studies, however, have highlighted that AI could potentially worsen or widen the existing gaps between the haves and the have-nots. Alonso et al. found that demand for AI, including demand for robot technologies among developed economies, can induce a shift of investment flows away from developing economies to their developed counterparts.[254] AI also has the potential to negatively affect vulnerable groups such as women and youth as their jobs are more at risk of being automated or being replaced by AI.[255]

Nevertheless, these developments highlight the importance of having AI policies that promote innovation and economic growth for emerging economies such as the Philippines while also remaining human-centered or people-centric. The Philippine government has been cognizant of

the need for such policies. Among the AI-related policies that are in place or that are in the pipeline include:

- **National AI Strategy for the Philippines (NAIS-PH):** In May 2026, the Philippine government approved the NAIS-PH, which represents a framework that serves as overall guiding principles for the Philippines in the governance and development of AI in the Philippines in terms of: 1) infrastructure, 2) workforce, 3) innovation, 4) ethics, and 5) policy.[256] This framework highlights the role of AI as a catalyst for inclusive growth and innovation, and as a tool to create a people-centric and future-ready Philippines by 2028.[257] Additionally, the Philippine government emphasizes the role that private sector stakeholders play in this endeavor, with the government tapping groups such as the Analytics and Artificial Intelligence Association of the Philippines (AAP) to leverage its network of businesses, academia, and AI experts to help turn the visions and objectives of the said framework into reality.[258]
- **Education Center for Artificial Intelligence Research (ECAIR):** In April 2025, the Philippine Department of Education (DepEd) created the ECAIR, which is a center that will conduct research on AI and its usage in the context of the education system.[259] Specifically, the Center, which was created in partnership with the Southeast Asian Ministers of Education Organization (SEAMEO), will craft policies to integrate AI in the classroom and education settings to improve student learning as well as collaborate with other stakeholders such as technology companies and educational institutions in promoting and improving the Philippines' capacity to implement educational innovations.

One concrete example of such policies is the implementation of the System for Intelligent Growth and Learner Anthropometry (SIGLA). This application or system, launched in April 2026, estimates students' height and body mass index (BMI) by taking their photo.[260] This application helps teachers track the health of their pupils to allow schools to intervene immediately, especially in cases when poor health outcomes such as stunting also affect a student's learning. This also reduces manual entry of pupils' height, weight, and BMI, freeing up time for teachers to focus more on teaching their students.[261] Addressing such health concerns among pupils is seen as a priority given that undernutrition leads to estimated economic productivity losses for the Philippines of more than $3 billion annually.[262]

- **STARS of the Bangko Sentral ng Pilipinas:** The Bangko Sentral ng Pilipinas (BSP or the Central Bank of the Philippines) has issued a memorandum titled "Governance Principles for Artificial Intelligence."[263] This memorandum aims to put guidelines on the ethical usage of AI by financial institutions while ensuring that these institutions remain committed to transparency and accountability.

The highlight of this memorandum is the STARS principles, which stand for:

- **Sustainability:** The financial institutions must keep in mind the long-term environmental and other effects whenever they utilize AI solutions in their operations. This includes their electricity consumption and the extent of electronic waste generation.
- **Transparency:** The financial institutions must ensure open information that is accessible to all relevant stakeholders, such as their clientele. This includes ensuring that paper trails or audit trails remain accessible to these stakeholders.

- **Accountability:** The financial institutions must determine the different stakeholders within them and their respective functions and accountabilities. These institutions must also ensure that humans remain the definitive decision-maker when utilizing AI solutions.
- **Responsibility:** The financial institutions must avoid endangering themselves, their clients, and the financial system in general. This includes complying with all laws and regulations related to matters such as, but not limited to, personal data privacy as well as ensuring that AI solutions do not discriminate against vulnerable groups.
- **Security:** The financial institutions must ensure that cybersecurity is paramount. This includes the regular conduct of cybersecurity training and other programs that audit the vulnerabilities of their systems.

BSP has highlighted that these principles are voluntary in nature and are not meant to stifle innovation in the industry.[264] Nevertheless, the Central Bank has recommended that financial institutions use these principles when crafting their own AI governance framework and has stated that it will continue monitoring any developments related to AI and its effects on the financial system before imposing more binding regulations on the industry.

- **AI at the local government level:** AI also has potential uses in the context of urban planning such as traffic management and urban mobility, which are often managed at the local government level. To help the local government units (LGUs) adopt AI for urban planning purposes and promote sustainable and people-centric urban development, the Department of Science and Technology (DOST) is implementing the Smart and Sustainable Communities Program (SSCP). Aims of the program include the promotion of sustainability and citizens' welfare through the promotion of inclusive and data-driven solutions to common urban problems such as but not limited to traffic congestion and limited public transport infrastructure.[265]

Among the LGUs that DOST has been helping in this aspect are the different LGUs from Davao Region such as Davao City, Panabo City, Digos City and Tagum City.[266] Last October 2025, representatives from the aforementioned LGUs met with representatives from DOST to discuss the AI platform SEERMO, which is a Filipino-developed platform that gathers urban mobility data to help craft evidence-based public transport and urban planning policies.[267] With about 77 percent of road space in the Philippines being used by private vehicles and the remaining road space allocated to pedestrians, the advent of AI solutions such as SEERMO can help LGUs craft more policies that veer away from the traditional car-centric urban planning model to a more people-centric model.[268]

Developing economies such as the Philippines can leverage AI to drive innovations. However, as literature cites the negative effects of AI, it is important for governments to ensure that AI and its innovations remain human-centered and do not come at the expense of the most vulnerable.

POLAND

THINKTANK, By Tomasz Klekowski

Poland has been enjoying unprecedented growth over the past 35 years, becoming an example of economic modernization and development leveraging the intellectual capital of its citizens, as well as the inflow of know-how and FDI.

A well-educated young population, with a high share of engineers and ICT specialists, was the cornerstone of digital transformation during the last decade of the 20th century and the first decade of the millennium. This helped build a vibrant software development industry supporting many international R&D centers and software houses, standing out in the European technology landscape.

The first discussions regarding AI strategy and policy development started in early 2018, when the Ministry of Digital Affairs gathered an expert community to prepare a framework and assumptions for the Polish AI strategy, finally announced in 2020. The document was updated in 2026, reflecting technological and ecosystem developments as well as EU strategy and regulations (i.e., AI Act, Data Act, AI Continent Action Plan, Apply AI Strategy, etc.).

The first Polish AI policy document covered the right areas, focusing on the role of data, skills development, research financing, the ethical use of AI, and regulatory drafting. The subsequent strategy emphasized the use of AI in public administration.

The most recent document, in line with EU strategy, extended the focus to building AI infrastructure and the development of local AI models.

Despite solid analysis of challenges and sound articulation of priorities, both strategies have significant deficits in the area of strategy execution governance and ecosystem orchestration.

Governance and orchestration are critical elements in converting strategy into action; otherwise, the strategy becomes merely a manifesto.

Compared to other relevant examples, Czech and Hungarian AI strategies in 2020/21 were clearer in assigning responsibility and accountability as well as more precise in articulating goals and metrics; meanwhile, the UK AI strategy described a more efficient execution model based on collaboration between the AI Council and the Office for AI.[269]

The majority of AI development and deployment activities have followed the EU trajectory, focusing on aspects described in the AI Continent Action Plan.

There has been good progress in skills development, with solid advances in AI engineering skills and good foundations for AI literacy in K–12 and higher education.

Legal awareness of the AI Act and its key regulations has been growing.

AI deployments have been increasing, with some use cases, such as image recognition and analysis, gaining strong traction.

The emergence of large language models introduced another distortion to the execution of the strategy, reinforcing the importance of infrastructure scale, data availability, readiness, and data governance processes.

Market research assessing AI deployment readiness in the Polish energy sector indicated that data governance was a key deficit in the AI maturity of large Polish companies, creating a bottleneck for AI deployments. Another issue was the readiness of business lines to change processes and embrace the potential of AI deployments.[270]

Data readiness has become a major challenge for the training and development of local large language models. While the need for such development has been identified and two initiatives have gained traction (PLLuM and Bielik), the scale, quality, and sophistication of local models remains limited.

One of the critical problems was the ability to use the gathered data for training. Solid preparatory work was done by the scientific community to create a linguistic corpus of the Polish language, but only 5 to 10 percent of the gathered texts and creative works could be used for training local LLMs. Copyright issues were the key problem, followed by requirements of the AI Act referring to the need to evaluate training data.

