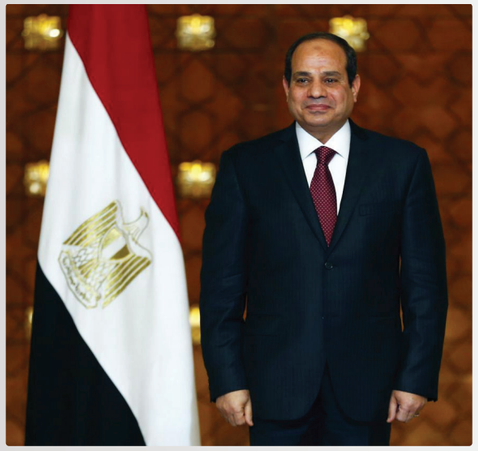
The National Council
for Artificial Intelligence

Egypt National Artificial Intelligence Strategy

Second Edition (2025-2030)

Statement from the President of the Republic



I am proud to launch the Second Edition of the National Artificial Intelligence Strategy 2025-2030.

We live in an era where AI is at the heart of global development, leaving its mark on every aspect of life and unlocking unparalleled opportunities for sustainable progress and growth.

As the pace of advancements in this technology accelerates, it becomes imperative that we fully realize the vast potential of AI to shape a bright future for our nation–one that we can all take pride in.

This edition builds upon the foundation laid by the launch of the first National AI Strategy in May 2021, a moment when Egypt embarked on its journey to explore and harness AI capabilities. This included integrating AI tools into education, enhancing professional development, and fostering robust international partnerships.

With the launch of the Second Edition, we mark the continuation of this ambitious journey toward building a digital society that embraces the most advanced global technologies.

With the rapid evolution of AI, particularly the emergence of large models, we remain steadfast in our pursuit of excellence in this transformative field. Our goal is to solidify Egypt's position as a leader in AI within the Middle East and Africa and as an influential contributor on the global stage.

Despite its remarkable advancements, AI serves as a testament to human potential and intellect. Its true value lies in its ability to improve the quality of life and enrich human experiences. Our ultimate objective is to empower the Egyptian citizen, equipping future generations with the skills to harness modern technology to serve society and fulfill our aspirations for the future.

We must also address the challenges posed by AI and adapt to its rapid evolution. To this end, we will continue to prioritize investments in skill development and capacity building, cultivating AI professionals who meet the highest international standards.

By adopting AI technologies, we aspire to transform key sectors such as healthcare, education, and agriculture, thereby enhancing the quality of life for all Egyptians. Furthermore, we are committed to developing robust national frameworks for data governance, ensuring its safe and effective use. This will support innovation, strengthen the entrepreneurial ecosystem, and create opportunities for startups while attracting investments to build a thriving AI ecosystem.

Modern technology must always serve humanity. Therefore, we must ensure that AI applications are developed responsibly and ethically, in alignment with human values and global standards. This approach promotes the common good, safeguards individual rights, and enhances sustainable development efforts.

In conclusion, I look forward to the Second Edition of the National AI Strategy serving as a comprehensive roadmap toward a future defined by innovation and prosperity.

Together, with the unwavering determination of the Egyptian people, we will continue building a nation that fulfills the ambitions of its citizens and secures Egypt's rightful place on the global stage.

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Egypt National Artificial Intelligence Strategy

Second Edition (2025-2030)

1. Context

Leading countries around the world are in a race to advance Artificial Intelligence (AI) maturity as the critical ingredient for national competitiveness in the coming era. This requires a national effort orchestrated by the government in cooperation with national and international entities to drive AI adoption in a safe, ethical, and value-targeted manner.

Egypt had already joined the league of leading countries in releasing its first edition of the National AI Strategy in 2020, launching several key initiatives for raising AI awareness, integrating AI into education, professional development, technical and vocational training, promoting AI research, supporting entrepreneurship and startups, and fostering international cooperation.

However, at the end of 2022, with the emergence of AI large models, and the AI generative models in 2023, the evolution path and development pace of the AI industry have been completely changed. We see countries racing to maximize the benefits of this technology, and Egypt is definitely planning to keep up with this evolution and achieve maximum benefits at both societal and sectoral levels. the Egyptian government believes it is critical to both our economic and national security that Egypt prepares for the opportunities AI brings, and that the country is at the forefront of solving the complex challenges posed by an increased use of AI.

The second edition of the National AI Strategy builds on Egypt's current strengths and represents the start of the second phase for AI adoption in Egypt, while the first represents the initial milestone in the path of AI. Now we are moving on more solid and clear grounds, recognizing that maximizing the potential of AI will increase resilience, productivity, growth, and innovation across the private and public sectors.

Building our strengths in AI will take a whole-of-society effort that will span the next decade. This is a top-level economic, security, health, and well-being priority. The Egyptian government sees being competitive in AI as vital to our national ambitions for regional prosperity and shared global challenges. AI capability is therefore vital for Egypt's national competitiveness and international influence.

This document sets out Egypt's strategic intent at a level intended to guide action over the next five years, recognizing that AI is a fast-moving and dynamic area. Detailed and measurable plans for the execution of the second edition will be described in the following chapters.

2. Executive Summary

The main objective of the National Council for Artificial Intelligence (NCAI) is to, prepare, formalize, approve and govern the implementation of Egypt's National AI Strategy. This document builds on the previous version of the AI strategy which was implemented in conjunction with relevant ministries, along with input from independent experts and private sector companies. NCAI would like to extend its thanks to all parties for the roles they have played in producing this document.

The NCAI stresses on the emergence of disruptive AI technologies such as generative AI, and on its impact on profoundly changing the current global economic and social development model, injecting new impetus into national development. Egypt is no exception. To establish a comprehensive AI strategy system is of great significance to the country's future development and competitiveness.

This strategy reaffirms the firm belief of Egypt in the investment in responsible and safe AI that serves the public good, protects people's rights and safety, and drives socio-economic development.

To this end, Egypt is adopting its second edition of the National AI Strategy, which aims to realize the following vision:

- **Inclusive AI to foster Digital Egypt, promoting social and economic development and benefiting all Egyptians.**
- **National foundational model as a basis to drive industry development and regional cooperation, making Egypt a leader in AI in Africa and the Arab region and an active international player.**

The mission statement emerging from this vision is to:

"Create an AI industry supported by governance, technology, data, infrastructure, ecosystem, and talents, to ensure its sustainability and competitiveness for purposes of promoting Egypt's development."

To achieve the vision and mission above, Egypt has identified six strategic objectives to drive socio-economic development, prosperity, innovation, and sustainable development:

1. Ensure ethical and responsible AI use by establishing a comprehensive AI regulatory system, activate the ethical framework, and put a nucleus for a clear regulatory body, actively contributing to global efforts and playing an active role in AI different international fora.
2. Enhance quality of life and sectoral efficiency through AI applications
3. Ensure data accessibility and sharing by developing frameworks for national data governance and strengthening life cycle management of domestic data.
4. Build a robust scalable AI infrastructure and cloud services, innovate business models, and create a good digital foundation for the development of the AI industry with the support of infrastructure development
5. Create a healthy AI ecosystem by supporting local startups, small and medium enterprises, and innovation efforts, and strengthening the investment of venture capital institutions in Egypt.
6. Strengthening the quantity and quality of local AI talents and experts.

By achieving these strategic objectives, Egypt will realize its anticipated strategic goals:

- By 2030, the ICT sector can contribute to Egypt's GDP by **7.7%**[1].
- **26%** of Egypt's workforce that is considered a marginal population would benefit from AI tools and applications[2]
- As AI technology develops, **36%** of the general public will have access to AI and AI-powered products in their daily lives in 5 years[3].
- The number of AI professionals/experts is expected to reach **30,000 by 2030**.
- Enable and support the establishment of **250+** successful AI companies in Egypt.
- AI technology, including generative AI, could help accelerate academic research to **double** the current number of AI publications to reach **6000 publications per year**, establishing Egypt as a regional research cooperation center.

Six pillars have been identified to achieve the strategic objectives and strategic goals of the strategy. "Governance" comes as the first pillar to ensure the safe and ethical use of AI. The "Technology" pillar focuses on the use of large language models and AI algorithms to maximize and leverage the benefits of AI for specific industries and use cases. "Data" is considered the fuel of AI algorithms from training data sets to policies for data sharing and data privacy. The fourth element of AI is definitely the "compute infrastructure", ensuring that we can rely on the right compute infrastructure to be able to develop the applications needed by the country.

In addition to achieving the AI regulatory framework and developing the basic elements of AI (AI models, data, and compute infrastructure), the government aims to cultivate the right "talents" and capabilities at all societal levels and to support the Egyptian "Ecosystem", and the AI industry, to gain international competitiveness.

1. ai-econ-impact-middle-east.pdf (pwc.com)
2. AI Will Transform the Global Economy. Let's Make Sure It Benefits Humanity. (imf.org)
3. The Ipsos AI Monitor 2024 | Ipsos

3. Background

Digitalization as an engine of economic growth brings new values which include economic value, social value, industry value, and business value. On the other side, network infrastructure is the cornerstone of the development of the digital economy, and AI & Cloud are the key enablers of the digital economy. Meanwhile, computational power is changing the mode of economic growth; the growing sophistication of AI and machine learning technologies is transforming our lives. (Fig.1)

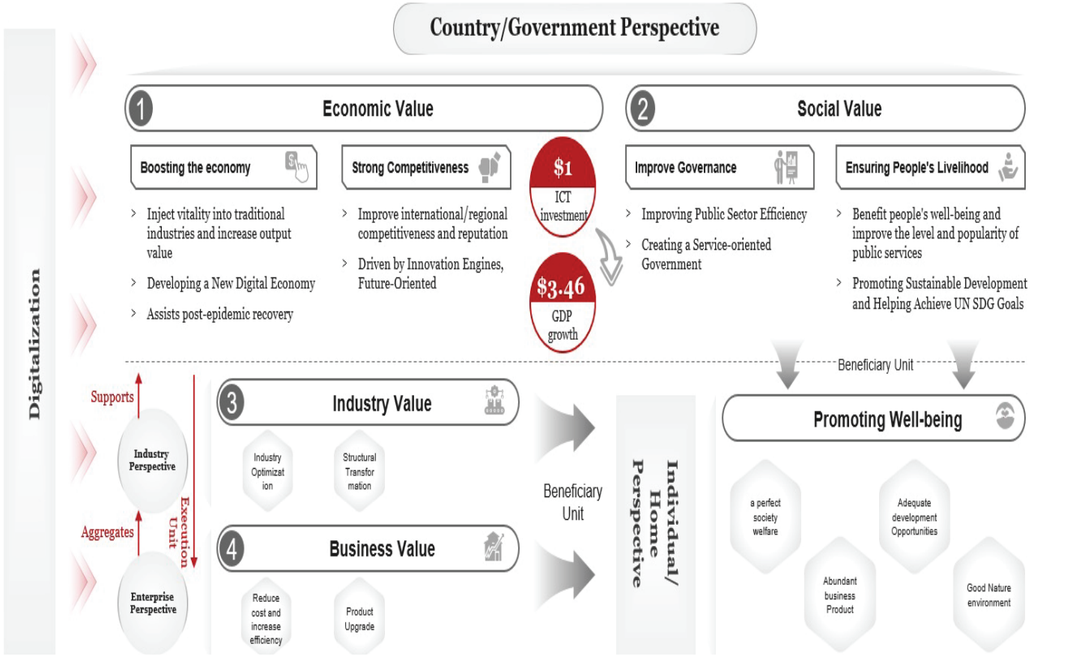


Fig.1- Digitalization and Digital Economy (Source: Literature research; Desk research; Roland Berg)

3.1 AI Trends

AI has emerged as a transformative force in the global economy, as one of the main characteristics of the 4th industrial revolution (Industry 4.0), introducing both promising opportunities and significant concerns. As a new variable, AI has the potential to revolutionize development and industries, increase productivity, and drive economic growth by automating tasks, improving decision-making, and fostering innovation.

Computational power has a significant impact on the macroeconomic development of the country. The trend of computational power with respect to GDP and the digital economy shows a positive correlation; with higher computational power, the impact of fueling economic growth gets stronger. One-point increase in the Computing Index, GDP increases by 1.8%, and the national digital economy will increase by 3.5%[4]. (Fig.2)

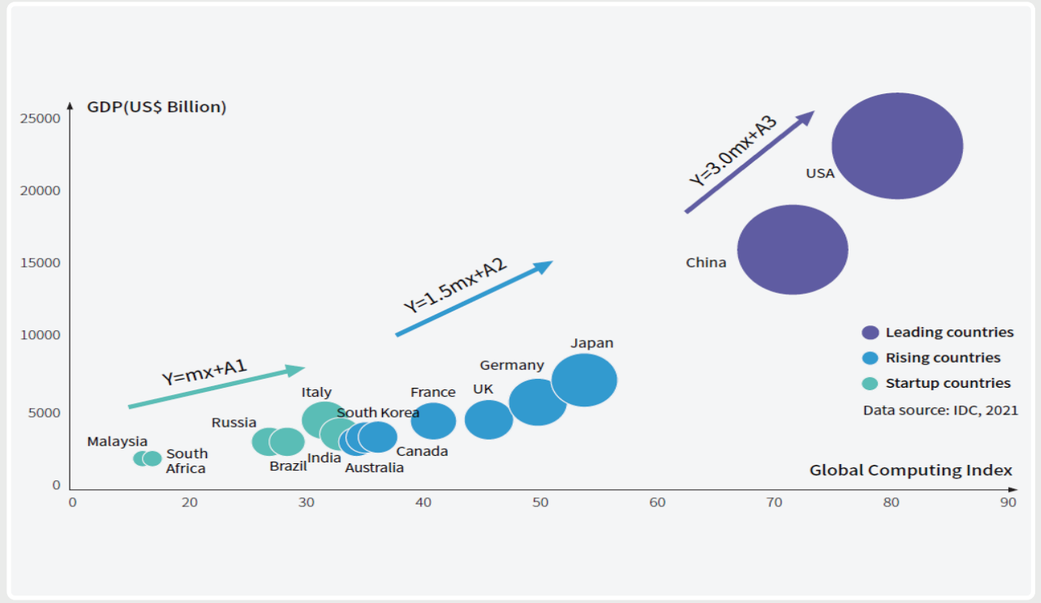


Fig.2- Regression Analysis of Computing Index and GDP

4. Inspur Information Unveils the IDC White Paper 2021-2022 Global Computing Power Index Assessment | Business Wire

Moreover, the value of AI includes automation that leads to productivity increases that enhances consumption; global GDP could be up to 14% higher in 2030 as a result of AI— the equivalent of an additional $15.7 trillion— making it the biggest commercial opportunity in today's fast-changing economy[5] (Fig.3).