This is an important factor limiting model quality, as AI companies in other jurisdictions outside the EU enjoy more flexible copyright regulations. The Japanese approach can serve as a good example here, while American and Chinese approaches are more controversial.

A complex legal system and an underdeveloped data culture have been stalling efforts to build large data sources for other AI use cases, despite clearly stated EU priorities in this area.

The flip side of limited data availability has been a lower need for computing infrastructure development. The largest AI training installation in Polish scientific computing centers used just below 500 accelerators at the end of 2024, while leading American AI companies used over 100 times more. This limited infrastructure did not, however, create a bottleneck.

The current EU strategy mandates the creation of AI Gigafactories—data centers with over 100,000 accelerators—and Poland has shown strong interest in building one of them.

The Baltic AI Gigafactory is a technically feasible project, with energy availability and locations secured. However, the success of the project depends on one fundamental factor: the project pipeline.

Building such large infrastructure makes sense only if a significant number of projects with accessible data resources are prepared upfront.

Currently, there is no clear visibility of such projects emerging from either the commercial ecosystem or the Polish and European scientific community. This infrastructure cannot be fully utilized for training local large language models due to the factors described above. As data center infrastructure ages quickly, the lack of project pipeline development becomes an important strategic issue.

This challenge highlights insufficient alignment between research and development agendas. AI research in Poland has not been sufficiently aligned with strategic directions or with the

development agenda of local LLM projects. Leading AI research centers, such as IDEAS, are only loosely connected to the PLLuM and Bielik projects, despite their strategic importance.

These challenges have been partially addressed in the recently announced Polish policy for AI development till 2030: "Polityka rozwoju sztucznej inteligencji w Polsce do 2030 roku."[271] However, many issues remain.

The above analysis allows us to list several key learnings reinforcing necessary elements of AI strategy and policy:

- AI policy requires strong leadership and ownership; anchoring the strategy too high in the decision-making structure limits ownership and accountability, while placing it too low limits execution traction, resourcing, and alignment.
- Governance of AI policy requires appropriate technological literacy and business acumen among key political decision-makers.
- AI policy requires strong links with industrial policy; otherwise, it becomes a narrow, siloed, and loosely connected initiative.
- AI policy articulation and governance require balanced collaboration between technical specialists and strategy and organizational experts with strong technological literacy; isolating it within a technical silo negatively affects structure and governance.
- The work needs to be complemented by a well-rounded business perspective, a VC risk perspective, and input from local scale-ups with mature or maturing AI products.
- AI policy needs strong commitment from the digital industry, which should support ecosystem alignment and drive necessary changes.
- AI policy requires alignment of research and development agendas for efficient R&D; research ("R") must align with key development ("D") challenges, such as support for local large language model development and optimization.
- Strategy and policy require dedicated resources (budgets, people, and organizational structures) to achieve the necessary scale of communication, attention, and ecosystem alignment.
- Every strategy requires clear goals, metrics, and appropriate review cycles.

If these requirements are not sufficiently met, we can observe significant challenges in converting AI policy into market development efforts, creating a vicious cycle of weak execution and limited ecosystem engagement, where the strategy becomes merely a manifesto.

PERU

Macroconsult, By Sandra Flores Pérez

AI is emerging as one of the most promising drivers of economic growth across countries. According to Muschett and Opp (2024), its adoption could increase Latin America's GDP by up to 5.4 percent by 2030.[272] Against this backdrop, harnessing AI has become a key public policy challenge, as its impact depends on each country's ability to establish the conditions necessary for its development.

A country's AI capacity is no longer assessed solely from a technological perspective but also in terms of governance, research, infrastructure, human talent, and the adoption of AI tools. On these dimensions, Peru has gained increasing recognition in recent years. According to the "Latin American Artificial Intelligence Index 2025" and the "Government AI Readiness Index 2025," Peru ranks seventh and fifth, respectively, among Latin American countries, with particularly strong performance in governance and the adoption of AI tools.[273]

Governance

Peru's progress in AI governance reflects the gradual development of a regulatory framework, which can be understood through three key policy instruments: i) the National Digital Transformation Policy to 2030; ii) the Law Promoting the Use of Artificial Intelligence; and iii) the National Artificial Intelligence Strategy 2026–2030 (ENIA, by its acronym in Spanish).

The National Digital Transformation Policy to 2030, approved in July 2023 through Supreme Decree No. 085-2023-PCM, aims to expand the exercise of digital citizenship. To achieve this, it establishes six strategic objectives focused on: i) connectivity; ii) the digital economy; iii) digital public services; iv) digital talent; v) digital security and trust; and vi) the ethical use and adoption of emerging technologies.

Its significance lies in positioning AI within a comprehensive digital transformation framework, in which it functions as an enabling technology rather than as a stand-alone objective. Within this framework, the effective adoption of AI depends on foundational capabilities such as connectivity, process digitalization, data governance, interoperability, and the development of digital public services.

Law No. 31814, enacted in July 2023, together with its implementing regulations approved by Supreme Decree No. 115-2025-PCM in September 2025, constitutes Peru's first legal framework specifically governing AI. The law promotes the development and use of AI as part of the broader digital transformation process, while establishing that its implementation must respect human rights and adhere to the principles of ethics, transparency, accountability, sustainability, and security, with the aim of contributing to the country's economic and social development.

Its approval marked a significant milestone in Peru's AI governance, placing the country among the first in the region to adopt a legal framework specifically dedicated to AI. Its most important contribution, however, lies in the risk-based approach established by the implementing regulations, which classify AI systems into two categories: i) prohibited AI practices, covering applications that infringe fundamental rights; and ii) high-risk AI systems, encompassing applications in sensitive sectors such as health, transport, energy, and banking.

Finally, the **National Artificial Intelligence Strategy 2026–2030 (ENIA)**, approved in April 2026, constitutes Peru's principal strategic instrument for the development of AI.[274] Unlike the preceding instruments, which establish the regulatory framework for AI, the ENIA provides a roadmap that defines actions, indicators, targets through 2030, and responsible institutions to strengthen AI governance and implementation at the national level.

Among the ENIA's most significant contributions is the creation of the Artificial Intelligence Officer (OIA), a role responsible for identifying and planning AI use cases within each public entity, developing the Artificial Intelligence Action Plan, and overseeing its implementation while

reporting to the Digital Government and Transformation Committee. The strategy also establishes the AI Catalogue, a platform designed to register, disclose, and monitor the AI models, algorithms, and datasets used by the public sector.

Adoption of AI Tools

A robust regulatory framework is essential for fostering the development of AI. Its effectiveness, however, ultimately depends on its translation into concrete initiatives and practical applications. In Peru, the development of this regulatory framework has been accompanied by the gradual adoption of AI-based solutions across a range of public sector institutions.

Among the most notable applications is AnemiaApp, developed in 2019 through a partnership between Peru's Ministry of Development and Social Inclusion (MIDIS) and Universidad Peruana Cayetano Heredia to support the early detection of childhood anemia. The application uses a low-cost system that captures digital images of the eye with a mobile phone camera and applies AI algorithms to analyze the characteristics of the conjunctiva, enabling the estimation of hemoglobin levels without the need for a blood sample. This solution provides a rapid, noninvasive screening tool that facilitates the timely identification of potential cases, particularly in rural and underserved areas with limited access to specialized health care services.

The significance of this initiative extends beyond the national context. The Inter-American Development Bank (IDB) highlights AnemiaApp as a case study in its 2026 report, "Development and Use of Artificial Intelligence in Latin America and the Caribbean," recognizing its contribution to expanding access to early screening and strengthening early childhood health care.[275] This recognition demonstrates that Peru has not only established an institutional framework to promote AI, but has also begun to develop AI applications with a tangible impact on public service delivery.

Other AI applications developed by public sector institutions to improve service delivery, strengthen citizen engagement, and enhance institutional management include: i) ElecclA, developed by the National Jury of Elections (JNE) to automate compliance verification and the processing of electoral case files; ii) Andrea, an interactive platform developed by the National Water Authority (ANA) that facilitates the analysis, processing, and evaluation of hydrometeorological data using AI and statistical tools; and iii) AnalIA, an AI-based solution implemented by the Supervisory Agency for Investment in Public Transport Infrastructure (OSITRAN) to automate the extraction, processing, and structuring of transport infrastructure data, thereby supporting decision-making and improving institutional efficiency.