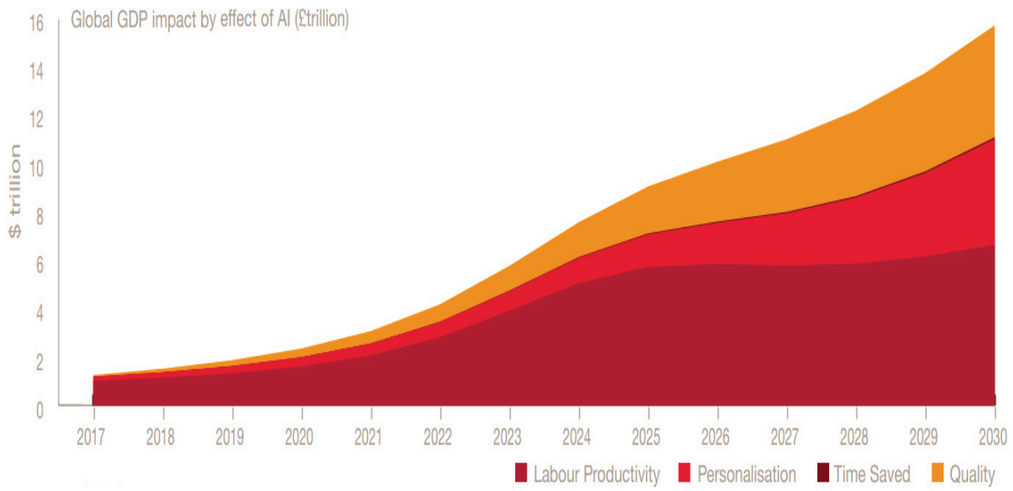


Fig. 3- Global GDP Uplift due to AI ($ in Trillions) Source: PwC Global AI Study

A quick look at some investment indicators in the field of AI in leading countries reveals that these nations early recognized the reality that achieving a competitive advantage in AI is the path to progress, a fact that meant that the new global race is a race to equip themselves with emerging technologies, with AI at the forefront.

Global aspects in this regard were manifested in:

- Countries race to formulate their national AI strategies for artificial intelligence, starting from Canada in 2017, followed by more than 60 other countries, according to the OECD AI Policy Observatory.
- Additionally, the number of agreements between countries for cooperation in this relatively new field is increasing exponentially.
- The global AI market size was valued at USD 515.31 billion in 2023 and is projected to grow to USD 2,740.46 billion by 2032, with a CAGR of 20.4% during the forecast period1. Another estimate suggests that the market will reach USD 4,726.6 billion by 2033, with a CAGR of 38.1% from 2024 to 2033. The market for AI technologies is expected to grow from around USD 200 billion in 2023 to over USD 1.8 trillion by 2030[6].

5. Sizing the prize (pwc.com)
6. Artificial intelligence (AI) worldwide - statistics & facts | Statista

- While overall AI private investment decreased in 2023, funding for generative AI sharply increased. The sector attracted USD 25.2 billion in 2023, nearly nine times the investment of 2022 and about 30 times the amount in 2019. Generative AI accounted for over a quarter of all AI-related private investment in 2023[7].
- In 2024, the proportion of research papers focused on AI topics has seen a significant increase. According to the AI Index Report, AI-related research papers now account for approximately **6.3% to 17.5%** of all scientific publications, depending on the specific area of AI[8].
- AI has taken a prominent position on the agendas of international organizations, with each addressing aspects that intersect with its area of expertise.
- Large models catalyze AI development and reset the market landscape of AI, bringing all players on the same playing field again. Countries may exert AI-Generated Content (AIGC) as a tool to take the lead again in AI. AIGC development is accelerating, and the computing power has multiplied exponentially in the last 5 years.

7. The current state of AI, according to Stanford's AI Index | World Economic Forum (weforum.org)
8. Scientists increasingly using AI to write research papers • The Register

3.2 Benchmark Countries Study

Benchmarked countries are selected based on 3 criteria, namely:

- **AI Prowess:** Ensures that countries selected have relevant AI strategies in place and are recognized by a common global AI index
- **Arab World Regional Coverage:** Includes all Arab countries with similar economic, social, and cultural characteristics
- **Innovation Index:** Ensures that each region has at least one benchmark for study for each region, selecting the country with the highest Global Innovation Index

Benchmarks are studied across 6 pillars of the Capacity Assessment Framework (CAF) model, which include Government, Ecosystem, Talent, Data, and Infrastructure. Fig. 4 presents the countries' rankings in Tortoise Media's Global AI Index 2024 by region.

Governance: The existence of national policies, regulations, ethics guidelines, and governance frameworks to guide the ethical and safe development of AI.

Technology: The level of advancement in developing innovative AI models and algorithms leveraging latest techniques, like deep learning, across different application domains.

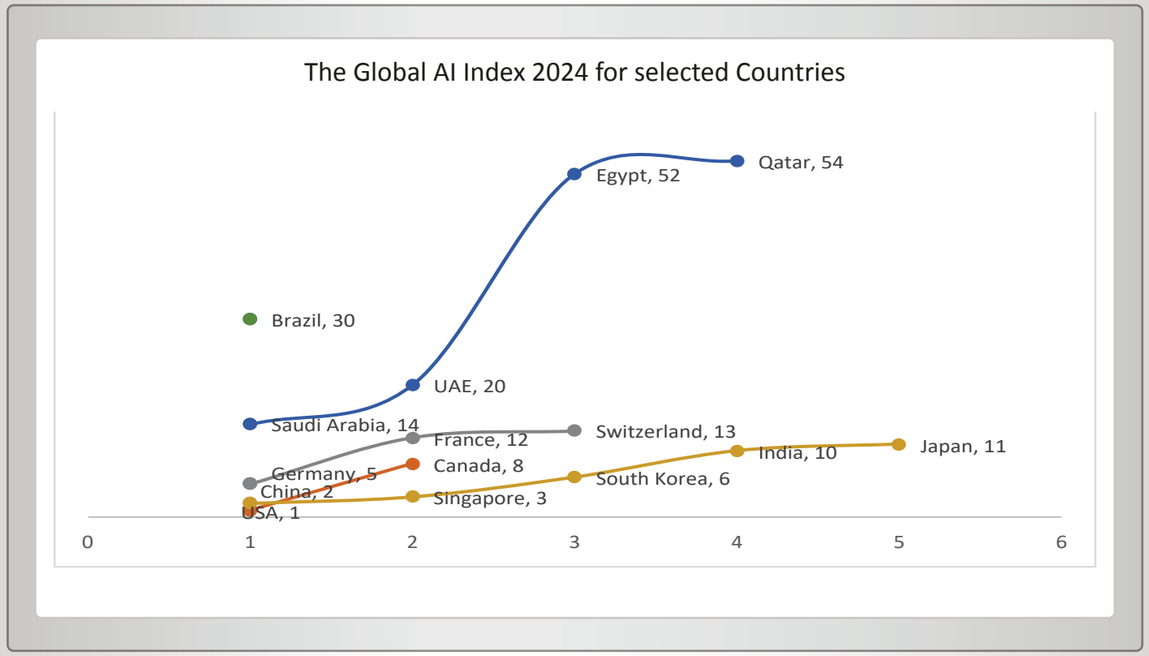


Fig. 4- Tortoise Media's Global AI Index Rankings 2024

Data: High quality and availability of data for AI development in terms of accuracy, completeness, and representativeness.

Infrastructure: The availability of advanced computing infrastructure, high-speed connectivity, data centers, and cloud services to enable AI development and deployment.

Ecosystem: The level of maturity of the AI ecosystem, including the availability of AI skills, research, industry activity, funding, and collaborations among key stakeholders.

Talent: Digital population is typically high, with high-quality of AI-related education and a high level of diversity in the talent pool.

In the process of formulating the strategy, Egypt is being guided by the benchmarking criteria as well as by the experience of a number of countries, including Brazil, China, Korea, Saudi Arabia, Turkey, and UAE. **(details of the countries are in the Appendix).**

Brazil:

- FINEP (under MCTI) provides financial resources, policy frameworks, and collaborative platforms to cultivate Brazilian innovative industry.
- The Center for AI played a key role in demonstrating PPP.
- Brazil set up 8 research centers dedicated to AI industrial applications, with key sectors being agriculture, manufacturing, defense, education, cybersecurity, smart cities, and healthcare.
- Brazil learned from both Estonia and the UK to integrate all government data successfully.

China:

- Municipal and provincial governments across China are establishing cross-sector partnerships with research institutions and tech companies to create local AI innovation ecosystems and drive rapid research and development.
- Invest heavily in R&D - China has the highest dedicated government spending on AI technology development
- China has successfully integrated infrastructure at the national level to embrace the digital era
- China has strong AI-related promoting policies, such as processing eastern data in the west
- China cultivates AI talent based on inputs from both industry and academia, e.g., AI+ training model

Korea:

- To stimulate AI Innovation, South Korea's AI Act allows anyone to develop new AI technology without having to obtain any government pre-approval, as a general principle.
- South Korea has a relatively clear roadmap to integrate AI into the business ecosystem, with dedicated investments and technology direction.
- The VC investment is very progressive, with 376 scaleups (25% of the total) able to raise $12.5 billion, which is contributing to advancements in AI deep technologies.

Saudi Arabia:

- The **Saudi Data & AI Authority (SDAIA)** responsible for driving the national agenda for data and artificial intelligence (AI) in Saudi Arabia.
- Saudi Arabia's National Data Management Office (NDMO) sets out the open data regulatory frameworks.
- Saudi Arabia initiated the NEOM project, which creates the best environment for the creative use of data and AI.
- The draft new Intellectual Property (IP) Law is one of the first IP laws in the Middle East region to include IP created by AI
- International collaboration to boost Saudi Arabia's digital economy for government, corporations, and individuals.

Turkey:

- VC in Turkey-based startups is much higher than those based in other MENA countries.
- The AI Institute enables researchers to deal with actual business cases to facilitate knowledge transfer into commercialization.
- The National Data Dictionary project aims to compile unorganized data in a structured way.

UAE:

- The Ministry of State of Artificial Intelligence, Digital Economy and Remote Work Applications plays a crucial role in shaping policies, strategies, and regulations related to these domains.
- Academic to product: Abu Dhabi's Technology Innovation Institute (TII) launched the flagship Abu Dhabi's Falcon, a 40-billion-parameter AI model.
- After a large investment in the network infrastructure, UAE ranks 1st in the Arab region and 4th in the world for 5G launch, with 80% coverage in main cities.
- UAE has an active commercial environment and strong international talent collaboration, which foster a mature AI ecosystem.

4. AI in Egypt

The government of Egypt recognizes the importance of AI to advance human knowledge and technical capabilities and to accelerate digital transformation in Egypt, both of which are crucial for the country's development. The vast opportunities that AI offers to the entire economy and its impact on accelerating socioeconomic development are some of the driving forces to embark on the 2nd edition of the AI strategy and consider it as a top priority on the national ICT agenda. The main focus is on boosting Egypt's skills and competitiveness in these fields to reap the multiple benefits of these emerging technologies to meet the rapid development of the nature of jobs required in an AI-driven economy. Also, steps will be taken to support the nascent Egyptian AI industry and get it on the road to international competitiveness.

Egypt's efforts in the field of AI are an integral part of its broader efforts towards building Digital Egypt, and endeavors to avail all success factors of a digital transformation ecosystem. Efforts include:

- Investments in the digital infrastructure
- Human development and improving citizens' quality of life.
- Digital innovation – Creativa Innovation Hubs
- Regulatory Framework:

While the Egyptian AI law is currently in its final development phase, there are some other existing laws and regulations that serve as elements supporting AI governance:

- The Egyptian Data Protection Law (No. 151 of 2020), which includes guidelines for the collection, processing, storage, and transfer of both personal and sensitive personal data.
- Data Centers Regulatory Framework (2021)
- The Egyptian Anti-Cyber and Information Technology Crimes Law (No. 175 of 2018), the governing framework for cybercrime legislation in Egypt and penalizes different forms of pre-defined cybercrimes.
- The Egyptian Consumer Protection Law (No. 181 of 2018), which safeguards consumers against unfair trade practices, including trade within cyberspace
- The Telecommunication Regulation Law (No. 10 of 2003), which regulates digital communication and sets guidelines for secure data transmission.
- Fintech Law (2022). This law explicitly mentions the use of AI in processing consumer data, which reflects Egypt's will to promote the use of AI tools across strategic sectors, including the financial services sector.
- E-signature Law (2004)
- Intellectual Property Law (2002, 2020)

4.1 Egypt's Efforts in Artificial Intelligence

With a firm belief in the importance of AI, Egypt has taken serious steps towards AI inclusive realization. Efforts have intensified since 2019 with the formation of the National Council for Artificial Intelligence, followed by launching the first National AI Strategy. Following is a summary of the main milestones implemented, showing the current position of Egypt in 2023.

- **2019**: Egypt has formed the **National Council for Artificial Intelligence (NCAI).** The Egyptian Cabinet approved its formation to develop and govern the implementation of Egypt's National AI Strategy.
- **2020**: Establishment of the Applied Innovation Center (AIC) with the aim of developing innovative solutions with a developmental impact.
- **2021**: The President launched the National AI Strategy after its approval by the National Council for AI, **Egypt National AI Strategy (NAIS)** - key catalysts for the country's digital transformation, setting out a strategic approach for harnessing AI's potential to achieve development goals.

The strategy aims to leverage the benefits of AI for the economic and social development of all. The NAIS was developed through a multi-stakeholder process, led by MCIT and NCAI, which helped to involve various government entities and representatives from business, academia, and the technical community. NAIS includes 4 pillars:

Pillar 1:

AI for Government (AI4G) to increase efficiency and transparency while reducing redundancies in the government and its services.

- Development of automatic recognition of the spoken Arabic language with the Egyptian accent (with an accuracy rate of 94.1%, which is the highest in the world for the Egyptian accent) – The application was used in the production of court minutes.

Pillar 2:

AI for Development (AI4D) to fulfill internal goals and SDGs, supporting the economy, environment, and people.

- Establishment of a 68-GPU high-performance computer and establishing partnerships with universities and international companies to participate in the implementation of applied AI projects with a developmental impact.
- Development of AI-based innovative solutions in the fields of agriculture, health, judicial applications, and Arabic natural language processing.

Pillar 3:

AI for Human Capacity Building (AI4H) to address the educational and professional gaps that may slow the AI industry's uptake and growth promoting AI research in Egypt. Various talent development, capacity building, and educational initiatives have been adopted all over the country to equip schoolchildren, graduates, postgraduates, and professionals.

- Increased number of AI faculties in Egyptian universities.
- Establishment of Egypt University of Informatics.

Ministry of Communications and Information Technology has launched a series of initiatives under the title "Digital Egypt Generations" aimed at creating a distinguished and innovative generation of Egyptian youth capable of competing locally and globally, and effectively contributing to building a modern digital Egypt:

- Digital Egypt Builders Initiative (DEBI) by Aims to grant outstanding graduates a professional master's degree from top global universities in various fields, including artificial intelligence.
- Digital Egypt Pioneers Initiative (DEPI) target the training of university students and graduate students from all disciplines in cooperation with international companies.
- Digital Egypt Cubs Initiative (DECI) target the training of school students from grade 7 to 11.
- Digital Egypt Marvels Initiative (DEMI) target the training of school students from grade 4 to 6.