These initiatives have recently been complemented by the creation of the first Artificial Intelligence Laboratory within the Ministry of Women and Vulnerable Populations (MIMP). Through this initiative, a virtual assistant has been deployed to provide women, children, adolescents, and older adults in vulnerable situations with guidance regarding public services in Spanish, Quechua, Aymara, and Shipibo-Konibo.

Conclusions

Peru has positioned itself as one of the pioneering countries in Latin America in developing a regulatory framework for AI, having enacted both a dedicated AI law and its implementing regulations. At the same time, the experiences across various public sector institutions demonstrate that AI has begun to be adopted in public service delivery and institutional

management. Nevertheless, the adoption of these solutions remains incipient, uneven and continues to depend largely on initiatives led by individual institutions.

Consolidating a national AI ecosystem requires strengthening key enabling factors, including digital infrastructure, computing capacity, the availability of high-quality data, and the development of specialized human talent. Against this backdrop, Peru's main challenge is to complement the progress achieved in AI governance and adoption by strengthening these foundational capabilities, thereby enabling AI to scale in a sustainable and inclusive manner.

SOUTH AFRICA

Centre for Risk Analysis (CRA), By Chris Hattingh

Introduction

South Africa has a reputation—not always undeserved—of being a country that talks big on policy and delivers slowly on implementation. By contrast, AI governance is beginning to look like a meaningful exception. Over the past two years, the government, academic institutions, and the private sector have laid down a set of policy foundations that, while still maturing, are more coherent, consultative, and strategically grounded.

The country is not competing with the European Union's AI Act or the United States' executive order approach on their own terms. It does not have the regulatory capacity of one or the private-sector capital of the other. South Africa is attempting a human-centered, innovation-enabling AI policy architecture anchored in genuine public consultation and linked to skills and infrastructure development.

This contribution identifies five concrete examples of smart AI policymaking in South Africa: initiatives that demonstrate the country is not merely playing catch-up, but in certain respects building something worth emulating. The CRA's assessment is not uncritical—we note pace and execution risks throughout— but the direction of travel is constructive.

AI could contribute up to $52.2 billion in economic gains to South Africa by 2030. The policy architecture now being built will determine whether that potential is captured or squandered.

Five Examples of Smart Policymaking Driving Innovation

Example 1: A Phased, Consultative National AI Policy Framework

In April 2024, the Department of Communications and Digital Technologies (DCDT) convened a National AI Summit and released a draft National AI Plan, launching a structured policy development process. This was followed in August 2024 by the publication of a comprehensive National AI Policy Framework, intended as a guiding architecture for the policy and legislative work that would follow. The April 2026 gazette Draft AI Policy, now open for 60 days of public comment, represents the maturation of that process.

The methodology behind the policy is notable. The DCDT undertook interdepartmental consultations, international benchmarking, and a series of public submissions between 2024 and 2025 before the draft reached the Cabinet. The draft is structured around six core pillars covering responsible use, innovation, skills, infrastructure, economic transformation, and governance; a broad but coherent architecture.

The policy's stated goal—to strengthen government's ability to regulate and adopt AI responsibly while encouraging local innovation, supporting job creation, and improving access to AI skills—is a credible balancing act. Crucially, it avoids the trap of front-loading restrictions at the expense of enabling conditions. The CRA regards this sequencing as smart: build the ecosystem first, then harden the regulatory edges.

The risk is pace. Finalization of the policy is not expected until 2027, with implementation potentially stretching to 2027–2028. In a sector moving at AI's speed, that timeline carries real opportunity cost. The question now is whether the consultation phase produces substantive improvements or merely delays.

Example 2: The AI Institute and a Network of University AI Hubs

South Africa recognized early that a national AI strategy without a corresponding skills and research infrastructure is a document, not a plan. The government's response has been to co-invest in a network of university-based AI hubs and to establish a national AI Institute.

Between 2023 and 2024, AI Hubs were launched at the University of Johannesburg, Tshwane University of Technology, the Central University of Technology, and Stellenbosch's Military Academy. Each is intended to serve as application-focused innovation nodes linked to the DCDT's broader digital strategy. The AI Institute of South Africa, launched as a public-private partnership between government and these universities, provides overarching coordination, talent pipelines, and R&D direction.

In November 2024, Wits University unveiled its Machine Intelligence and Neural Discovery (MIND) Institute–backed by an initial R60 million investment–with a remit spanning research, postgraduate fellowship programs, policy governance work, and plans for a pan-African MIND fellowship network across the continent. The MIND Institute explicitly includes AI governance and ethics in its scope, meaning that South Africa's research infrastructure is being built not just to generate AI applications but also to interrogate the policy and ethical questions AI raises.

The longer-standing Center for Artificial Intelligence Research (CAIR), a national research network with nodes at five universities including UCT, Stellenbosch, the University of Pretoria, and the University of KwaZulu-Natal, provides foundational and applied research capacity funded through the Department of Science and Innovation. Together, these institutions constitute a meaningful research commons; not yet world-class by international benchmarks, but substantive and growing.

Example 3: AI as a Tool for Inclusive Economic Growth – Not Just a Tech Policy

One of the distinguishing features of South Africa's AI policy approach is its explicit framing of AI as an instrument of economic inclusion, not merely a technology competitiveness strategy. The Draft AI Policy directly addresses the risk of job displacement through automation, and advocates for a balanced approach combining economic incentives for innovation with strategies for workforce reskilling and upskilling, particularly in industries most exposed to automation.

This framing matters politically and practically. South Africa has an unemployment rate that renders any technology policy that ignores labor market consequences politically unsustainable. By building reskilling provisions into the AI policy architecture from the outset—rather than treating them as a downstream—the government is at least acknowledging the structural tension that AI governance must navigate.

The DCDT has also framed compute capacity and digital infrastructure development as AI policy issues, not just sector-specific technical matters. Parliamentary briefings in early 2026 highlighted the need to expand GPU compute capacity and improve connectivity to support local innovation and SMEs. This infrastructure-as-policy framing is substantively correct: without it, South Africa risks having an AI governance regime that regulates an ecosystem in which it cannot yet fully participate.

Example 4: Pan-African Leadership: The AU AI Blueprint

Smart domestic policy does not happen in isolation. South Africa has used its international positioning, most notably during its African Union Presidency, to shape the continental AI governance conversation rather than simply respond to it. The country was instrumental in developing the Artificial Intelligence for Africa Blueprint, produced as part of the Smart Africa initiative in partnership with the German Development Cooperation (GIZ).

The Blueprint is designed to assist AU member states in crafting their own AI policies, strategies, and development plans within the context of the Fourth Industrial Revolution. For South Africa, the strategic value of this work is twofold: it positions Pretoria as a first mover in African AI governance (reinforcing soft power and investment attractiveness), and it creates policy network effects that could produce more consistent regulatory environments across trade partners and regional markets.

For international businesses and investors, this is a relevant consideration. A company operating across the Southern African Development Community (SADC) or East Africa will face a more navigable regulatory environment if African Union (AU) member states adopt policy frameworks with shared architecture. South Africa's proactive role in designing that architecture means its own domestic policy is likely to be influential as a reference point, raising the stakes for getting it right.

Example 5: Sector-specific AI Application: Health, Education, and the CSIR

The most tangible evidence of AI policy translating into real-world application in South Africa is found at the sectoral level. The Council for Scientific and Industrial Research's (CSIR's) Dr. Math program—an AI-driven intelligent tutoring system deployed at scale to assist students across the country with mathematics—represents precisely the kind of high-impact, population-scale application that a national AI strategy should enable and protect.

In health care, South Africa's National Health Digital Strategy has identified AI and data science as priority capabilities for improving patient management, interoperability across health information systems, and mobile health access for vulnerable populations. The post-COVID acceleration of telemedicine and AI-based diagnostic tools in the public health system has created practical demand for governance frameworks that protect patient data while enabling innovation.

What these sectoral applications illustrate is that South Africa's AI policy challenges are not abstract. They are grounded in concrete deployment contexts—classrooms, clinics, and government service delivery systems—where getting the governance balance right has immediate consequences for citizens. Policy built around real use cases is more likely to be fit for purpose than policy constructed at arm's length from application realities. South Africa, by necessity, is building its framework from the ground up.