- Specialized programs offered by the Information Technology Institute (ITI) of MCIT in cooperation with major international companies and universities (such as partnership with the French EPITA).
- Specialized programs offered by the National Telecommunication Institute (NTI) in cooperation with major international companies.
- Educating government employees as well as holding workshops for young people at Creativa Innovation Hubs.

Pillar 4:

AI for External Relations (AI4X) to place Egypt, the Arab world, and Africa in the sphere of international AI activity and development.

- Egypt is leading regional cooperation efforts in the Arab and African regions:
  - The country is Chair of the **African Union's AI Working Group**, tasked with drafting a continent-wide AI strategy.
  - Egypt is the Chair of the **Arab League's AI Working Group** and is establishing bilateral collaborations on AI with several countries.
- On the international level, Egypt is playing a critical role in cooperation with international organizations and countries:
  - Egypt is the first country in Africa and the Arab region to adhere to OECD AI Principles.
  - Egypt has been actively participating in global AI dialogues on multiple international platforms:

- Egypt signed several bilateral and multilateral agreements with key countries and companies covering different AI-related dimensions.

- **2023:** Egypt launched the Egyptian Charter for Responsible AI aligned with OECD AI principles. On the Global AI Index, countries are ranked by their AI capacity at the international level. Egypt ranked the 52nd in 2023. Moreover, Egypt rose 49 spots on the Government AI Readiness Index issued by Oxford Insights, from rank 111 in 2019 to 62 in 2023.

4.2 SWOT Analysis

The main parameters that we have considered for the SWOT analysis are Human Resources, ICT Sector Infrastructure, Data Resources, and Research Infrastructure and Planning.

Strengths:

- Egyptian scientists and engineers with AI expertise are employed by universities, research centers, and industrial companies alike. Hundreds of AI researchers are employed by the National Research Center, the Academy of Scientific Research and Technology (ASRT) and its affiliates, the Agriculture Research Center, etc.
- Many Egyptian students are choosing ICT-related subjects to study at the university level.
- The increasing number of public Faculties of Computers and Information.
- ICT infrastructure.

Opportunities:

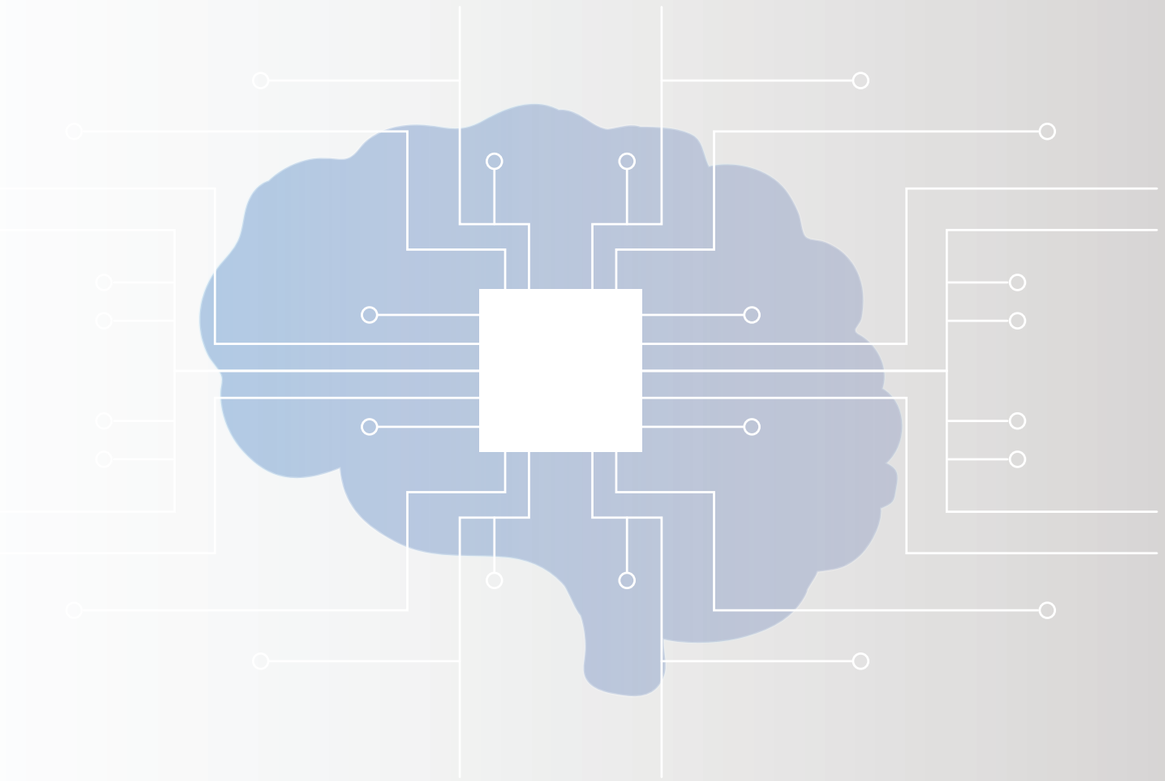
- Huge potential to increase government effectiveness using AI.
- Decision support systems to compensate for technical expertise and standardize processes.
- Natural Language Processing (NLP) applications can compensate for the lack of literacy or foreign language skills.
- AI and Machine Learning could solve many governmental problems, such as inferring knowledge from data, detecting and averting security threats, fake news detection, etc.
- There are many problems related to the lack of technical expertise that knowledge-based systems could solve in many domains, such as healthcare, transportation, agriculture, etc.
- There are social and business needs for better tools related to Arabic Natural Language Processing such as machine translation, text summarization, and semantic information retrieval.

Weakness:

- The number of highly qualified senior professionals.
- Lacking sufficient research planning and innovation processes, especially linking research to society's needs.
- Inadequate awareness of the importance of intellectual property and its protection.
- Lack of data availability and quality.
- Inadequate research infrastructure.
- Insufficient AI research and education
- Research planning, management, social needs, and innovation
- Universities and research institutions' physical infrastructure

Threats:

- Decreased availability of data due to policy changes.
- Human capital flight.
- The negative impact of AI applications on employment
- Decreased availability of data due to limiting changes in open data policies.
- Inability to retain capable domestic researchers, who are attracted by employers in other countries.
- The negative impact of AI applications on the Egyptian workforce



5. Strategy Overview

Egypt's National AI strategy aims to make full use of current scientific and technological development opportunities to build a national AI framework suitable for development in the next five years. Egypt's AI strategy should define a clear vision and mission statement, clear and quantifiable strategic objectives, and strategic initiatives that support the achievement of the identified objectives.

Egypt's AI Strategy Vision:

- **Inclusive AI to foster Digital Egypt, promoting social and economic development and benefiting all Egyptians.**
- **National foundational model as a basis to drive industry development and regional cooperation, making Egypt a leader in AI in Africa and the Arab region and an active international player.**

The mission statement of Egypt's AI strategy is to:

"Create an AI industry supported by governance, technology, data, infrastructure, ecosystem, and talents, to ensure its sustainability and competitiveness for purposes of promoting Egypt's development."

5.1 Strategic Objectives

To achieve the vision and mission above, Egypt has identified six strategic objectives:

1. Ensure ethical and responsible AI use by establishing a comprehensive AI regulatory system, activating the ethical framework and putting a nucleus for a clear regulatory body, actively contributing to global efforts, and playing an active role in AI different international fora.
2. Enhance the quality of life and sectoral efficiency through AI applications.
3. Ensure data accessibility and sharing by developing frameworks for national data governance and strengthening the life cycle management of domestic data.
4. Build a robust scalable AI infrastructure and cloud services, innovate business models, and create a good digital foundation for the development of the AI industry with the support of infrastructure development.
5. Create a healthy AI ecosystem by supporting local startups, and small and medium enterprises, and innovation efforts, and strengthening the investment of venture capital institutions in Egypt.
6. Strengthening the quantity and quality of local AI talents and experts.

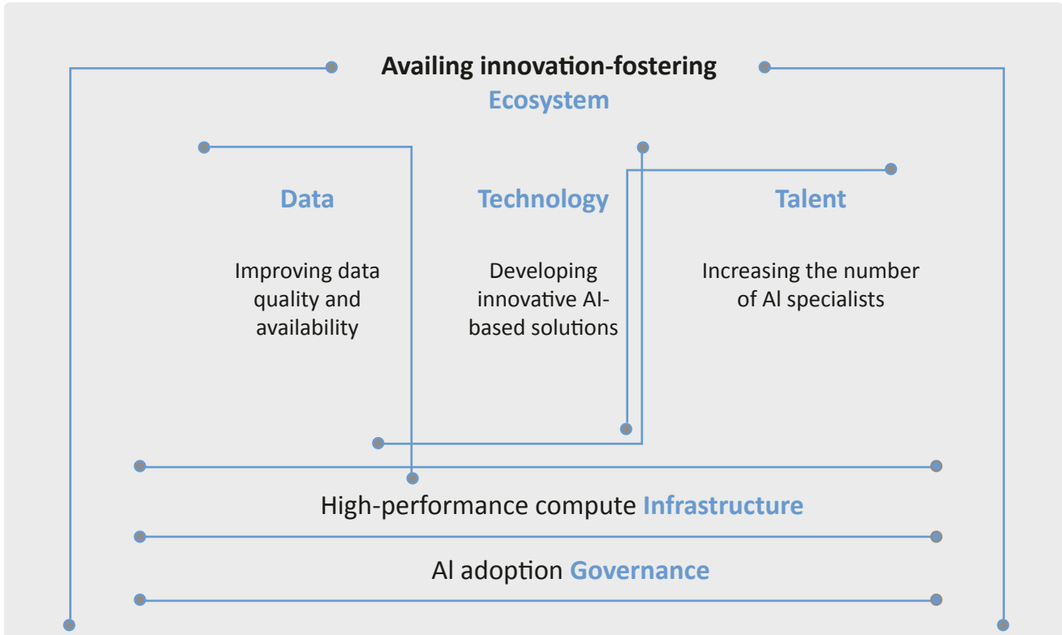
5.2 Strategic Goals

Guided by the vision of inclusive AI to foster Digital Egypt, Egypt will benefit socially, and economically and improve international influence. The National AI Strategy has identified the following strategic goals to achieve by the implementation of its strategy 2025-2030:

- **On the macro level:**
  - By 2030, the ICT sector can contribute to Egypt's GDP by **7.7%**[1].
  - **26%** of Egypt's workforce which is considered a marginal population would benefit from AI tools and applications[2].
  - As AI technology develops, **36%** of the general public will have access to AI and AI-powered products in their daily lives in 5 years[3].
- **On the micro level:**
  - The number of AI professionals/experts is expected to double to **30,000 by 2030.**
  - Enable and support the establishment of **250+** successful AI companies in Egypt.
  - AI technology including large models could help accelerate academic research to **double** the current number of AI publications to reach **6000 publications per** year, acting as a regional research cooperation center.

5.3 Strategic Pillars

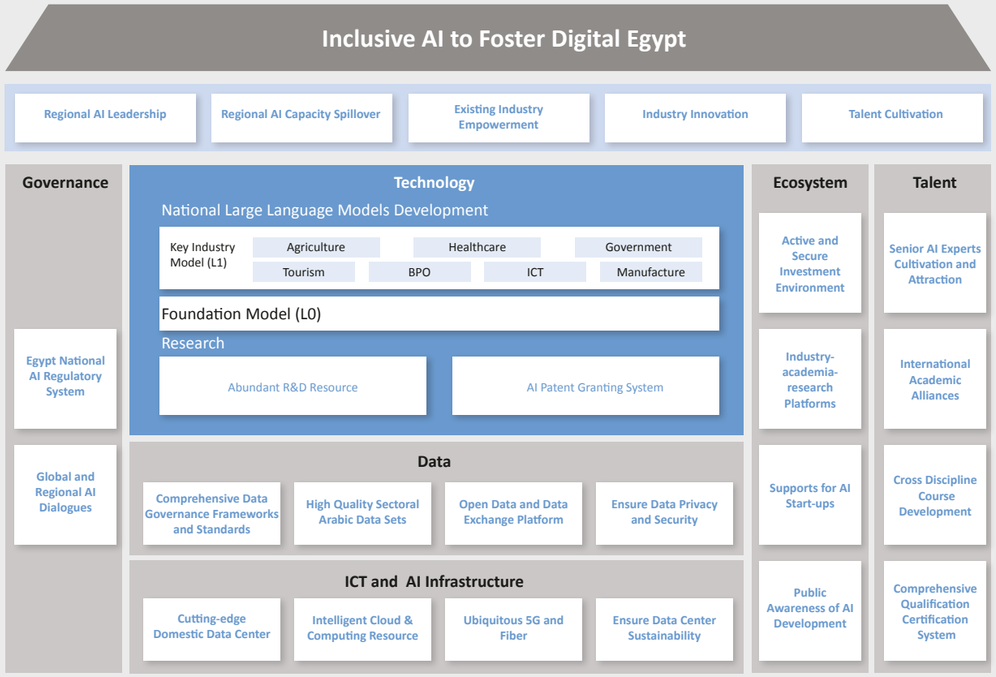
To achieve the identified strategic objectives, the strategy has identified six strategic pillars, namely: Governance, ICT and AI Infrastructure, Technology, Data, Talents, and Ecosystem.



The following sections will provide an in-depth view into each of these pillars, the high-level objectives for each, as well as the initiatives to be undertaken for each pillar.

6. AI Strategy Blueprint

The overall AI strategy blueprint depicted in the following diagram shows the strategy's six pillars, the initiatives beneath each of the pillars, and the corresponding objectives.



6.1 Governance Pillar

The Governance pillar responds to the strategic objective “Ensure Ethical and Responsible AI Use.” To fulfill this strategic objective, two initiatives are identified, namely Egypt Nation AI Regulatory System and global and regional AI dialogues. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [2 Initiatives, 7 Objectives]

Strategic Objective
Ensure Ethical and Responsible AI Use

Initiatives	Objectives
Egypt National AI Regulatory System	Robust comprehensive AI regulatory system
	Develop and Implement a Comprehensive Framework for Ethical and Responsible AI
	AI Competitive Leadership
	AI Assurance in Organizational Culture
Global and Regional AI Dialogues	Leading Regional Collaboration
	Engage and actively contribute to global AI Governance efforts
	Unified Arab AI Standards

G-I1. Egypt National AI Regulatory System

The “Egypt National Regulatory System” initiative is envisioned as a comprehensive approach that directs the strategic growth of Egypt’s AI capabilities and ensures that this growth is managed responsibly, transparently, and in alignment with best global practices. The system will not only streamline and clarify AI practices across various sectors but will also attract foreign investment, encourage startups, and promote technological research and development with clear guiding standards. The following are the main objectives for this initiative:

- Robust Comprehensive AI Regulatory System: Regulatory entities will not only ensure compliance but will also dynamically adapt regulations, reflecting a future of responsive and proactive governance.
- Develop and Implement a Comprehensive Framework for Ethical and Responsible AI: Well-crafted regulations for AI testing and deployment, ensuring the highest standards of safety and ethics, ensuring responsible and mindful AI development and application.
- AI Competitive Leadership: Strategic incorporation of the AI assurance framework across public and private sectors, enhancing its position in the Global Competitiveness Index and establishing the nation as an advanced AI practice hub.
- AI Assurance in Organizational Culture: All sectors will naturally embody the principles of AI assurance, with governmental and business practices deeply aligned with established policies and regulations.

G-I2. Global and Regional AI Dialogues

Global and regional AI dialogues will contribute to enhancing global AI governance, advancing economic development and growth of the MENA region, accelerating the inclusiveness of AI connecting AI network centers, and enhancing cooperation in the applicability of AI. Consequently, Egypt is set to emerge as a vibrant epicenter for AI, driving growth, efficiency, and innovation, and positioning itself as a leading AI hub in the MENA region.

The following are the main objectives for this initiative:

- Leading Regional Collaboration: Advocate relevant development plans, actively participate in AI-related forums and international projects in African and Arab countries fora and play a key role in promoting cooperation at the regional and international levels.
- Engage and Actively Contribute to Global AI Governance Efforts: Engagement in the international dialogue shaping the AI governance landscape to promote openness, inclusivity, creativity, and reflecting cultural and ethical characteristics of our region.
- Unified Arab AI Standards: Cooperation among Arabic nations will culminate in a unified set of AI standards, Arabic AI guidelines, and standards that resonate with regional cultural and ethical norms.

6.2 Technology Pillar

The Technology pillar responds to the strategic objective “Enhance Quality of Life and Sectoral Efficiency through AI applications.” To fulfill this strategic objective, three initiatives are identified, namely National Foundation Models Development, Abundant R&D resources, and AI Patent Granting System. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [3 Initiatives, 9 Objectives]

Strategic Objective
Enhance Quality of Life and Sectoral Efficiency through AI applications

Initiatives	Objectives
National Foundation Models Development	Developed national Foundation Model
	LLM powered basic industries
	New industries arise
	Improved efficiency of industries
Abundant R&D Resources	Dedicated R&D funding
	Dedicated Grants and Policies
	R&D promoting campaigns
AI Patent Granting System	Raised awareness of IP protection
	AI specific patent

Tech-I3. National Foundation Models Development

Egypt aims to develop a large national Arabic language model, creating a sophisticated and advanced AI system capable of processing and understanding vast amounts of language data. This model would be designed to enhance language processing, natural language understanding, and generation capabilities. The following are the main objectives for this initiative:

- Developed National Foundation Model: Enabling performing tasks such as language translation, sentiment analysis, and content generation with a high level of accuracy and efficiency, specifically in Arabic language
- LLM Powered Basic Industries: Basic industries across diverse sectors can experience significant improvements and advancements. Industries such as manufacturing, agriculture, and logistics can benefit from the integration of the LLM into their operations.
- New Industries Arise: AI-driven sectors such as autonomous vehicles, robotics, and smart technologies are witnessing significant growth and innovation. These industries capitalize on the capabilities of AI to develop groundbreaking products and services.
- Improved Efficiency of Industries: AI-powered systems can analyze vast amounts of data, identify patterns, and make accurate predictions, enabling industries to optimize processes, reduce waste, and make data-driven decisions.

Egypt Industries and Use Cases with AI Priority

The priority of Egypt’s industries and use cases selected for national LLM implementation is based on three main factors, namely:

1. Feasibility: High technology maturity with controllable risk
2. Desirability: Large market space and huge impact on society, with high market demand and sufficient economic growth
3. Viability: Use cases selected should reflect a reasonable ROI under the use of large models.

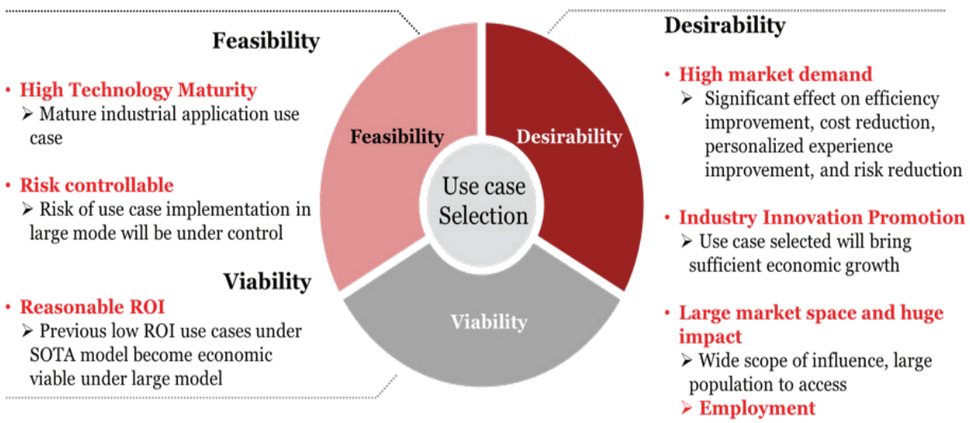


Fig 5: Egypt Industries and Use Cases with AI Priority

To identify possible or potential candidates for AI use cases, a method to analyze different industrial stages according to different AI capabilities was adopted. Potential impactful use cases implementation of the large model and AI-driven technology in Egyptian major industries are listed below.

Potential impactful use cases implementation of the large model and AI-driven technology in Egyptian major industries

Government

- ★ Combating **Misinformation and Disinformation**
- ★ Process public opinion, conduct **sentiment analysis**
- ★ **Economic and Monetary policy making** based on macro economy analysis
- ★ Tracking and Management of **National Resources** (e.g. Real estate registry)

Judiciary

- ★ **Virtual Legal Aid** guided by applicable laws and judicial precedence
- ★ **Classification of court cases** based on case analysis and understanding
- ★ **Transcription** of legal proceedings
- ★ **Litigation** and **Claim Assessment** based on case analysis, applicable laws and judicial precedence
- ★ **Automated Legal Research** and **Legal Drafting Assistance** for judges

Education

- ★ **Curriculum Content Generation**
- ★ **Personalized Virtual Tutor** with **Dynamic Content Generation** based on student learning style (e.g. languages and math)

BPO (Commercial/Emergency)

- ★ **Realtime assistance** to call center agents guided by organization knowledge base
- ★ **Multi-lingual** customer support **chatbot**
- ★ Customer service evaluation via **sentiment analysis** of agent-customer interaction
- ★ **Emergency response automation**

Agriculture

- Prediction of **pest & disease** outbreaks
- Virtual **Farmer Advisor** (Chatbot)
- ★ **Crop Optimization** (Grow what where)
- Recognition of pests and diseases
- ★ **Crop Mapping** and **Yield Prediction**
- ★ Smart **Water Management** for agriculture

Digital Transformation

- ★ **Accelerate Digital Transformation using Generative AI**

Healthcare

- ★ **Screening and Diagnostic** tools for prevailing noncommunicable diseases (DR, CKD, Glaucoma, Breast/Liver Cancer, ECC, …)
- ★ AI for **Precision Medicine** and **Personalized Cancer Treatment**
- ★ R&D platform for **drug repurpose** based on genomic/proteomic analysis
- ★ **Culture Sensitive Mental Health Support**
- ★ **Disease Predictive** models based on Electronic Health Records

Energy

- ★ **Predictive Maintenance** of power production and distribution networks
- ★ Management of **load distribution** of power networks

Culture & Tourism

- **Digital Heritage Optimization**
- ★ Personalized **trip planning** services
- ★ Automatic **multi-lingual translation** of books (Literature, Humanities, Islamic, …)
- ★ AI-powered adaptive **virtual tour guide**
- ★ **Digital interactive exhibit** (VR/XR/AR)

Key Sectors for quick start ★ Applied Innovation Center Projects

Tech-I4. Abundant R&D Resources

Egypt aims to provide abundant resources through the attraction and retention of academic and industry leaders capable of driving AI-focused R&D activities. This includes a dedicated fund to support research projects, grants, and policies to incentivize AI research, and the establishment of research institutions and centers of excellence in AI. By nurturing a vibrant R&D ecosystem, Egypt aims to foster breakthrough discoveries, technological advancements, and the development of cutting-edge AI solutions. The following are the main objectives for this initiative:

- Dedicated R&D Funding: Providing specific funding for AI-related research and development initiatives to support research projects, promote collaboration between academia and industry, and facilitate the development of AI technologies and applications that address national priorities and societal challenges.
- Dedicated Grants and Policies: Implementing dedicated grants and policies to support AI R&D. These grants can be awarded to researchers, startups, and organizations involved in AI-related projects, encouraging innovation and experimentation.
- R&D Promoting Campaigns: Launch promotional campaigns to raise awareness and promote the importance of research and development in the field of AI. These campaigns can involve public outreach programs, industry collaborations, and educational initiatives to engage stakeholders and encourage participation in R&D activities.

Tech-I5. AI Patent Granting System

A sophisticated patent granting system will ensure efficient and effective evaluation, examination, and granting of AI-specific patents. This system will foster innovation, incentivize AI research and development, and attract investment by providing legal protection and commercialization opportunities for AI inventions. The following are the main objectives for this initiative:

- Raised Awareness of IP Protection: Educate stakeholders, including researchers, entrepreneurs, and businesses, about the significance of IP protection in the AI ecosystem, highlighting the value of IP rights, the process of obtaining patents, and the benefits of IP protection for AI innovation and commercialization.
- AI-Specific Patent: In recognition of the unique characteristics and challenges associated with AI technologies, Egypt aims to develop AI-specific patent categories within its patent system. These AI-specific patents will address the distinctive aspects of AI inventions.

6.3 Data Pillar

The Data pillar responds to the strategic objective "Ensure Data Accessibility and Sharing." To fulfill this strategic objective, four initiatives are identified, namely Comprehensive Data Governance Frameworks and Standards, High-Quality Sectoral Localized Data Sets, Open Data and Data Exchange Platforms, and Ensure Data Privacy and Security. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [4 Initiatives, 9 Objectives]

Strategic Objective
Ensure Data Accessibility and sharing

Initiatives	Objectives
Comprehensive Data Governance Frameworks and Standards	Comprehensive Data Regulation System
	Optimized Personal data protection Law
High Quality Sectoral Arabic Data Sets	Detailed data strategy
	Well developed supportive policies
Open Data and Data Exchange Platform	Establish Open Data Platform
	Establish Data Exchange Platform
Ensure Data Privacy and Security	Establish Personal Data Protection Authority
	Enhancing Institutional Transparency
	Enhance Data Security Measures

D-I6. Comprehensive Data Governance Frameworks and Standards

Robust data governance frameworks and standards will be developed to govern the collection, storage, and use of data in AI applications. This will involve defining clear guidelines for data protection, privacy, and consent, as well as establishing mechanisms for data sharing and collaboration in compliance with legal and ethical considerations.

- Comprehensive Data Regulation System: Comprehensive frameworks and standards to ensure responsible and ethical use of data in AI applications. This may include regulations on data collection, storage, sharing, privacy protection, and transparency.
- Optimized Personal Data Protection Law: Optimize the existing personal data protection law according to global leading practices to enable effective protection of personal data privacy in Egypt's AI.

D-I7. High-Quality Sectoral Arabic Data Sets in Egypt

High-quality localized Arabic data set development is crucial to leverage the benefits of AI and is the basis for AI development. Well-developed supportive policies for data set development and deployment will gear the advances in the field of AI.

- Detailed Data Strategy: A detailed data strategy will be developed to guide the collection, management, and utilization of data in AI applications, and outline principles for data acquisition, data quality, data sharing, and data security.
- Well-developed Supportive Policies: Supportive policies to foster the development and deployment of data sets, therefore building the basis for AI development, like tax incentives, research grants, etc.

D-I8. Open Data and Data Exchange Platform

An open data and data exchange platform will ensure a centralized repository of publicly available data from various sources, as well as enable researchers, developers, and businesses to access and utilize open data for AI projects.

- Establish Open Data Platform: An open data platform will be established to promote the sharing and accessibility of non-sensitive data for research, innovation, and public benefit.
- Establish Data Exchange Platform: A data exchange platform will be developed to enable secure and controlled data sharing between organizations. This platform will establish protocols, standards, and mechanisms for data exchange while ensuring privacy, security, and data governance.

D-I9. Ensure Data Privacy and Security

Specialized agencies will be designated to set and oversee industrial data standards in alignment with best international practices. These agencies will ensure interoperability, data quality, and adherence to industry-specific requirements.

- Establish Personal Data Protection Authority: A dedicated Personal data protection authority is currently under establishment as a requirement of the Data Privacy Law. The authority's mandate is to oversee and enforce data protection regulations, and it will be responsible for monitoring compliance, investigating data breaches, and imposing penalties for non-compliance.
- Enhancing Institutional Transparency: The implementation of data governance frameworks and regulations will be carefully overseen to ensure effective enforcement and adherence. This may involve regular audits, inspections, and monitoring mechanisms to verify compliance and address any violations.
- Enhancing Data Security Measures: Stringent data security measures will be implemented to protect sensitive and private data. This may include encryption, access controls, data anonymization techniques, and regular security assessments to mitigate the risks of data breaches.

6.4 ICT and AI Infrastructure Pillar

The ICT and AI Infrastructure pillar responds to the strategic objective "Build a Robust Scalable AI Infrastructure." To fulfill this strategic objective, four initiatives are identified, namely A Cutting-edge Domestic Data Center, Intelligent Cloud and Computing Resources, Ubiquitous 5G and Fiber, and Ensure Data Center Sustainability. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [4 Initiatives, 11 Objectives]

Strategic Objective
Build a robust scalable AI infrastructure

Initiatives	Objectives
Cutting-edge Domestic Data Center	Established data center
	Avail GPU resources
Intelligent Cloud & Computing Resource	Ensure availability of Super computers
	Establish cloud services and apps
	Improved infrastructure for cloud
Ubiquitous 5G and Fiber	5G plans and test zones
	High speed internet throughout the country
	Domestic fiber industry
Ensure Data Center Sustainability	Green computing facilities
	Conserve energy in computing infrastructure
	AI in the energy sector

I.I10. Cutting-edge Domestic Data Center

Cutting-edge domestic data center aims to provide a secure, scalable, and reliable infrastructure for data storage and processing. This/these data center(s) will leverage advanced technologies and adhere to international standards for data center operations.

- Establish Data Center: A data center will be in place to support the storage, management, and processing of large-scale data, and the need to ensure high availability, data redundancy, and efficient data handling capabilities.
- Avail GPU Resources: Sufficient GPU resources will be made available to support AI and deep learning applications, as well as enabling high-performance computing for AI algorithms and models, facilitating faster and more accurate processing of data.