CRA Assessment

South Africa is not an AI governance leader in the global sense. It lacks the regulatory bandwidth of the EU and the investment firepower of the United States or China. But it is doing several things well: sequencing policy development carefully, investing in research infrastructure, framing AI as an economic inclusion issue, exercising continental leadership, and grounding its governance in practical application contexts.

The outstanding risks are execution, pace, and coordination. A policy framework finalized in 2027 and implemented in 2028 is operating on a timeline that the technology itself will not respect. The government will need to find mechanisms, possibly through sectoral regulations or DCDT ministerial directives, to provide near-term clarity to businesses and innovators while the formal policy architecture catches up.

South Africa's AI policy direction is broadly constructive for innovation and investment. The trajectory is one of enabling-first, restrict-later—a posture that creates opportunity in the short-to-medium term.

SWEDEN

STUNS, By Andreas Larsson

Sweden entered the AI era with a strong industrial and technological foundation. For more than a century, the country had played a leading role in telecommunications, supported by Swedish industry giant Ericsson and a broader ecosystem of engineering expertise, advanced research, digital infrastructure, and close collaboration between industry and academia. This legacy gave Swedish business leaders an early understanding of how rapidly a new general-purpose technology could reshape global competition.

Being a frontrunner in telecom, it also contributed to growing concern that Sweden's national response to AI was developing too slowly. While Swedish universities, industrial companies, and private foundations—notably the Wallenberg sphere, Ericsson's largest investor—were building substantial research and innovation capacity, representatives of industry and the innovation ecosystem increasingly questioned whether national policy, investment, and coordination were keeping pace with developments in other leading AI nations.

Over the past decade, Sweden's AI policy has consequently developed through three phases: the creation of a strong research and innovation foundation, a period of increasing concern about insufficient national leadership, and a subsequent mobilization to coordinate regulation, infrastructure, research, skills, and adoption.

During the foundation phase, much of Sweden's AI capacity was built through universities, industry, and private foundations. The Wallenberg AI, Autonomous Systems and Software Program (WASP), launched in 2015, created a long-term national platform for research, graduate education, international recruitment, and industry collaboration. The Swedish government adopted a National Approach to Artificial Intelligence in 2018, while the 2020 Research and Innovation Bill included AI-related research and innovation measures. These initiatives strengthened Sweden's capabilities but did not constitute a comprehensive, cross-government program with dedicated implementation structures and measurable national objectives.

The rapid breakthrough of generative AI intensified these concerns during 2023 and 2024. AI Sweden's benchmarking placed Sweden 17th overall in the Global AI Index but only 44th in government strategy. The Royal Swedish Academy of Engineering Sciences (IVA) Chair Marcus Wallenberg has also argued that Sweden and the EU need to invest more in AI development and innovation to preserve competitiveness.

The emerging consensus was not that Sweden lacked research, industrial competence, or technological assets, but that these strengths remained dispersed and were not supported by sufficiently coordinated political leadership, shared infrastructure, investment, and large-scale adoption.

The AI Commission's Roadmap for Sweden

Appointed in December 2023 and chaired by former Ericsson CEO Carl-Henric Svanberg, the AI Commission was tasked with proposing measures to strengthen the development and use of AI in Sweden in a sustainable and secure manner. It submitted its roadmap in November 2024, ahead of schedule, with 75 proposals covering political leadership, regulation, data, computing capacity, research, education, public administration, security, and international cooperation.

The Commission identified strategic planning and political coordination as major weaknesses in Sweden's AI ecosystem. It therefore went beyond proposing isolated programs and prepared the foundation for a comprehensive national strategy. The roadmap reframed AI as a general-purpose technology affecting the entire economy and public sector and identified implementation, rather than basic technological capability, as Sweden's central challenge.

The AI Commission's Roadmap spurs innovation through:

1. **Strategic Direction and Coordination**: By connecting AI to industrial policy, research, education, public administration, infrastructure, regulation, and security, the roadmap gives government, industry, academia, and the public sector a common direction. This reduces fragmentation and makes it easier to align investments, responsibilities, and organizational priorities.
2. **Shared National Capabilities**: The Commission proposed common resources for data, computing, language models, legal support, and public-sector development. Shared capabilities reduce duplicated investment and give smaller companies, municipalities, and public authorities access to resources that would otherwise be too expensive or complex to build independently.
3. **Scaling Beyond Pilots**: The roadmap emphasizes procurement, organizational change, reuse, and deployment. This addresses a recurring Swedish challenge: technically successful pilot projects that do not progress into broad operational use or measurable productivity gains.

Sweden's National AI Strategy and Action Plan

Released in February 2026, Sweden's National AI Strategy establishes the country's first comprehensive framework for AI policy. It sets the objective that Sweden should rank among the world's 10 leading AI nations, become a global leader in the use of AI in public administration, and contribute to a globally leading Nordic AI region.

The accompanying Action Plan lists measures, responsible actors, and implementation mechanisms. The strategy represents a shift from a largely decentralized model toward a whole-of-government approach intended to combine responsible and secure AI with stronger conditions for investment, experimentation, commercialization, and adoption.

Sweden's National AI Strategy spurs innovation through:

1. **Innovation-Friendly Regulation and European Market Access:** Sweden targets predictable, proportionate rules via councils and sandboxes, aligning with the EU AI Act while avoiding gold-plating to help start-ups manage heavy compliance burdens.
2. **Data, Interoperability, and Intellectual Assets:** High-quality and digitized data is treated as essential infrastructure, forcing organizations to balance open public sharing and sovereign language models with strict IP and national security boundaries.
3. **Public Sector as Lead Adopter and Customer:** Over 100 public authorities are tasked with AI adoption to centralize procurement and create demand, though impact depends on overcoming cultural risk aversion and data-secrecy laws (OSL).
4. **Commercialization, Investment, and Industrial Adoption:** State programs like Vinnova support industrially applied AI and exports, but public funding cannot substitute for the massive private growth capital needed to scale and retain companies.
5. **Skills and Global Talent:** Educational funding targets professional reskilling and university integration, but domestic training must be paired with international talent attraction to build world-leading research environments.
6. **Compute, Connectivity, and Energy:** Strategy goals include advanced computing and secure cloud storage, yet actual implementation faces severe physical infrastructure bottlenecks like local grid connections and rising power demands. Research, Science, and Industrial Capability

The 2024 Research and Innovation Bill reinforced Sweden's AI research base through excellence clusters, graduate schools, strategic technology initiatives, national research infrastructure, and increased use of AI in scientific research. These public measures complement the capabilities developed through WASP and long-standing industry-university collaboration.

Research policy spurs innovation through:

1. **Research Excellence and AI-Enabled Science**: Concentrated research environments can attract international talent and strengthen Swedish participation in major European and global programs. AI can also accelerate modeling, simulation, data analysis, and scientific discovery in areas such as life sciences, materials, engineering, climate, and energy.
2. **Translation into Industrial and Economic Value:** Collaboration between universities and industry increases the likelihood that research becomes new products, services, production methods, and companies. Research excellence is nevertheless insufficient by itself. Innovation policy must also connect research environments to entrepreneurs, intellectual property strategies, test environments, procurement, private investors, and international markets.

Sweden's AI policy has moved from a strong but dispersed foundation to a more coordinated national program. The AI Commission defined the leadership and implementation gap, while the National AI Strategy translates that diagnosis into measures covering regulation, experimentation, data, intellectual assets, public adoption, research, skills, infrastructure, and industrial development.

The remaining test is execution. Regulatory support must become operational, public bodies must progress beyond formal assignments, data must be shared lawfully, and companies must gain access to growth capital, global talent, computing resources, and reliable energy. Sweden now has a coherent national direction, but its international position will depend on whether these practical bottlenecks can be removed quickly enough to produce experimentation, investment, commercialization, productivity, and innovation at scale.

A central strategic question moving forward is whether Sweden can translate its historical leadership in telecommunications, engineering, and digital systems into a comparable position in AI. That legacy provides valuable companies, competence, infrastructure, and industrial relationships, but it does not guarantee future leadership. Existing strengths will become an advantage only if Sweden adapts them to a technological environment increasingly shaped by software, data, computing capacity, global talent, and rapid commercial scaling.

UNITED STATES

The Information Technology and Innovation Foundation (ITIF), By Esther Serger and Michelle Maldonado

Over the past few years, the United States has implemented several AI policies aimed at driving innovation through eased regulatory burdens, increased experimentation, stronger infrastructure, and expanded AI literacy.