I-I11. Intelligent Cloud and Computing Resource

Intelligent cloud infrastructure and computing resources will be developed to support AI applications and services. This infrastructure will provide scalable and on-demand computing power, storage, and networking capabilities for AI workloads.

- Ensure availability of Supercomputers: More supercomputers will be made available to researchers and organizations working on AI projects, offering exceptional processing power and computational capabilities.
- Establish Cloud Services and Apps: Cloud services and applications tailored for AI will be created to provide convenient and flexible access to AI tools, platforms, and resources.
- Improved Infrastructure for Cloud: Infrastructure for cloud computing will be improved to ensure high-speed connectivity, data transfer, and reliable service delivery, to support the growing demand for cloud services.

I-I12. Ubiquitous 5G and Fiber

Comprehensive plans will ensure the widespread availability of 5G networks and fiber-optic connectivity throughout the country. This will enable high-speed and low-latency communication, supporting the seamless implementation of AI technologies

- 5G Plans and Test Zones: Specific plans and test zones will be established to deploy and evaluate 5G networks in selected areas. This will allow for the testing and optimization of AI applications that rely on the high bandwidth, low latency, and massive connectivity capabilities of 5G.
- High-speed Internet throughout the Country: Aims to provide high-speed internet access to all its citizens. Widespread access to high-speed internet is crucial for enabling digital inclusion and participation in the AI-driven economy.
- Domestic Fiber Industry: Aims to develop a domestic fiber industry to support its digital infrastructure needs. This domestic fiber industry will not only ensure the availability of high-quality fiber-optic connections but also contribute to job creation, economic growth, and technological self-reliance in Egypt.

I-I13. Ensure Data Center Sustainability

Egypt has shown insight and determination in constructing green AI infrastructure. The country is paving the way for the sustainable development of global AI by building green computing facilities and conserving energy in computing infrastructure, as well as applying AI in the energy sector.

- Green Computing Facilities: Green computing facilities optimize hardware design, implement effective energy management practices, and use renewable energy to achieve minimal power consumption and emissions while computing. To that end, Egypt encourages businesses to invest in innovative green computing technologies like high-performance processors, energy-saving storage devices, and improved cooling systems to reduce the energy consumption of AI systems.
- Conserve Energy in Computing Infrastructure: Another key method is to conserve energy in computing infrastructure. This involves refining the data center's layout and design to boost energy efficiency, as well as leveraging Egypt's solar resources to supply clean power to the data center. The Egyptian government is encouraging the development of solar power projects to meet the power requirements of data centers, reduce reliance on fossil fuels, and lower carbon emissions.
- AI in the Energy Sector: Egypt is also encouraging the use of AI in the energy sector, such as smart grid management, and is utilizing AI technology to drive the digital transformation of the country's energy business.

6.5 Ecosystem Pillar

The Ecosystem pillar responds to the strategic objective "Create a healthy AI ecosystem by supporting local startups and innovation efforts and strengthening the investment of venture capital institutions in Egypt." To fulfill this strategic objective, four initiatives are identified, namely Active and Secure Investment Environment, Industry-Academia-Research Platforms, Support for AI Start-ups, and Public Awareness of AI Development. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [4 Initiatives, 16 Objectives]

Strategic Objective: Create a healthy AI ecosystem by supporting local startups and innovation efforts, and strengthening the investment of venture capital institutions in Egypt

Initiatives	Objectives
Active and Secure Investment Environment	Increased number of domestic tech companies Emergence of AI unicorns Encouraging application of AI More investment in AI and deep tech
Industry-academia-research Platforms	Industry-academic collaboration platforms Increasing number of researchers Global AI conferences Global hub for breakthrough AI research
Support for AI Start-ups	Optimized incubation programs Professional analysis of startup potential Funding for AI startups Dedicated campaigns and activities
Public Awareness of AI Development	Public recognition of AI development Public recognition of benefits brought by AI Positive social media discussion Ensured safe environment

E-I14. Active and Secure Investment Environment

Create an active and secure investment environment for AI-related ventures by developing favorable policies and providing financial incentives to stimulate domestic and international investments in AI.

- Increased Number of Domestic Tech Companies: The growth and establishment of domestic technology companies, specifically in the AI sector, will be encouraged, creating a conducive ecosystem for the development and scaling of AI-driven businesses.
- Emergence of AI Unicorns: Efforts will be made to stimulate the emergence of AI "unicorns," enabling them to achieve rapid growth and become industry leaders.
- Encouraging Application of AI: Encourage the widespread application of AI across various sectors and industries, providing training and support for organizations to adopt AI technologies, and showcasing successful AI use cases to inspire others.
- More Investment in AI and Deep Tech: Increased investment, specifically in AI and deep tech fields, fostering a culture of innovation and entrepreneurship in the investment community.

E-I15. Industry-Academia-Research Platforms

Establish platforms to facilitate collaboration and knowledge exchange between industry, academia, and research institutions. These platforms will provide a space for researchers, industry experts, and policymakers to come together, share insights, and collaborate on AI-related projects and initiatives. Following the:

- Industry-Academic Collaboration Platforms: Specific platforms to promote collaboration between industry and academic institutions, involving establishing partnerships, and joint research programs.
- Increasing Number of Researchers: To increase the number of researchers specializing in AI by providing research grants and funding opportunities and creating a supportive research environment.
- Global AI Conferences: Strive to become a global hub for hosting AI conferences and events to attract leading experts, researchers, and industry professionals from around the world, providing a platform for knowledge dissemination and networking.
- Global Hub for Breakthrough AI Research: By fostering a vibrant research ecosystem, Egypt aims to become a global hub for breakthrough AI research, aiming to conduct transformative AI research in the country.

E-I16. Support for AI Start-ups

Creating a supportive environment for AI start-ups, offering resources, mentorship, and funding opportunities. This will involve optimizing incubation programs, providing professional analysis of start-up potential, and establishing dedicated campaigns and activities to nurture and accelerate the growth of AI start-ups.

- Optimized Incubation Programs: Incubation programs tailored specifically for AI start-ups to provide comprehensive support to help AI start-ups thrive and succeed, including funding, introduction to investors, connection with universities, etc.
- Professional Analysis of Start-up Potential: Leveraging the expertise of industry investors and mentors to assess the viability, scalability, and market potential of AI start-up ventures, providing valuable insights and guidance.
- Funding for AI Startups: Dedicated funding sources, such as VC funds, grants, and angel investors, will be made accessible to AI start-ups, creating a robust investment ecosystem that recognizes the potential of AI-driven ventures to fuel their growth.
- Dedicated Campaigns and Activities: Campaigns and activities to promote AI entrepreneurship, raise awareness about start-up opportunities, and foster a culture of innovation and risk-taking.

E-I17. Public Awareness of AI Development

To achieve "public awareness of AI development," efforts will be made to promote AI literacy among the general public through public education campaigns, workshops, and events to disseminate information about AI.

- Public Recognition of AI Development: Increase public recognition and appreciation for AI development by highlighting the positive impact of AI on society, showcasing successful AI applications, and fostering a dialogue between AI experts and the public.
- Public Recognition of Benefits Brought by AI: Educate the public about the benefits brought by AI technologies, emphasizing the ethical considerations and safeguards in place to ensure responsible AI use.
- Positive Social Media Discussion: Engagement on social media platforms will be encouraged to foster positive and informed discussions about AI. This will involve creating online communities, sharing AI-related news and updates, and addressing public questions and concerns.
- Ensure Safe Environment: Protect individuals and organizations from potential risks and misuse of AI technologies, and demonstrate this effort to the general public to ensure trust.

6.6 Talents Pillar

The Talents pillar responds to the strategic objective of "Strengthening the quantity and quality of local AI talents and experts." To fulfill this strategic objective, four initiatives are identified, namely Senior AI Expert Cultivation and Attraction, International Academic Alliances, Cross Discipline Course Development, and Comprehensive Qualification Certification System. The following table depicts the strategic objective with the corresponding initiatives and respective objectives. [4 Initiatives, 9 Objectives]

Strategic Objective
Strengthen the quantity and quality of local AI talents and experts

Initiatives	Objectives
Senior AI Experts Cultivation and Attraction	Well developed domestic talent Domestic talent retained in Egypt Sophisticated high level talent
International Academic Alliances	International collaboration programs Wide range of advanced opportunities
Cross Discipline Course Development	Well developed STEM courses Broad range of joint majors
Comprehensive Qualification Certification System	AI practitioner qualification certification system Talent management and succession planning

T-I18. Senior AI Experts Cultivation and Attraction

To achieve “Senior AI Experts Cultivation and Attraction,” efforts will be made to cultivate and attract senior AI experts to Egypt. This will involve providing educational and attractive incentives to encourage experienced AI professionals to work in the country.

- Well-Developed Domestic Talent: Cultivate domestic talent with local educational resources and training programs. Improve the basic knowledge of citizens of AI-based tools, including data analytics, machine learning, etc.
- Sophisticated High-Level Talent: Targeting experts in specialized AI fields, encouraging advanced R&D, and providing opportunities for collaboration with leading international researchers and institutions.
- Domestic Talent Retained in Egypt: Implement measures such as grants and benefits to ensure that the domestic talent cultivated in Egypt remains in the country. Retain and engage talented individuals in national initiatives

T-I19. International Academic Alliances

Partnerships and alliances will be formed with international academic institutions to foster collaboration in AI research and education. This will involve exchange programs, joint research projects, and the sharing of knowledge and resources to promote the development of AI expertise in Egypt.

- International Collaboration Programs: Collaboration programs with international organizations, governments, and industry players will be established to facilitate knowledge transfer, technology exchange, and joint initiatives in the field of AI.
- Wide Range of Advanced Opportunities: Various advanced opportunities, such as scholarships, grants, internships, and research fellowships, will be provided to individuals interested in AI. This will enable them to access advanced training, gain practical experience, and contribute to cutting-edge AI projects.

T-I20. Cross-Discipline Course Development

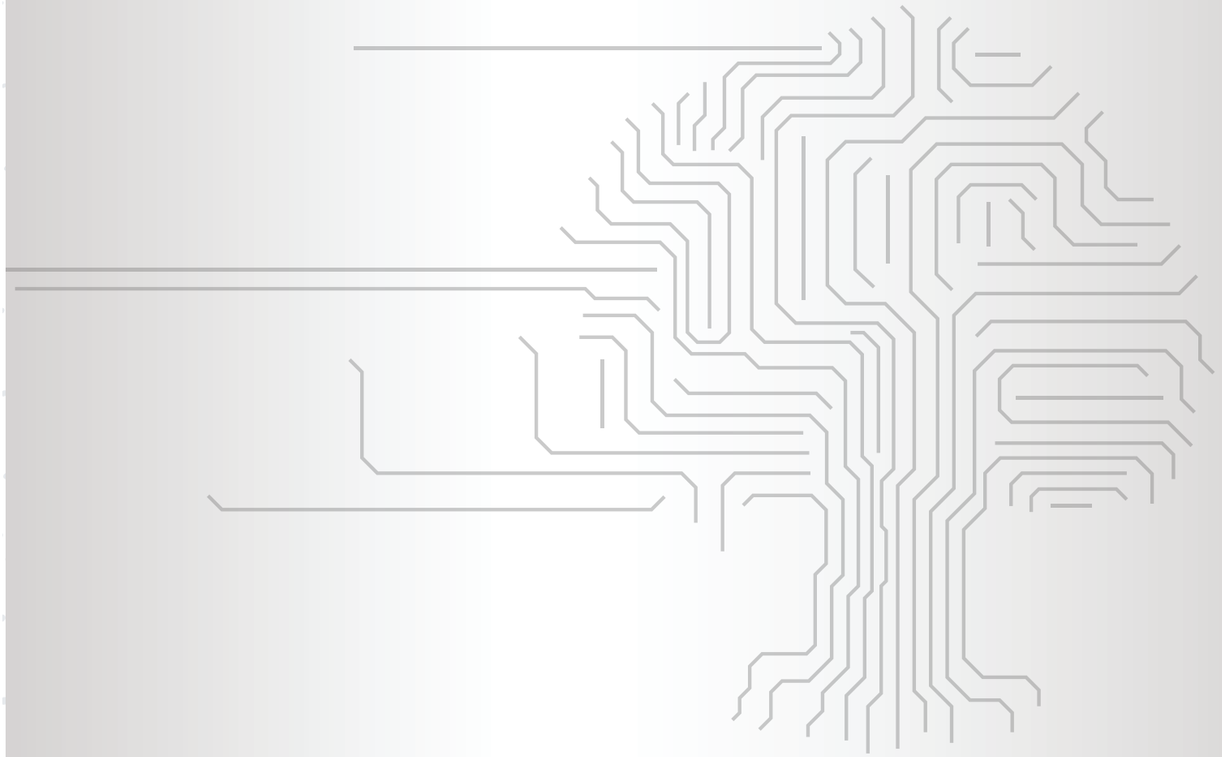
AI-focused education programs will be developed with advanced and up-to-date content. This will cover topics such as machine learning, Natural Language Processing (NLP), computer vision, and AI ethics, ensuring that students receive a comprehensive and relevant education in AI.

- Well-developed STEM Courses: Science, Technology, Engineering, and Mathematics (STEM) courses will be strengthened and expanded to provide a solid foundation for AI education. This will include curriculum enhancements, teacher training, and the introduction of AI-related topics in STEM courses.
- Broad Range of Joint Majors: Joint major programs that combine AI with other disciplines, such as AI and business, AI and healthcare, or AI and agriculture, will be offered. This interdisciplinary approach will prepare students with a diverse set of skills and expertise to address complex AI applications in different industries.

T-I21. Comprehensive Qualification and Certification System

A comprehensive qualification and certification system will be established to assess and recognize the skills and capabilities of individuals in AI-related domains. This will provide a standardized framework for evaluating qualifications, promoting, and motivating professional development, and ensuring quality in the AI workforce.

- Talent Management and Certification Programs: An AI practitioner qualification and certification system will be established in line with international standards and suitable for Egypt’s actual national conditions, clarifying the development path of AI practitioner-related skills.
- Talent Management and Succession Planning Program: Various advanced opportunities will be provided for individuals who have made outstanding contributions to AI, such as scholarships, grants, overseas internships, and research scholarships. This will enable them to receive advanced training, gain the latest practical experience, and participate more efficiently in cutting-edge AI projects.



7. Implementation Roadmap

7.1 Introduction

In the formulation of the National AI Strategy, Egypt has considered the national strategic objectives and matched them with global indices and resolutions. Moreover, Egypt firmly supports worldwide cooperation in terms of AI standards and applications, as well as international discussions on AI governance. The Organization for Economic Cooperation and Development (OECD) AI Principles encourage the creative, reliable, and human rights and human values-abiding use of AI. Besides, UNESCO's 193 Member States ratified the first worldwide normative document on AI ethics on November 23, 2021. Furthermore, Egypt has developed the implementation roadmap for its National AI Strategy, considering the benefits of AI locally and globally within the framework of international collaboration.

One important factor that is so crucial in the implementation of the strategy is "Strategic AI Funding." AI funding is crafted not only to provide the financial backbone for AI advancements in Egypt but also to align these advancements with the nation's broader strategic objectives. By prioritizing focused, sustained, and strategically aligned investments, Egypt is poised to cultivate a dynamic and thriving AI ecosystem, driving growth, innovation, and regional technological leadership. The following funding instruments are imperative for the strategy's implementation:

- Enduring AI Investment Ecosystem: A robust and enduring AI investment ecosystem, characterized by ambitious, multi-year funding targets.
- Strategic Sectoral Investment: AI investment focuses strategically on critical domains like developmental and industrial AI applications and core AI infrastructure.
- AI Funding as A National Imperative: Unwavering dedication to advancing in the AI arena will be a catalyst for domestic innovation.
- Investment for Breakthroughs: The future state will also emphasize the importance of sustained investment, especially in AI research.

7.2 Key Initiatives

The strategy has identified 21 initiatives as outlined in this framework under the six pillars.

Summary of the National Initiatives

Governance	Technology	Data
Initiative 1 Egypt National AI Regulatory System	**Initiative 3** National Foundation Model development	**Initiative 6** Comprehensive Data Governance Frameworks and Standards
Initiative 2 Global and Regional AI dialogues	**Initiative 4** Abundant R&D resources	**Initiative 7** High Quality Sectoral Arabic Data sets
	Initiative 5 AI patent granting system	**Initiative 8** Open Data and Data Exchange Platform
		Initiative 9 Ensure Data Privacy and Security

Infrastructure	Ecosystem	Talent
Initiative 10 Cutting Edge Domestic Data Centers	**Initiative 14** Active and secure investment environment	**Initiative 18** Senior AI Expert's Cultivation and Attraction
Initiative 11 Intelligent Cloud and Computing Resources	**Initiative 15** Industry-academia-research Platforms	**Initiative 19** International Academic Alliances
Initiative 12 Ubiquitous 4G & 5Gb and Fiber	**Initiative 16** Support for AI startups in Egypt	**Initiative 20** Cross discipline course development
Initiative 13 Ensure Data Center Sustainability	**Initiative 17** Public Awareness of AI Development	**Initiative 21** Comprehensive Qualification Certification System

7.3 Implementation Plan

7.3.1 Pillar One: Governance

Artificial Intelligence technology is developing at a rapid pace, and its widespread application in many spheres of society has surely given people unprecedented ease and efficiency. That raises serious questions regarding AI regulation, safety, and ethics.

Thus, in order to guarantee the healthy growth of AI and benefit Egyptian civilization, it is now widely agreed upon that a clear regulatory body, a complete regulatory structure, and an ethical framework should be established.

7.3.1.1 Initiative 1: “Egypt National AI Regulatory System”

To maintain the safe and responsible growth of AI, it is imperative to establish a thorough regulatory structure, construct a thorough ethical framework, and create a distinct regulatory body. This would not only aid in averting any dangers but also encourage the equitable, open, and sustainable advancement of AI technology, enabling it to genuinely serve as a tremendous instrument for the advancement of humanity. The exchange of experiences, collaboration, and communication among nations will be essential to this process. The following are the main actions to be taken under this initiative:

G-I1-A1 Center for Responsible AI

- The Center for Responsible AI focuses on ensuring that the development and deployment of AI technologies are aligned with ethical standards, fairness, transparency, and accountability. Such agency would need to have sufficient expertise to understand and assess the complexities of AI and enhance the human capacity in Egypt. Moreover, the center should engage in international cooperation by monitoring global developments and best practices in responsible AI and sharing knowledge with relevant international organizations and similar entities worldwide.

G-I1-A2 Egyptian Charter for Responsible AI

- We need to create a complete ethical framework. AI is both a technical and ethical challenge. It raises several ethical concerns, including privacy protection, fairness, transparency, and responsibility attribution. Egypt’s Charter for Responsible AI is an excellent example, emphasizing AI’s obligation to respect human rights, safeguard privacy, and promote social justice. Such ethical framework can aid in the design, development, and implementation of AI, ensuring that it always complies with human values and social standards.

G-I1-A3 Egypt AI Law

- A thorough regulatory framework is necessary. AI, like any other technology field, requires adequate legislation and regulatory structures in order to prevent abuse and wrongdoing. For example, the AI law has established clear legal limitations for the usage and development of AI, guaranteeing that technological advancements do not threaten the public interest. The regulatory structure must include not only technological requirements and data protection but also oversight of AI decision-making processes to minimize algorithmic prejudice and bias.

Initiative 1
Egypt National AI Regulatory System

Code	Action Description	Objective	Action Details	Deliverables
G-I1-A1	Establishment of a center for responsible AI	G-O1 Robust comprehensive AI regulatory system G-O2 Develop and implement a comprehensive framework for ethical and responsible AI G-O3 AI competitive leadership G-O4 AI assurance in organizational culture	1. Develop a framework that includes guidelines, toolkits, methods, and best practices to enable the adoption of responsible AI by the Egyptian industry. 2. Develop guidelines and standards for classifying AI system risks, identifying, and assessing AI capabilities of AI actors, and understanding and managing the interconnections between these actors. 3. Develop training programs on responsible AI for government officials, industry professionals, and the public, and support initiatives in education and scientific research in the field of AI. 4.Build partnerships with stakeholders from industry, academia, and civil society, and facilitate dialogue and cooperation on issues related to responsible AI.	■ Center for responsible AI
G-I1-A2	Issue a detailed guideline for Egypt AI charter on ethics and responsible AI		According to the Egyptian Charter for Responsible AI, Egypt is committed to comprehensive contact with diverse stakeholders, listening to recommendations from governments, industry, academia, and research institutes, and thoroughly discussing them to develop a set of guiding rules.	■ Detailed ethics guidelines
G-I1-A3	Issue of AI law		1. Egypt’s draft legislation will prioritize maximizing the economic benefits of AI while protecting all citizens against high-risk or prohibited AI. 2. Establish the regulatory structure to support the implementation of the regulatory framework	■ AI Law ■ Bylaws issued ■ Regulatory body in place

7.3.1.2 Initiative 2: “Global and Regional AI Dialogues”

Egypt, as a key Middle Eastern country, is actively participating in global and regional AI governance discussions and collaboration to secure the ethical use of AI and set the groundwork for future progress.

Egypt wants to promote the healthy growth of AI by actively participating in global and regional AI governance discussions, as well as exploiting its particular strengths to drive innovation and adoption of AI applications in the MENA region. This set of projects will not only help Egypt meet the Sustainable Development Goals but will also leave a lasting impression on the global AI scene and position it as a regional science and technology development leader. The following are the main actions to be taken under this initiative:

G-I2-A1 Promote Collaboration and Engagement on the Arab level

- To boost AI’s long-term development, the Egyptian government is expanding investment, fostering innovation, and establishing a conducive environment for the AI industry through policy and regulatory changes. This will not only boost Egypt’s scientific advancement in the field of AI, but it will also attract international investment and strengthen Egypt’s position as a regional science and technology center.
- Furthermore, Egypt has a distinct edge in the use of AI in different Arabic dialects in addition to Egyptian colloquial dialect. Egypt has the opportunity to close the market gap and develop AI solutions for specialized industries such as public services, education, and healthcare, making services easier and more efficient for Arabic speakers.

G-I2-A2 Promote Collaboration and Engagement on the African level

- At the broader level, Egypt sees the African region’s immense potential in AI. Egypt, as the region’s most populated country, provides an abundance of data resources, which are critical for training and developing AI systems. Using this data, Egypt can not only develop its own AI skills but also provide possibilities for other countries in the area to learn and collaborate.

G-I2-A3 Actively Engage in Global Dialogues with Different Stakeholders

- Egypt actively engages in international organizations’ dialogues such as the UN, BRICS, G20, ITU, WHO, UNESCO, and the Organisation for Economic Cooperation and Development, arguing for worldwide rules and laws to promote the safe, fair, and trustworthy use of AI. Egypt sees the vital importance of being an active member in these dialogues to ensure that the Egyptian, Arab, and African cultures are respected and that governance regulations adopted by state countries will take into consideration the voices of our region. For example, Egypt’s active participation in the UNGA AI Future Summit (September 2024) aims to build consensus on global AI governance and establish a clear ethical and legal framework for the development of global AI.

Initiative 2
Global and Regional AI Dialogues

Code	Action Description	Objective	Action Details	Deliverables
G-I2-A1	Promote collaboration and engagement on the Arab level	G-O5 Leading regional collaboration G-O6 Engage and actively contribute to global AI governance efforts G-O7 Unified Arab AI standards	1. Develop channels of cooperation on the bilateral and regional level for the governments and the private sector. 2. Identify opportunities to close the market gap and develop AI solutions for specialized industries such as public services, education, and healthcare, making services easier and more efficient for Arabic speakers.	■ Arab AI Strategy with identified regional projects and policies.
G-I2-A2	Promote collaboration and engagement on the African level		1. Develop channels of cooperation on the bilateral and regional level for the governments and the private sector 2. Identify potential opportunities to develop AI solutions for specialized industries aligned with the Africa AI Strategy.	■ African Strategy with identified regional projects and policies.
G-I2-A3	Actively engage in global dialogues with different stakeholders		1. Egypt will actively engage in international dialogues in different fora, including UNGA, G20, BRICS, AU, UNESCO, ITU, and OECD. 2. Developing a common vision for the safe use of AI within the Arab and African regions to reflect the regions’ challenges, and cultures and maximize their opportunities from the use of AI.	■ Set of contributions and activities on the global level, specifically with UNGA, BRICS, G20, UNESCO, and OECD.

7.3.2 Pillar 2: Technology Pillar

7.3.2.1 Initiative 3: “National Foundation Models Development”

The Egyptian government and industry are actively promoting the development of national foundation models to gain technical advantages in the field of AI, as well as to encourage the commercial application of related industries and aid in the transformation and upgrading of the national economy. Egypt will accomplish exceptional results in the field of AI, reviving the country’s economic development. The following are the main actions to be taken under this initiative:

Tech-I3-A1 Lay Groundwork for Indigenous Large Language Model Development

- To ensure the success of the large-scale model project, the Egyptian government and industry will be fully prepared, including developing a solid data set, providing adequate financial support, establishing an effective organizational structure, encouraging cutting-edge research, and actively guiding commercial applications. These measures will foster the creation of local large language models in Egypt, accelerate the accumulation of AI, and pave the road for commercialization.

Tech-I3-A2 Talent Recruitment and Basic Training

- Egypt also focuses on talent development and recruiting. A wide-scale talent recruitment drive needs to be conducted and provide specialized training to guarantee that the team has the necessary expertise and abilities to deal with the problems of developing huge language models.

Tech-I3-A3 National LLM Use Cases Development

- The Egyptian government has identified a number of top-priority industries that can leverage LLMs to help boost the capabilities of its key sectors. Moreover, potential use cases are proposed as shown in section 6.2 for priority sectors. The idea now is how to ensure that based on the right LLM, fine-tuning of the model will be conveyed with the local data sets applied to the use case to be implemented. As always, three folds are required for the successful implementation of the right compute infrastructure, the local data set for the use cases, and finally the fine-tuning of the LLM selected. The following are the steps to be taken for a strong implementation of industry-specific use cases.
  - Infrastructure investment to build and maintain the necessary infrastructure for LLM development.
  - Data sets preparation and readiness for priority sectors.
  - Fine-tuning Large Language Models for Arabic language use for specific sectors based on the priorities set by the government and the readiness of the datasets of the sector.
  - Produce demonstration use cases for Large Language Models. This effort seeks to rapidly strengthen Egypt’s R&D capabilities in the field of large model technology.

Initiative 3
National Foundation Models Development

Code	Action Description	Objective	Action Details	Deliverables
Tech-I3-A1	Lay groundwork for Indigenous model development	Tech-O8 Developed national foundation model Tech-O9 LLM-powered basic industries Tech-O10 New industries arise Tech-O11 Improved efficiency of industries	1. Create a department to start planning the indigenous AI large model development in the Applied Innovation Center. 2. Develop a detailed plan for the development of the indigenous LLM development/ tuning. 3. Call for companies to support the implementation of use cases. 4. Secure a fund for the future sustainable development of the LLM use cases development.	■ LLM department under AIC established. ■ A detailed Indigenous model development roadmap with timelines, resource needs, and potential challenges. ■ Secured funds for LLM development and use cases. implementation.
Tech-I3-A2	Talent recruitment and basic training		1. Carry out talent recruitment for AI specialists and experts. 2. Screen industry-level large models for specific use cases locally and globally and conduct training based on specific models for professionals of AIC.	■ Recruitment and training summary report.
Tech-I3-A3	National LLM development		1. Infrastructure investment for LLM development. 2. Identify the priority sectors and the priority use cases. 3. Build the needed data sets for the identified use cases. 4. Fine-tuning Large Language Models for Arabic language use for specific sectors.	■ Compute infrastructure installed. ■ List of use cases. ■ Data sets collection for priority use cases. ■ Demonstration use cases for Large Language Models.

7.3.2.2 Initiative 4: “Abundant R&D Resources”

Egypt is implementing a number of initiatives to boost the R&D capacity of its local AI innovation laboratories. The goal is to build a vibrant, collaborative, and open AI innovation ecosystem that will increase Egypt’s international competitiveness in the AI field while also bringing innovation to education, healthcare, transportation, and other sectors. Provide robust scientific and technological support for Egypt’s modernization.

The following are the main actions to be taken under this initiative:

Tech-I4-A1 Establish Strategic Partnerships

- Egypt is actively developing strategic alliances with major technology businesses, research organizations, and higher education institutions, both domestically and internationally. These partners will supply local labs with innovative technologies, expertise, and extensive practical experience to help expedite the development of AI technology. Sharing resources and information can considerably improve Egypt’s AI innovation environment.

Tech-I4-A2 Develop Shared Resources Framework

- Egypt is establishing a shared resource framework to enable the exchange and use of scientific research findings. This architecture will compile research findings from diverse laboratories into a knowledge repository that all participants can consult and use. This would not only help to eliminate research duplication but will also promote the collision of innovative ideas, resulting in more original results.

Tech-I4-A3 Upgrade R&D Facilities

- Egypt is investing in improving the R&D infrastructure of local AI laboratories, such as introducing new computing equipment, software tools, and experimental equipment to facilitate more complicated and in-depth studies. The improvement of these facilities will provide researchers with a more robust technical platform to support the advancement of AI.

Tech-I4-A4 Establish AI Research Grants

- To attract more talent to devote themselves to AI research, the Egyptian government intends to establish an AI research fund. The fund will give financial assistance for innovative research initiatives, as well as scholarships and research grants for young scholars interested in AI research to prepare them to become AI experts.