Winning the AI Race: America's AI Action Plan

Released in July 2025, the AI Action Plan establishes a comprehensive vision for accelerating AI innovation and securing U.S. leadership. It outlines over 90 policy actions across three pillars, mobilizing key federal agencies such as the Department of War, the Department of Commerce, and the Department of Energy. In contrast to the more risk-focused frameworks adopted in Europe and elsewhere, the AI Action Plan places innovation and private sector development at the forefront of U.S. AI policy. To win the global AI race, the plan instructs the federal government to 1) accelerate AI innovation, 2) build AI infrastructure, and 3) lead in international AI diplomacy and security. At the domestic level, the recommended policies seek to ease regulatory burdens through targeted regulatory reform, promote widespread experimentation via a "try-first" culture, and accelerate the build-out of data centers and AI infrastructure by expediting permits and leveraging federal land.

Beyond acting as a national strategy for AI leadership, signaling strong federal support, the AI Action Plan also drives innovation by creating a policy environment that encourages speed, experimentation, and scale. By positioning the federal government as an enabler and key customer of AI, the plan reduces market uncertainty for private developers, strengthening investment incentives and promoting the diffusion of AI solutions across the economy.

The AI Action Plan spurs innovation through:

1. **Smart Deregulation and Experimentation:** Building on Executive Order (EO) 14192, "Unleashing Prosperity Through Deregulation," the Action Plan paves the way for overhauling outdated and excessive AI regulation by restricting federal funding to states with exceedingly stringent regulations and working with industry to revise federal laws that hamper innovation. The Action Plan also seeks to address slow AI adoption in critical sectors, often driven by hesitancy and lack of trust, by promoting a "try-first" culture supported through regulatory sandboxes and AI Centers of Excellence.
2. **Expanded Infrastructure and Energy Capacity:** Accelerating AI innovation and uptake requires expanded supporting infrastructure and a stronger energy supply. The Plan addresses both issues by carving out exceptions under environmental regulations for data center construction, expediting permitting, and optimizing the U.S. electric grid.
3. **Labor Market Development:** Widespread AI adoption also relies on a skilled workforce. Without workers to staff and maintain the infrastructure needed to power AI technologies, or workers capable of effectively utilizing AI, American AI innovation risks coming to a standstill. The Action Plan encourages labor market development by working with industry to identify high-demand occupations, prioritizing AI skills development, and updating study programs to reflect employer demand.

The Genesis Mission

The Genesis Mission, launched through EO 14363, represents a national initiative to double U.S. R&D productivity in 10 years using AI. Building on the AI Action Plan's call to invest in AI-enabled science, the Genesis Mission sets out to build a scientific platform that brings together national laboratories, AI systems, supercomputers, and datasets to drive scientific discovery and propel AI-accelerated innovation. Specifically, the Mission will use federal datasets across scientific domains to develop AI agents capable of automating workflows and hypothesis testing, effectively speeding up the pace of scientific breakthroughs. The Genesis Mission's efforts to leverage AI in modernizing America's scientific engine echo similar efforts by Congress, such as the American Science Acceleration Project, and signal broad government support for AI-enabled scientific research. The initiative is led by the Department of Energy and the White House Office of Science and Technology Policy.

The Genesis Mission spurs innovation through:

1. **Strategic Direction:** By identifying at least 20 of the most pressing science and technology challenges for America, and making these the priority objectives of the initiative, the Genesis Mission provides a clear strategic direction. The program also directs the establishment of competitive internship, fellowship, and prize programs focused on developing AI-solutions for the scientific challenges and domains identified through the Mission. This creates a clear roadmap for success, enabling government and industry partners to direct resources toward the issues that matter the most.
2. **Facilitated Collaboration:** The Genesis Mission includes several directives designed to convene relevant partners and lower barriers to cooperation. Among other things, the EO instructs the Assistant to the President for Science and Technology to "develop

standardized partnership frameworks" and "establish mechanisms for agency collaboration with external partners possessing advanced AI, data, or computing capabilities." In doing so, the program reduces federal agency fragmentation and facilitates a wide range of stakeholders to engage directly in advancing the Mission's objectives. The program also develops clear policies addressing intellectual property rights, reducing uncertainty for all parties involved.

Advancing AI Education for American Youth

EO 14277, "Advancing Artificial Intelligence Education for American Youth," outlines a national strategy for boosting AI literacy and strengthening the AI workforce. It seeks to promote AI proficiency among K-12 students by deploying AI in the education system and expanding training for educators. The initiative establishes an AI education task force, "the White House Task Force on Artificial Intelligence Education," charged with coordinating federal efforts, organizing a "Presidential Artificial Intelligence Challenge," and setting up a public-private partnership. The EO also instructs the Secretary of Labor to expand participation in apprenticeships related to AI and tasks the Secretary of Education with issuing guidance on allocating grants to promote AI integration in education.

EO 14277 encourages innovation through:

1. **Strengthened Incentives and Coordination:** By optimizing grant allocations to encourage AI adoption in education, EO 14277 signals to industry a clear demand for AI solutions designed for educational settings. This not only aligns market interests with government priorities but also provides strong incentives for AI innovation. The initiative also rewards student and educator accomplishments in AI, promoting early experimentation and encouraging both parties to engage in the integration of AI into educational environments. The policy also emphasizes widespread collaboration, engaging academia and industry for technical expertise while leveraging private sector commitments to support AI education. As of September 2025, the initiative had secured investment pledges from 202 businesses.
2. **AI Literacy:** The policy seeks to equip American youth with the skills needed to understand, evaluate, and apply AI, creating opportunities for early learning and exposure. In doing so, it seeks to create an AI-ready workforce and foster "the next generation of American AI innovators." Strengthened AI literacy drives innovation in two key ways. First, it expands AI adoption, creating a larger user base and market for future AI innovations. Second, by increasing the number of people who understand how to use AI, AI literacy also broadens the pool of potential innovators. Individuals with a strong grasp of the technology are better equipped to identify where AI adds value and to develop new applications.

Accelerating Federal Permitting of Data Center Infrastructure

EO 14318, "Accelerating Federal Permitting of Data Center Infrastructure," expands on the second pillar of the AI Action Plan to "Build American AI Infrastructure." It seeks to facilitate the buildout of AI data centers and accompanying infrastructure by easing regulatory requirements and freeing up federal resources. Specifically, the initiative aims to ensure industry has access to the resources and permitting needed to build data centers, energy infrastructure, networking equipment, and

other covered components required to power AI progress. To achieve this, the EO employs measures such as financial government support, regulatory exceptions, and expedited permitting.

EO 14318 encourages innovation through:

1. **Expanded Supporting Infrastructure:** Continued AI progress is contingent on access to vast compute and storage capacity, advanced semiconductors, and a reliable, affordable energy supply. Making federal land available and providing loans, grants, and tax incentives to projects developing these resources enables AI companies to continue scaling up operations and advancing innovation. Moreover, provisions that reduce red tape help provide the operational speed needed to sustain momentum.

Pax Silica

Pax Silica is a strategic partnership launched by the State Department to secure supply chains related to AI and other critical technologies. Currently consisting of nine signatories and five nonsignatory participants, the initiative seeks to deepen economic cooperation, reduce coercive dependencies, and protect innovation from unfair nonmarket practices. Specifically, the U.S.-led partnership is an effort to "establish a durable economic order to drive AI-powered prosperity across partner nations." The initiative covers all layers of the technology stack, ranging from critical minerals and energy supplies to semiconductors and transportation logistics.

Pax Silica drives innovation through:

1. **Policy Alignment:** By coordinating approaches to supply chain security across partner countries, Pax Silica creates a predictable market among signatories, avoiding fragmentation and uniting companies toward a common goal. This contributes to creating an innovation-friendly environment conducive to joint investments and knowledge sharing.
2. **Protected Access to Required Inputs:** Pax Silica seeks to secure access to the key inputs and supporting infrastructure that technological advancement relies on. In doing so, it ensures companies in the United States and participating countries can continue innovating without having to rely on supply chains controlled by strategic adversaries. This insulates technological progress from rising geopolitical tension, enabling a more predictable economic environment.

Advanced AI Innovation and Security

EO 14409, "Promoting Advanced Artificial Intelligence Innovation and Security," issued in June 2026, establishes a strategy for capturing the benefits of quickly evolving AI systems while managing the cyber and national security risks they introduce.