Initiative 4
Abundant R&D Resources

Code	Action Description	Objective	Action Details	Deliverables
Tech-I4-A1	Establish strategic partnerships	Tech-O12 Dedicated R&D funding Tech-O13 Dedicated grants and policies Tech-O14 R&D promoting campaigns	1. Identify potential global AI partners. 2. Organize meetings with universities and industry leaders. 3. Draft partnership agreements.	Signed partnership agreements, and joint project outlines.
Tech-I4-A2	Develop a shared resources framework		1. Audit existing resources. 2. Create a digital platform for sharing. 3. Develop legal frameworks for sharing.	Shared resource catalog, operational platform.
Tech-I4-A3	Upgrade R&D facilities		1. Assess technology needs. 2. Secure funding for new equipment. 3. Train staff on new technologies.	Modernized research facilities, and trained workforce.
Tech-I4-A4	Establish AI research grants		1. Develop grant criteria. 2. Announce grant program. 3. Review and award grants.	Funded research projects, and progress reports.

7.3.2.3 Initiative 5: “AI Patent Granting System”

The Egyptian government is actively working to introduce a patent licensing system specifically for AI to promote innovation and safeguard intellectual property rights in this field. Egypt’s knowledge of intellectual property protection and its profound comprehension of the possibilities for future advancement of AI technology have increased significantly as a result of this.

The system’s goal is to give AI innovators a simple, clear way to apply for patents and obtain licenses so that their creations are legally protected. This will not only spur enterprises and researchers to innovate, but it will also draw in both foreign and domestic investment and increase Egypt’s competitiveness in AI technology.

The following are the main actions to be taken under this initiative:

Tech-I5-A1 Training and Educational Events to Increase Public Understanding

- The Egyptian government has implemented a number of initiatives to strengthen intellectual property protection nationwide within the last several years, for instance, by holding training and educational events to increase public understanding of the value of intellectual property rights. Egypt’s implementation of an AI patent licensing scheme will foster a more welcoming and safeguarded innovation climate for the AI sector.

Tech-I5-A2 AI Patent Granting System

- It is anticipated that the system will comprise an all-inclusive application procedure that addresses the filing, review, approval, and ensuing administration and implementation of patents. To ensure openness in all procedures and increase efficiency, cutting-edge technology will be employed. Additionally, the system will offer expert consulting services to applicants to guarantee that their innovations are most effectively safeguarded and to assist them in understanding and adhering to pertinent rules.

Initiative 5
AI Patent Granting System

Code	Action Description	Objective	Action Details	Deliverables
Tech-I5-A1	Training and educational events to increase public understanding	Tech-O15 Raised awareness of IP protection Tech-O16 AI-specific patent	Hold training and educational events to increase public understanding of the value of intellectual property rights	Training and educational events.
Tech-I5-A2	AI patent granting system		Develop an AI patent system to comprise an all-inclusive application procedure that addresses the filing, review, approval, and ensuing administration and implementation of AI patents.	AI patent granting system.

7.3.3 Pillar 3: Data

7.3.3.1 Initiative 6: “Comprehensive Data Governance Frameworks and Standards”

To improve data lifecycle management and quality management in Egypt, we require not only a comprehensive data governance framework but also a scientific data quality management plan and the development of data governance expertise. The collaborative efforts of governments, businesses, and all sectors of society will help to develop a data-driven future. The following are the main actions to be taken under this initiative:

D-I6-A1 Data Governance Framework: Establish A Comprehensive Data Governance Framework That Outlines Policies, Standards, and Procedures for Data Management Throughout Its Lifecycle

- First, we must develop a rigorous and structured data governance architecture. This framework should define data management policies, standards, and processes that encompass the full data lifecycle, from data collection at the source to data processing and storage in the middle, and finally data application and disposal. The framework should be developed to assure data correctness, integrity, consistency, and security, while also protecting data privacy and compliance.

D-I6-A2 Data Quality Management Program

- Second, it is critical to create a scientific data quality management strategy. This includes defining data quality measurements, doing regular data quality audits, and developing systems for reporting and addressing data quality issues. Continuous data quality monitoring allows us to find and repair mistakes in the data in a timely manner, ensuring its dependability and usability.

D-I6-A3 Training and Capacity Building

- Training and capacity building are also critical for strengthening data governance. We must provide data governance and quality management training to managers and data processing professionals at all levels to increase data literacy and enable them to understand and apply the data governance framework as well as carry out the data quality management strategy. This is in addition to teaching data scientists and analysts to extract value from data and make data-driven decisions.

D-I6-A4 Data Integration and Interoperability

- Data integration and interoperability are critical tools for leveraging the value of data. To allow for data sharing and exchange between multiple systems, we must build unified data standards and specifications. A data integration platform allows us to combine data from various sources to create a single perspective that provides decision-makers with comprehensive and in-depth insights.

Initiative 6
Comprehensive Data Governance Frameworks and Standards

Code	Action Description	Objective	Action Details	Deliverables
D-I6-A1	Data governance framework	D-O17 Comprehensive data regulation system D-O18 Optimized personal Data Protection law	Establish a comprehensive data governance framework that outlines policies, standards, and procedures for data management throughout its lifecycle.	A well-defined national data governance document and an informed stakeholder community.
D-I6-A2	Data quality management program		1. Collaborate with data suppliers for consistency. 2. Establish key consistency indicators and KPIs. 3. Set up mechanisms for rapid response to data inconsistencies.	Enhanced data quality and a robust governance framework.
D-I6-A3	Training and capacity building		Launch pilot projects to train official data managers in technology usage and data quality control.	Training system and program.
D-I6-A4	Data integration and interoperability		1. Develop and deploy a centralized data-sharing platform. 2. Encourage public and private sectors to contribute data to the platform. 3. Conduct public workshops for feedback and platform improvements.	An operational data-sharing platform with active user engagement.

7.3.3.2 Initiative 7: “High-Quality Sectoral Arabic Data Sets”

In Egypt, where Arabic is the primary language, producing high-quality Arabic datasets is critical for improving the performance of AI and Machine Learning (ML) applications. The creation of high-quality national Arabic databases is a methodical endeavor that necessitates the collaboration of government, academia, industry, and the public. This will not only improve Egypt’s position in the global digital race but will also result in significant changes in all aspects of Egyptian society.

The following are the main actions to be taken under this initiative:

D-I7-A1 Identify, Select, and Develop Datasets Relevant to Priority Sectors and Use Cases with Regular Updates and Maintenance

- First, we must identify priority industries and key use cases. For example, in the medical industry, the creation of Arabic datasets comprising professional terminology such as disease diagnosis and medication research can hasten the development of medical AI while also improving the efficiency and quality of medical services. In the sphere of education, developing a dataset of Arabic educational resources spanning multiple disciplines would help to promote personalized learning and online education.
- During the dataset development process, data accuracy and completeness are crucial. This comprises collecting, cleaning, labeling, and validating raw data to verify its dependability and usefulness. Similarly, datasets must be updated and maintained to reflect changing circumstances and new industry requirements.

D-I7-A2 Apply Open Licenses by Determining the Intellectual Property Rights Associated with the Data and Apply Appropriate Open Licenses

- Intellectual property management and licensing methods are other significant factors to consider. To ensure that the data is used legitimately, the Egyptian government and relevant entities must disclose its source and ownership. At the same time, using proper open licenses, such as the Creative Commons or GNU General Public Licenses, can help enable extensive data sharing and reuse while protecting data suppliers’ rights.
- Furthermore, data privacy and security concerns cannot be overlooked. To preserve personal privacy and avoid data leakage, rigorously adhere to applicable laws and regulations when collecting and processing data. This necessitates a complete data protection method, which includes data anonymization, encryption, and secure data storage and transport.

Initiative 7
High-Quality Sectoral Arabic Data Sets

Code	Action Description	Objective	Action Details	Deliverables
D-I7-A1	Identify, select, and develop datasets relevant to priority sectors and use cases with regular updates and maintenance	D-O19 Detailed data strategy D-o20 Well-developed supportive policies	1. Identify priority industries and key use cases. 2. Collecting, cleaning, labeling, and validating raw data to verify its dependability and usefulness.	Data sets
D-I7-A2	Apply open licenses by determining the intellectual property rights associated with the data and apply appropriate open licenses		1. Identify, and promote the use of open licenses, such as the Creative Commons or GNU General Public Licenses. 2. Raise awareness of applicable laws, regulations, and licensing methods. 3. Set up the monitoring and enforcement processes to preserve personal privacy and avoid data leakage.	Intellectual property management and licensing methods

7.3.3.3 Initiative 8: "Open Data and Data Exchange Platform"

Egypt's open data program is not just a technological innovation, but also a revolution of the governance model, which views data as public wealth, encourages social vitality and supports the country's development through transparency and collaboration. To maximize the value of data and portray a prosperous, informed image of Egypt's future, the government, business, and the general public must work together on a long-term, systemic scale. The following are the main actions to be taken under this initiative:

D-I8-A1 Developing Government Policies, Guidelines, and Regulations

- Egypt will adopt comprehensive policies and procedures for data classification, collection, processing, storage, and use. These regulations are intended to maintain data security while also fostering transparency and public access to data, allowing citizens to better understand government choices and engage in public affairs.

D-I8-A2 Creating Open Data Portals

- Egypt will develop an open data portal that will serve as a single point of entry for national data, allowing the general public, academic institutions, enterprises, and non-governmental organizations (NGOs) to easily access and utilize open government data. The portal will include extensive datasets spanning a wide range of topics, including the economy, education, health, and the environment, to encourage widespread data application and innovation.

D-I8-A3 Develop Incentives Framework for Data Sharing

- The incentive mechanism for data sharing is an important aspect of the Open Data Initiative. The Egyptian government will encourage government departments, research institutions, and the private sector to share data through a variety of measures, including reward mechanisms and data competitions while protecting data owners' rights and interests and establishing a virtuous cycle of data sharing.

D-I8-A4 Community Engagement and Education

- Community engagement and education are also crucial to open data initiatives. The government will improve people's data literacy through public workshops, training courses, and online educational tools, allowing them to successfully use open data to solve real problems. Simultaneously, civil society and non-governmental organizations are encouraged to participate in data collecting, analysis, and application, promoting wide societal participation and diverse data interpretation.

D-I8-A5 Ensuring Data Quality and Standards (FAIR Principles)

- Data quality and standards are critical for assuring the usefulness of open data. Egypt shall follow the principle of justice, ensuring that data is accurate, full, and timely, and adopt unified data standards to enhance data interoperability and comparability. The government will work with international organizations and professional institutions to implement sophisticated data management technologies and strengthen data governance capabilities.

D-I8-A6 Encourage Public-Private Partnerships

- Finally, recognizing the value of public-private partnerships, Egypt will encourage the government to collaborate with the private sector, academia, non-governmental organizations (NGOs), and others to harness the power of data and promote data-driven innovation projects such as smart cities, precision medicine, and environmental monitoring to ensure long-term economic and social progress.

Initiative 8
Open Data and Data Exchange Platform

Code	Action Description	Objective	Action Details	Deliverables
D-I8-A1	Developing government policies, guidelines, and regulations	D-O21 Establish an open data platform D-O22 Establish data exchange platform	Set and adopt policies and procedures for data collection, processing, storage, and use.	Policies, guidelines, and regulations
D-I8-A2	Creating open data portals		Build an open data portal to include extensive datasets spanning a wide range of topics.	An open data portal.
D-I8-A3	Develop incentives framework for data sharing		Develop a variety of measures, including reward mechanisms and data competitions	Incentive mechanism.
D-I8-A4	Community engagement and education		Improve public data literacy through public workshops, training courses, and online educational tools.	Community, public workshops, training courses, and online educational tools.
D-I8-A5	Ensuring data quality and standards (fair principles)		1. Adopt unified data standards to enhance data interoperability and comparability 2. Work with international organizations and professional institutions on data classification and standards.	Data quality and standards.
D-I8-A6	Encourage public-private partnership		Collaborate with the private sector, academia, non-governmental organizations (NGOs), and others to promote data-driven innovative projects.	■ PPP ■ Projects

7.3.3.4 Initiative 9: “Ensure Data Privacy and Security”

To ensure that domestic users’ privacy and data security are properly protected while enjoying the convenience of digital and AI services, the Egyptian government has implemented a number of measures to create a comprehensive data security framework. By improving data security, the Egyptian government not only increases customer trust in digital services but also creates a stable development environment for businesses while adhering to legislation. The following are the main actions to be taken under this initiative:

D-I9-A1 Establish Data Security Framework

- The Egyptian government has built a comprehensive data security framework to ensure that all activities involving the processing of personal data adhere to stringent security standards. This framework will cover the full process of data collection, storage, usage, and sharing while maintaining data confidentiality, integrity, and availability. It will also outline reactions to incidents such as data breaches to mitigate potential hazards.

D-I9-A2 Develop Corporation Disclosure Protocols

- The government is advocating for a corporate data disclosure agreement, which would oblige all companies that provide digital and AI services to properly tell customers about how their data is processed, for what objectives, and about potential data sharing. These agreements will require corporations to be honest about their data use and to respect users’ rights to know and choose, increasing user trust in data security.

D-I9-A3 Create a Unified Feedback Platform

- The Egyptian government intends to establish a uniform feedback portal to assist users in reporting data security vulnerabilities and seeking solutions. The platform will act as an intermediary between users, service providers, and authorities. Users will be able to report data breaches, misuses, and other security issues while also receiving guidance and help.

Initiative 9
Ensure Data Privacy and Security

Code	Action Description	Objective	Action Details	Deliverables
D-I9-A1	Establish a data security framework	D-O23 Establish data protection authority D-O24 Enhancing Institutional Transparency D-O25 Enhance Data security measures	1. Formulate privacy guidelines. 2. Develop security protocols for AI applications and Data processing.	Comprehensive AI ethics and security framework.
D-I9-A2	Develop corporation disclosure protocols		1. Draft guidelines for AI ethics reporting by companies. 2. Mandate regular disclosure of data analysis and distribution reports. 3. Implement policies for user access to personal data.	Enhanced corporate transparency.
D-I9-A3	Create a unified feedback platform		1. Develop the feedback platform infrastructure. 2. Promote platform use among stakeholders. 3. Implement a system for addressing and integrating feedback.	A cohesive system for stakeholder engagement.

7.3.4 Pillar 4: ICT and AI Infrastructure

7.3.4.1 Initiative 10: “Cutting-edge Domestic Data Center”

Egypt intends to construct cutting-edge data centers to bolster its national technology infrastructure, promote the advancement of AI, and increase its competitiveness internationally. The following are the main actions to be taken under this initiative:

I-I10-A1 Computing Power Needs Assessment

- To address Egypt’s expanding digital needs, this decision intends to construct an on-site intelligent cloud data center that will offer reliable and secure cloud computing services. The data center will guarantee national data security and lessen cross-border data transmission. Additionally, it will give Egyptian businesses and academic research institutes access to quicker and more reliable computing resources, particularly for sophisticated computer jobs requiring a lot of graphics processing units (GPUs), such as machine learning and deep learning.