The centerpiece of the executive order is the voluntary framework for developers of highly capable systems designated as "covered frontier models" through an internal benchmarking process. This designation under the EO permits pre-release access to these models for up to 30 days by government and certain trusted partners subject to confidentiality, intellectual property protections, and other cybersecurity parameters.

In its current form, EO 14409 advances AI innovation through:

1. **Voluntary Collaboration Instead of Regulatory Mandates:** The order operationalizes the principle that security and innovation are complements, not trade-offs. Rather than imposing preclearance regimes, the order creates a structured, opt-in channel for developers to work with government experts before deployment. This preserves the speed of the commercial release cycle while giving national security agencies early visibility into advanced cyber capabilities. It further offers developers, in return, government-grade security evaluation and the ability to help shape how "covered frontier model" thresholds are defined. Because participation is voluntary and access is bounded by IP and nondisclosure protections, the framework builds trust between industry and government without creating the compliance overhead that deters investment, particularly for smaller developers. It is worth noting, however, that while the order expressly disclaims mandatory licensing, there are ongoing legislative efforts, such as the Great American AI Act, that are beginning to incorporate mandatory licensing provisions. Whether the EO's light-touch approach survives legislative efforts is to be determined.
2. **Government Demand as a Catalyst for AI Security Markets Innovation:** The EO directs agencies to deploy AI-enabled vulnerability detection across federal systems on a 30-day timeline and converts government procurement into a demand signal for AI security tools. The vulnerability clearinghouse extends this dynamic to critical infrastructure, pooling threat information that no single firm could assemble alone and lowering the cost for private operators to adopt AI defenses. Coupled with expanded federal hiring pathways for cybersecurity talent and enhanced enforcement against criminal misuse of AI, the order also addresses one of the real barriers to adoption: enterprises and agencies hesitant to deploy AI because of security concerns. With this EO, they now have both hardened systems and clearer legal deterrents, which help expand the addressable market for legitimate AI applications.

Ushering in the Next Frontier of Quantum Innovation

EO 14413 was published in June 2026 and sets forth a whole-of-government strategy for accelerating the deployment and commercialization of quantum information sciences: computing, sensing, and networking. The order builds upon the 2019 National Quantum Initiative Act by 1) requiring that national quantum strategy be updated within 180 days of the order and 2) enhancing U.S. leadership in quantum information science and technology (QIST). EO 14413 was signed alongside EO 1442, which also calls for the federal transition to post-quantum cryptography.

Of particular note, EO 14413 contains a Quantum Computer for Application Development and Discovery Science (QC-ADDS) Effort provision, which is a national initiative to deliver at least one quantum computer that is more capable of transformative scientific application capabilities than current machines of today. The advanced machine is also required to be housed at the Department of Energy and, where appropriate, made available for access by the broader scientific community. And finally, the order also establishes a national center to assess the performance of quantum computing systems and help measure progress over time.

To highlight, EO 14413 advances quantum innovation through the following ways:

1. **Mission-Driven Market Demand and New Benchmarking:** Instead of strictly regulating early-stage technology or heavily subsidizing it, the order positions the government itself as an early customer through the QC-ADDS Efforts. The order credibly reinforces market and customer demand for quantum-enabling technologies.
2. **Building the Industrial Base: Supply Chains, Talent and Allied Markets:** The order applies an ecosystem approach to quantum innovation and expansion. It provides explicit instruction to identify and clear barriers that create quantum-specific market hurdles. It also directs the development of a government-wide QIST talent and recruitment strategy that includes the expansion of quantum-relevant apprenticeships and a network of National QIST Workforce Development Institutes.

VIETNAM

Green-X Center, By Tu Anh Nguyen

Abstract

Can a state-led policy framework actually drive AI innovation, or does heavy public direction crowd it out? Vietnam offers an unusually clean test case. Within 30 months, the country built a complete policy stack for science, technology, innovation and digital transformation—culminating in Resolution 57-NQ/TW (2024) and the Law on Artificial Intelligence (2025)—that is among the most methodical in the developing world. This article reads that architecture as an instrument of innovation policy. It argues that several of Vietnam's design choices—treating institutions as a competitive advantage, shifting from ex-ante to ex-post control, adopting a tiered risk model for AI, mandating data interoperability with shared foundation models, and front-loading compute infrastructure—are genuinely pro-innovation. But the same architecture carries a structural tension: an innovation system designed top-down may not generate the bottom-up, market-driven experimentation that AI progress requires. The article identifies the conditions under which Vietnam's model can convert design coherence into innovation outcomes and distills transferable principles for any government trying to make AI policy that drives, rather than merely governs, innovation.

The Innovation Question in AI Policy

AI has turned technology policy into a contest of state capacity. Governments now compete not only over markets and firms but also over the institutional machinery that decides how quickly new capabilities can be developed, tested, and deployed. In that contest, the central design question is deceptively simple: can policy be written so that it drives innovation rather than constrains it? The dominant intuition—reinforced by a decade of debate over data protection and platform regulation—is that rules and innovation trade off against one another, so that the role of policy is mainly to set guardrails after markets have moved. AI complicates this view. The technology is general-purpose, capital-intensive, data-hungry and infrastructure-bound; its diffusion depends on public goods that markets under-supply, including compute, clean data, standards, and skilled people. For AI, the absence of policy is not neutral—it is a binding constraint.

Vietnam provides a striking opportunity to examine the alternative proposition: that a deliberately constructed policy architecture can itself be a driver of innovation. Between mid-2023 and early

2026 the National Assembly enacted five foundational laws—on electronic transactions, data, science and technology and innovation, the digital technology industry, and AI—while the Politburo elevated direction of the whole agenda to the highest level of the political system through Resolution 57-NQ/TW and a Central Steering Committee chaired by the General Secretary. The result is a rare object of study: a near-complete, internally consistent policy stack running from a 2045 vision down to quarterly tasks, assembled at a speed that few states of comparable income have matched.

This article treats that stack as innovation policy and asks what, in its design, is likely to drive innovation—and what is likely to blunt it. The analysis draws on the corpus of strategic, legal, and executive documents that constitute the framework, and is offered for an international scholarly audience interested in how emerging economies are operationalizing AI governance. It proceeds in five themes: it reconstructs the architecture; identifies the design choices that orient it toward innovation; diagnoses the central tension between top-down design and bottom-up innovation; surveys the risks and missing conditions; and concludes with transferable principles.

Vietnam's AI Policy Architecture: A Layered Design

The framework is best understood as four interlocking tiers. A political-orientation tier (Resolution 57-NQ/TW, 2024) sets the vision and assigns responsibility across the entire political system. An institutional–legal tier translates that vision into binding law—most directly the Law on Artificial Intelligence (No. 134/2025/QH15, effective March 2026) and its implementing Decree 142/2026/NĐ-CP, issued only 2 months after the law took effect. A strategy–program tier carries the agenda into operations through the National Digital Transformation Program, the National AI Strategy (Decision 127/QĐ-TTg, 2021), the Digital Infrastructure Strategy, and the Government's Action Program. Finally, an implementation-and-monitoring tier tracks delivery in real time, with all tasks logged online and reviewed monthly. For AI specifically, this means policy is not a single statute but a coordinated system in which vision, law, programs, and measurement are wired together.

At the legal core, the Law on Artificial Intelligence adopts a risk-based model—classifying systems as high, medium, or low risk—that echoes the EU's approach while deliberately simplifying it. It is accompanied by a National AI Ethics Framework, a National AI Development Fund, a controlled-testing (sandbox) mechanism, and a national AI strategy. The governing principle is explicitly people-centered: AI is to serve humans and must not replace human authority and responsibility. Crucially, the law sits inside a wider reform of science management—the Law on Science, Technology and Innovation—that introduces fund-based and lump-sum financing, ex-post control, acceptance of risk in research, sandboxes, commercialization of research results, and a national venture-capital fund. AI policy in Vietnam therefore inherits a pro-experimentation default from the broader innovation statute.

The table below summarizes how a tiered risk model can function as an innovation instrument rather than merely a control device.

Table 5: Vietnam's tiered risk model

Risk Tier	Regulatory treatment	Innovation rationale

High	Conformity assessment, registration, documentation, human oversight, incident reporting	Concentrates scarce oversight capacity where social stakes are greatest
Medium	Transparency and disclosure obligations; lighter ex-ante duties	Preserves accountability without throttling everyday deployment
Low	General principles; voluntary codes; sandbox eligibility	Leaves the bulk of the AI economy free to experiment and iterate

A risk-based AI regime read as innovation policy: matching regulatory intensity to social stakes concentrates oversight where it is needed and leaves room to experiment everywhere else.

Five Design Choices That Orient the Framework Toward Innovation

Read as innovation policy, the architecture makes five choices that are, in principle, growth-enabling. Each reflects a deliberate departure from the precautionary instinct that characterizes much AI regulation elsewhere.

Institutions As a Competitive Advantage, Not a Brake

The Action Program implementing Resolution 57 instructs the state to "turn institutions into a competitive advantage" and to remove "every mindset, conception and barrier obstructing development." This reframing matters for AI because it positions regulation as a service to innovators rather than a constraint on them. The operational expression is the shift, codified in the Law on Science, Technology and Innovation, from ex-ante to ex-post control: the state manages "primarily on the principle of ex-post control" and refrains from dictating research methods or processes. For AI developers, lighter front-end approval lowers the cost of starting, while the burden of demonstrating safety moves to where capability is actually exercised.

Controlled Risk, Sandboxes and Liability Relief

The framework explicitly accepts that innovation entails failure. The science law contains dedicated provisions on accepting risk in research, a controlled-testing sandbox mechanism, and exemption from liability in good-faith experimentation; the AI law extends the sandbox logic to AI systems and new business models. Sandboxes are the single most important pro-innovation instrument in the AI policy toolkit, because they allow regulators and firms to learn together about a fast-moving technology before rules harden. Their value, however, is conditional on a credible exit—clear criteria for graduating a tested product into the general market—without which a sandbox becomes a holding pen rather than a launchpad.

Data as a Production Input, Made Interoperable

Vietnam treats data as "a new resource" and an important means of production and backs that rhetoric with machinery: the Law on Data establishes a National Data Center, a national general database, a data-development fund, and a market for data products and services. The Digital Interoperability Model (Regulation 05-QĐ/BCĐTW, 2025) goes further, mandating that data be created once at its point of origin and shared across the political system, and—decisively for AI—providing a shared big-data and AI platform on a Platform-as-a-Service model, with pre-trained

foundation models offered through application programming interfaces to the entire system. For a developing economy, supplying foundation-model access and clean public data as common infrastructure is potentially the highest-leverage pro-innovation move available, because it lowers the fixed cost of entry for thousands of downstream developers who could never train frontier models themselves.

Infrastructure First: Compute, Data Centers, and Energy

The Digital Infrastructure Strategy places digital infrastructure on par with transport and energy, and the conclusions on basic science name data, laboratories, and high-performance computing as "the strategic infrastructure of basic research in the AI era." The strategy targets hyperscale and AI-specific data centers, additional submarine cables, and near-universal 5G. This is the right ordering for AI: compute and connectivity are prerequisites, not consequences, of an AI economy. The framework is also candid that AI data centers and semiconductors demand clean, stable, competitively priced power at very large scale—and that the energy scheme to supply it is still only at the drafting stage, the material condition with the longest investment lead time.

Talent and An "AI First" State

The architecture pairs a talent pipeline—STEM education, semiconductor and AI training at four key universities, and a basic-science talent program reaching from early identification to globally networked Vietnamese intellectuals—with an "AI First" principle for the state's own operations, qualified by a requirement for trustworthy AI. A government that adopts AI in its own administration becomes an anchor customer for domestic AI firms and a generator of demand-side learning. The constraint, acknowledged in the framework itself, is that building high-quality human capital takes 5 to 10 years, whereas the surrounding KPI system counts results by quarter and year.

The Central Tension: Can Top-Down Design Produce Bottom-Up Innovation?

The architecture's greatest strength—coherence—is also the source of its deepest risk. The entire system is designed by the center and pushed downward; enterprises, universities, and civil society appear largely as implementers rather than co-designers. Yet the empirical literature on innovation systems is consistent on one point: innovation flourishes where market signals, not administrative orders, guide the allocation of capital and effort. AI compounds this, because the most valuable applications are often discovered at the edge—by founders and users solving concrete problems—rather than specified in advance by planners.

This produces what might be called a supply–demand asymmetry. Vietnam has built an impressive supply of policy: laws, strategies, KPIs, dashboards, and a steering apparatus. But the demand side of innovation—the absorptive capacity of firms, the depth of the talent market, the maturity of venture capital, and a culture that tolerates failure—is not yet commensurate. A policy stack can mandate that data be shared and that agencies adopt AI; it cannot mandate that a start-up invent something the market wants. The risk is that the framework optimizes what it can measure (documents issued, services moved online, models exposed via API, etc.) while the harder-to-measure substance of innovation—productivity gains, commercialized products, genuinely novel applications, etc.—lags behind.

The framework shows real awareness of this gap. The Steering Committee's own conclusions warn that "many tasks have only reached the stage of identifying problems without actually beginning to remove bottlenecks," and the 2026 conclusions on basic science were explicitly designed to

repair the strategy's weakest area—long-horizon foundational research. Self-correction of this kind is itself a feature of good policy design. The open question is whether the corrective instruments can be made to bite as hard as the directive ones.

Risks That Can Blunt the Innovation Dividend

Five risks bear directly on whether the framework will drive innovation.

Formalism and Metric-Chasing

When hundreds of tasks are assigned with short deadlines and tied to officials' evaluations, the system is pushed to report completion rather than create change. Administrative-output KPIs are easily met in form; impact KPIs are hard to achieve and to measure. For AI, this could mean models dutifully exposed through APIs that no one builds on, or sandboxes that admit pilots but never graduate them.

An Oversight-Capacity Deficit

Ex-post control and sandboxes are pro-innovation only if the state can credibly evaluate output quality and audit conformity—capacities far more demanding than stamping approvals. The framework concedes that the apparatus to assess high-risk AI systems, the corps of assessors, AI testing facilities, and the case precedents for handling incidents have not yet formed, and that the National AI Ethics Framework is not fully promulgated. Risk-based regulation without assessment capacity is risk-based in name only.

Talent Scarcity and Brain Drain

Most objectives assume enough engineers, AI specialists, and strong research teams. The reality acknowledged at the highest level is a thin corps of leading experts, continuing brain drain, and scientists spending more time on procedures than on research. This is a bottleneck that no administrative order can dissolve.

The Fragility of Centralized Data

Concentrating the nation's data and identity infrastructure delivers efficiency but creates a single high-value attack target, raises acute privacy-and-trust questions, and demands very high levels of redundancy. Because citizens' digital trust is the precondition for every downstream digital service, a breach or a perceived overreach could erode the demand base that AI innovation ultimately needs.

Short-Termism Crowding Out Long-Horizon Work

In 2026, AI and digital transformation are tasked with contributing directly to a double-digit growth target. That pressure usefully forces measurability, but it tilts resources toward what generates GDP immediately and away from what takes 10 to 20 years—basic science, talent and a research culture—precisely the foundations on which durable AI capability rests.

Conditions Still Missing

Comparing the framework's ambitions with the realities it acknowledges, several enabling conditions for an AI-driven innovation economy are not yet in place. A multiyear financing mechanism for research exists as policy intent but not yet in practice, where annual budgeting and document-based control still dominate. The VC ecosystem is small and the national fund has only just begun operating. Foundational data quality—the "correct, sufficient, clean, live" standard—has been achieved mainly for population data, while many sectoral databases remain incomplete

or siloed and large Vietnamese-language datasets for training AI are still scarce. AI-governance capacity—assessors, testing facilities, ethics standards—is nascent. And the energy infrastructure that AI data centers require is at only the earliest planning stage. None of these is fatal, but each is a gating condition: progress on the AI agenda will move at the speed of the slowest of them.

Toward AI Policy That Drives Innovation: Seven Principles

Vietnam's experience suggests principles that travel beyond its borders—for any government seeking to make AI policy a driver rather than a drag on innovation.

1. **Supply public goods before writing rules.** Compute, clean data, and shared foundation models are the binding constraints for most would-be AI innovators. Providing them as common infrastructure—via APIs, at low cost—does more for innovation than any incentive scheme.
2. **Match regulatory intensity to social stakes.** A tiered risk model concentrates scarce oversight where harm is greatest and leaves the bulk of the AI economy free to experiment. The model only works if assessment capacity is built in parallel with the law.
3. **Make sandboxes launchpads, not holding pens.** Pair controlled testing and liability relief with explicit, time-bound criteria for graduating a product into the general market; publish what was learned.
4. **Invite co-design from the demand side.** Innovation is discovered at the edge. Give firms, universities, and users a formal role in setting priorities, so that policy responds to market signals rather than substituting for them.
5. **Measure outcomes, not paperwork.** Shift KPIs from deployment (documents issued, services online, models exposed) to impact (productivity, commercialized products, independently measured user value), and separate the function that measures results from the agency that produces them.
6. **Ring-fence the long horizon.** Protect budgets for basic research, talent, and data infrastructure from annual-growth pressure through multiyear, cross-term financing, so that the foundations of AI capability are not sacrificed to this year's target.
7. **Earn and guard digital trust.** Pair data centralization with independent oversight of access and use, transparency about purpose, and serious security investment. Trust is the demand-side asset on which the entire AI economy rests—quickly lost and slowly restored.

Conclusion

Vietnam has built one of the most coherent AI and digital-transformation policy architectures of any developing country: a consistent long-term vision, a complete legal framework issued at a rare pace, direction at the highest political level, and results-based governance with real-time monitoring. As a feat of policy design, it is genuinely impressive, and several of its choices—institutions as advantage, ex-post control, tiered risk, mandated data interoperability with shared foundation models, and infrastructure-first sequencing—are squarely pro-innovation.

Whether that design drives innovation will be decided not at the level of documents but in the state's ability to close three gaps: between the volume of tasks and the absorptive capacity of the system; between technological ambition and the human, financial, and industrial base that exists today; and between pressure for short-term results and the long accumulation of assets and

capabilities that AI usefulness requires. The framework has already named these gaps itself. The decisive variables are now honest measurement, the patience to fund long-horizon work, and the willingness to let market signals—not only administrative orders—guide where innovation goes. If Vietnam manages that, its architecture will stand as evidence that well-made policy can drive AI innovation. If it does not, it will stand as a reminder that even the best-designed policy stack is only as strong as the demand-side capacity it is meant to unleash.

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This article draws on the corpus of Vietnamese strategic, legal and executive documents (2020–2026) synthesized in the accompanying report, including: Resolution 57-NQ/TW (22 Dec 2024); the Law on Artificial Intelligence No. 134/2025/QH15 and Decree 142/2026/NĐ-CP; the Law on Science, Technology and Innovation No. 93/2025/QH15; the Law on Data No. 60/2024/QH15; the Law on Digital Technology Industry No. 71/2025/QH15; the National Digital Transformation Program (Decision 749/QĐ-TTg, 2020); the National AI Strategy (Decision 127/QĐ-TTg, 2021); the Digital Infrastructure Strategy (Decision 1132/QĐ-TTg, 2024); the Government Action Program (Resolution 71/NQ-CP, 2025); the Digital Interoperability Model (Regulation 05-QĐ/BCĐTW, 2025); the 2026 Work Program (02-CTr/BCĐTW); Notice 20-TB/CQTTBCĐ (2026); and the General Secretary's May 2026 conclusions on basic scientific research. Comparative references to the European Union's risk-based approach reflect widely reported features of that framework.

APPENDIX: A GLOBAL DECLARATION ON FREE AND OPEN AI

To ensure that the Internet delivers positive change for billions of people around the world, the United States has championed the concept of a "free and open Internet." Spearheaded by figures like Secretary Clinton and President Obama as well as endorsed by dozens of countries, including most recently in the Declaration for the Future of the Internet, it emphasized the importance of democratic societies striving for freedom of expression, the free flow of information, and the ability to connect without undue restrictions.[276] Perhaps most importantly, this positive vision of the Internet has provided an intellectual foil to the rise of digital authoritarianism.

As generative artificial intelligence (AI) emerges as another transformative technology poised to significantly impact free expression and economic opportunities, it is crucial that nations commit to similar principles to ensure that these powerful tools serve democratic ideals and promote global progress.

The Significance of Free and Open AI

Generative AI, particularly large language models (LLMs), holds immense potential as an intermediary between individuals and ideas. These models can allow individuals to express and refine ideas, explore information and arguments, and automate communication. These AI tools are primed to quickly become an integral part of every level of society and the economy, from personal communication to domestic politics to global commerce.

However, just as authoritarian regimes sought to limit freedoms online, they may now attempt to control or suppress speech facilitated by generative AI. For instance, China has attempted to restrict AI models that express controversial views threatening the regime's authority. Democratic nations should commit to a vision of free and open AI to counteract such encroachments.

The concept of "free" in AI does not refer to the cost of the technology but rather the freedom to create and use AI for legitimate purposes. Government restrictions on the use of generative AI for legitimate purposes, whether that be to engage in commerce or political speech, would interfere with an individual's right to free expression. Likewise, restrictions on the freedom to use and share public code, weights, and training data that underpin AI models would harm both the freedom to innovate and free trade.

The pursuit of freedom in AI is not without challenges and tensions. Misinformation, disinformation, and hate speech are real risks, but combating harmful speech is best achieved through more speech, not less. Instead of stifling ideas, hiding information, or blocking access to AI models, democratic societies should foster an environment that encourages the responsible use of AI. Likewise, security concerns may arise, but it is essential that freedom takes precedence. By preserving the ability to express ideas and access information, nations can uphold the democratic values that have long underpinned our societies.

The concept of "open" in AI refers to transparency. There will be both open and closed AI models, and competition between these different types of models will foster innovation, collaboration, and creativity. Transparency requires governments to avoid manipulating AI models, such as by prohibiting responses to certain legitimate topics, requiring models to produce specific responses, or intentionally introducing bias into the datasets used to train them. Transparency promotes both accountability and trust and is important to prevent governments from distorting AI-enabled speech and information.

A Global Commitment to Free and Open AI

To safeguard democratic principles in the emerging AI economy, democratic countries should unite behind a global declaration to free and open AI. Specifically, countries should commit to the following principles:

- **Promoting freedom of expression:** Governments should not restrict using AI to seek, receive, and impart information and ideas.
- **Protecting freedom to innovate:** Governments should not restrict building and sharing AI models and training data.
- **Protecting free trade:** Governments should not restrict the export of AI models and training data beyond those necessary for legitimate security concerns.
- **Protecting cultural, artistic, and scientific interests:** Governments should not restrict the use of AI for cultural, artistic, and scientific creations and advancements, and governments should protect the moral and material interests resulting from the use of AI.
- **Encouraging responsible speech:** Rather than censoring AI, governments should focus on empowering individuals through education, fact-checking initiatives, content provenance standards, and fostering counter-speech mechanisms.
- **Embracing transparency:** Governments should not manipulate AI models, including the input and output of these models.
- **Empowering inclusive innovation:** Governments should support the adoption of affordable, inclusive, and reliable AI tools throughout the economy and society, including through initiatives to accelerate digital transformation, promote AI literacy, and close the data divide.
- **International collaboration and cooperation**: Governments should collaborate with the private sector to develop standards and trade agreements that promote free and open AI—ensuring global access to AI tools and preventing undue restrictions on these tools.

Conclusion

As the world navigates the transformative potential of generative AI, it is imperative that democratic countries commit to a global declaration on free and open AI. By embracing the principles of freedom, openness, and transparency, they can safeguard democratic values and prevent authoritarian regimes from stifling free expression and innovation. In doing so, countries can ensure that AI serves as a catalyst for progress, empowering individuals and fostering a global society that upholds democratic ideals.

Signatories

- Information Technology and Innovation Foundation (ITIF)
- Center for Data Innovation
- Center for Social and Economic Research
- Centro Mackenzie de Liberdade Econômica
- Competere

- Fundación IDEA
- I-Com
- IMANI Center for Policy and Education
- Libertad y Desarrollo
- Libertad y Progreso
- Paramadina Public Policy Institute
- Start-Up Nation Policy Institute
- The Macdonald-Laurier Institute
- The Center for Global Enterprise
- Property Rights Alliance
- Fundación Internacional Bases,
- Tanque de Análisis y Creatividad de las TIC (TicTac)
- Austrian Economics Center
- Hayek Institute
- Center for Research and Policy Making
- Bay Area Economic Council
- The New Zealand Initiative
- The Danish Academy of Technical Sciences (ATV)

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