I-I10-A2 National Data Center

- The Egyptian government wants to accomplish these goals by enticing more science and technology-related businesses and creative individuals, fostering the growth of the country’s science and technology ecosystem, and encouraging the varied development of the national economy. The building of the national data center will also help Egypt’s development and use of AI in fields including traffic control, urban planning, agricultural optimization, and medical diagnosis.

I-I10-A3 Hyperscaler Partnership Program

- The Egyptian local data center will function as a training and educational facility. Young Egyptians will have the opportunity to learn about the newest technology, develop local AI talent, and build reserves for the country’s future digital society. Through the hyperscaler partnership program, Egypt hopes to advance in the global digital race by changing from a data consumer to a producer and developer of data.

I-I10-A4 Hardware Procurement Strategy

- Egypt’s building of the most advanced data center is a commendable reaction to the worldwide digital trend as well as a solid application of the country’s science and technology plan. This move will create a strong basis for Egypt’s long-term sustainable development and have a significant impact on the nation’s economy, educational system, and scientific and technical innovation.

Initiative 10
Cutting-Edge Domestic Data Center

Code	Action Description	Objective	Action Details	Deliverables
I-I10-A1	Computing power needs assessment	I-O26 Establish data center I-O27 GPU resources available	1. Conduct large industry-level and sectoral- level surveys for compute infrastructure use. 2. Analyze data for computing gaps. 3. Develop a 5-year needs report.	Detailed assessment report.
I-I10-A2	National data center		1. Plan and design for local data centers. 2. Identify implementation instruments.	Implementation plan
I-I10-A3	Hyperscaler partnership program		1. Negotiate with hyperscalers. 2. Propose partnership models. 3. Finalize agreements and start projects.	Partnership agreements, and construction projects.
I-I10-A4	Hardware procurement strategy		1. Assess yearly hardware needs. 2. Negotiate with 2+ manufacturers. 3. Sign long-term contracts.	Procurement plan, and vendor contracts

7.3.4.2 Initiative 11: “Intelligent Cloud and Computing Resource”

In Egypt, the government and businesses are increasingly focused on cloud computing, with the goal of promoting national digital transformation and improving national competitiveness using cloud computing technology. To accomplish this, a variety of measures are required to increase the number and quality of cloud service providers in Egypt. The following are the main actions to be taken under this initiative:

I-I11-A1 Negotiation and Partnership Development

- Egypt aggressively seeks agreements with prominent worldwide cloud service providers to increase local cloud service providers’ technical levels and service capabilities through the introduction of innovative technologies and management experience. At the same time, international cooperation can assist Egyptian businesses in better adapting to the demands of the global market and expanding their business reach.

I-I11-A2 Policy Framework Establishment

- Egypt has established a cloud-first strategy to attract more firms and investors to the cloud service sector, which includes measures such as incentives and simplified regulatory processes. Furthermore, data security and privacy protection are assured to increase consumer confidence in cloud services.

I-I11-A3 Ecosystem Enhancement

- This includes building sound cloud computing infrastructure, such as data centers and high-speed networks, to ensure the stability and efficiency of cloud services. At the same time, we will cultivate local cloud computing professionals and improve the technical and service level of the entire industry through education and training.

I-I11-A4 Advanced Data Management System Development

- Egypt encourages and supports scientific research institutions and businesses in developing novel data management solutions to fulfill the specific needs of various industries for data processing and analytics. This will not only increase the competitiveness of cloud services but will also encourage the digital transformation of connected businesses.

I-I11-A5 Promotion of Cloud Computing

- Seminars, training courses, and public awareness campaigns are held to promote cloud computing.

Initiative 11
Intelligent Cloud and Computing Resource

Code	Action Description	Objective	Action Details	Deliverables
I-I11-A1	Negotiation and partnership development	I-O28 Moderate number of supercomputers I-O29 Establish cloud services and apps I-O30 Improved infrastructure for cloud	1. Collect government and SOE cloud needs data. 2. Negotiate with cloud providers. 3. Formulate partnerships and contracts.	Signed agreements with reduced service costs.
I-I11-A2	Policy framework establishment		1. Develop tax subsidy policies. 2. Create policies for resource utilization. 3. Support R&D in cloud tech.	Official policy documents and guidelines.
I-I11-A3	Ecosystem enhancement		1. Allocate funds for supercomputers. 2. Collaborate for cloud-native tech. 3. Focus on regional tech needs.	Upgraded infrastructure and agreements.
I-I11-A4	Advanced data management system development		1. Build state-of-the-art data facilities. 2. Develop advanced management systems. 3. Ensure high data security.	Operational data storage and management facilities.
I-I11-A5	Promotion of cloud computing		1. Develop promotional programs. 2. Offer incentives for academia. 3. Establish academic partnerships.	Increased cloud usage in academia.

7.3.4.3 Initiative 12: “Ubiquitous 5G and Fiber”

The Egyptian government and key organizations are aggressively supporting broadband infrastructure upgrades, expanding regional network coordination, and adopting 5G initiatives to assure domestic network connections’ stability, efficiency, and speed. Egypt is likely to achieve even larger advances in broadband infrastructure construction in the future, providing the groundwork for the creation of a digital Egypt. The following are the main actions to be taken under this initiative:

I-I12-A1 Broadband Infrastructure Upgrade

- The popularization and optimization of optical fiber networks form the foundation for improving network quality. The Egyptian government is encouraging fiber-to-the-home (FTTH) projects to provide fast and reliable Internet access. Egypt expects to achieve high-speed broadband access nationwide by expanding fiber network coverage and optimizing network architecture, which will significantly improve the efficiency of online education, telemedicine, e-commerce, and other fields, as well as provide better services to people and businesses.

I-I12-A2 Regional Network Collaboration

- Strengthening regional network collaboration is critical to achieving seamless network connectivity. The Egyptian government encourages the pooling of network infrastructure between regions. By building regional network nodes, the Egyptian government may improve network traffic distribution, minimize network congestion, and maintain network connection continuity and dependability. This not only improves the overall quality of network services, but it also helps to close the digital divide between urban and rural areas, as well as between regions, while also promoting social fairness.

I-I12-A3 5G Strategy Execution

- The execution of the 5G strategy is a crucial step for Egypt to understand the future direction of scientific and technical progress. As 5G technology matures, the Egyptian government is actively deploying 5G networks to foster novel applications in smart cities, the Internet of Things, and Industry 4.0. This would significantly strengthen Egypt’s scientific and technological innovation skills, boost economic structure optimization and upgrade, and give Egypt an advantage in global digital competitiveness.

Initiative 12
Ubiquitous 5G and Fiber

Code	Action Description	Objective	Action Details	Deliverables
I-I12-A1	Broadband infrastructure upgrade	I-O31 5G plans and test zones I-O32 High-speed internet throughout the country I-O33 Domestic fiber industry	1. Assess current infrastructure. 2. Identify key areas for upgrade. 3. Deploy optical fibers and upgrade base stations.	Improved network coverage and speed.
I-I12-A2	Regional network collaboration		1. Initiate talks with neighboring countries. 2. Develop a collaboration framework. 3. Start shared network pilot projects.	Enhanced regional connectivity.
I-I12-A3	5g strategy execution		1. Following the national 5G strategy. 2. Identify partners and suppliers. 3. Start 5G pilot projects.	Roadmap for 5G rollout.

7.3.4.4 Initiative 13: “Ensure Data Center Sustainability”

Egypt aims to achieve sustainable development in this field by encouraging and supporting green data centers and green technological innovations, enhancing energy efficiency in computing infrastructure, and applying artificial intelligence in the energy sector. Below are the key steps that should be taken within the framework of this initiative:

I-I13-A1 Enhancing and Promoting Green Computing Infrastructure

- Enhancing and promoting green computing requires the development of national standards for energy efficiency in data centers and computing devices, as well as collaboration with experts to ensure that the standards are applicable and effective. Regular assessments should be conducted to evaluate performance periodically, allowing for updates based on technological advancements and market changes. Additionally, there should be encouragement for the planning and design of green data centers to increase energy use efficiency, while leveraging solar resources in Egypt to provide clean energy for data centers.

I-I13-A2 AI in The Energy Sector

Enhancing the use of artificial intelligence in the energy sector can be achieved through several effective strategies, including:

- Developing government policies: Establishing policies that support innovation in the use of artificial intelligence for managing energy networks, such as providing tax incentives or financial support for projects that utilize this technology.
- Training human resources: Offering specialized training programs to equip workers in the energy sector with the skills to use artificial intelligence technologies.
- Stimulating innovation: Creating competitions or grants to support new and innovative ideas that employ artificial intelligence in the energy field.

Initiative 13
Ensure Data Center Sustainability

Code	Action Description	Objective	Action Details	Deliverables
I-I13-A1	Enhancing and Promoting Green computing Infrastructure	I-O34 Conserving energy in computing infrastructure	1. Developing national standards related to energy efficiency in data centers and computing devices. 2. Awareness and Training: Organizing workshops and training courses to familiarize companies with the new standards and how to implement them, thereby enhancing their understanding of the importance of energy efficiency. 3. Enhancing the planning and design of data centers to increase energy use efficiency.	Encouraging policies Green Computing Facilities
I-I13-A2	Promote AI in the energy sector		1. Developing government policies 2. Training human resources 3. Stimulating innovation	Smart Grid.

7.3.5 Pillar 5: Ecosystem

7.3.5.1 Initiative 14: “Active and Secure Investment Environment”

The Egyptian government and other key organizations are implementing a number of initiatives to attract more venture capital and foster a healthy and thriving innovation environment. The following are the main actions to be taken under this initiative:

E-I14-A1 AI VC Awareness Program

- Egypt is launching an AI VC awareness drive. The program’s goal is to help venture capital firms better grasp AI’s commercial potential and investment prospects by offering detailed market data, investment trends, and best practices.

E-I14-A2 AI Investment Communication Platform

- Egypt is launching an AI investment market platform to encourage investment transactions. The platform will connect investors, start-ups, research institutions, and policymakers, allowing them to share information, network, and interact. This platform allows investors to communicate directly with possible investment targets.

E-I14-A3 AI Investment Regulatory Framework

- Egypt is working on a legislative framework for AI investments to promote transparency and compliance in investment activities. This framework will provide clear regulations and criteria for investment while also creating a fair and equitable environment that safeguards the interests of investors and start-ups.

E-I14-A4 Sector Integration Initiatives

- To attract more venture capital, the government is attempting to combine several industries to provide one-stop services, streamline investment processes, and lower administrative hurdles. These include making registration procedures easier, providing one-stop financial services, and offering tax breaks.

E-I14-A5 AI Startup Financial Support Program

- We launched a financial support initiative for AI startups. The program will offer a comprehensive range of financial assistance, including seed capital, growth capital, and expansion capital, to satisfy the financial needs of start-ups at various phases of development.

E-I14-A6 International AI Investment Promotion

- Egypt is aggressively seeking cooperation with foreign AI investment promotion bodies to attract global investment. This involves attending international investment conferences, signing investment cooperation agreements, and forming international cooperation networks to increase Egypt’s international impact in the field of AI.

Initiative 14
Active and Secure Investment Environment

Code	Action Description	Objective	Action Details	Deliverables
E-I14-A1	AI VC awareness program	E-O35 Increase the number of domestic tech companies E-O36 Emergence of AI unicorns E-O37 Encouraging the application of AI E-O38 More investment in AI and deep tech	1. Workshops on AI trends. 2. AI investment case studies. 3. International VC expert sessions.	Informed VC community.
E-I14-A2	AI investment communication platform		1. Online networking platform. 2. Matchmaking events. 3. Startup advisory services.	Dynamic investment ecosystem.
E-I14-A3	AI investment regulatory framework		1. Draft AI venture regulations. 2. Startup assessment criteria. 3. Startup rating system.	Transparent investment environment.
E-I14-A4	Sector integration initiatives		1. Cross-sector workshops. 2. Joint venture projects. 3. Shared R&D initiatives.	Innovation through collaboration.
E-I14-A5	AI startup financial support program		1. Low-interest loan schemes. 2. National AI entrepreneurial fund. 3. Co-investment opportunities with VCs.	Financially supported AI startups.
E-I14-A6	International AI investment promotion		1. Marketing campaigns. 2. International AI summits. 3. Global business incubator partnerships.	Global investment attraction.

7.3.5.2 Initiative 15: “Industry-Academia-Research Platforms”

Strengthen in-depth cooperation between Egypt’s industry, universities, and research institutes, as well as promote cooperation at all levels, from architecture construction to platform startup, research lab establishment, and the establishment of a technology transfer mechanism. We anticipate that through these activities, Egypt will be able to gain an advantage in the global competition for science and technology. The following are the main actions to be taken under this initiative:

E-I15-1 Establish Industry-Academia Collaboration Framework

- The government, educational institutions, research institutes, and businesses should collaborate to develop a plan for science and technology, define their roles and duties, and form a joint force for collaborative innovation. This is to ensure the efficient use of educational resources, the rapid transformation of scientific research findings, and the perfect alignment with industrial needs.

E-I15-2 Launch National Industry-University-Research Collaboration Platform

- Egypt established a nationwide industry-university-research collaboration platform, which is a key tool for integrating resources and improving innovation skills. This portal can be used as a hub for information exchange, project collaboration, and resource sharing. Simultaneously, the platform can foster information dissemination and sharing through forums, seminars, and other events, as well as raise overall societal innovation awareness.

E-I15-3 Initiate Industry-Funded AI Research Labs

- The establishment of the industry-funded AI research lab is a critical step toward seizing new potential for scientific and technological progress and promoting industrial upgrading in Egypt. As a frontier field of future science and technology, the use of AI in numerous industries will significantly increase production efficiency and generate new economic growth opportunities. By setting up industry-funded AI research labs, we can attract and cultivate high-end talents, promote AI technology innovation, and provide strong technical support for Egypt’s industrial upgrading.

E-I15-4 Create A Technology Transfer Mechanism

- To develop a strong intellectual property rights protection framework, promote technical exchanges between scientists and businesses, and create specialized technology transfer organizations to provide technology assessment, trade, advising, and other services.

Initiative 15
Industry-Academia-Research Platforms

Code	Action Description	Objective	Action Details	Deliverables
E-I15-1	Establish industry-academia collaboration framework	E-O39 Industry-academic collaboration platforms E-O40 Increasing number of researchers E-O41 Global AI conferences E-O42 Global hub for breakthrough AI research	1. Identify and sign MoUs with 10+ AI startups and industry players. 2. Form a steering committee with 5+ representatives from academia, industry, and government. 3. Develop a legal and operational framework within 6 months.	Functioning collaboration framework.
E-I15-2	Launch national industry-university-research collaboration platform		1. Develop an online platform with key features for collaboration. 2. Organize a national conference with 200+ attendees. 3. Implement project collaboration, resource sharing, and communication features.	Operational online collaboration platform.
E-I15-3	Initiate industry-funded AI research labs		1. Pitch to and secure funding from 5+ industry partners. 2. Set up governance for the labs. 3. Recruit key researchers and staff for 3+ labs.	Functional AI research labs with active projects.
E-I15-4	Create a technology transfer mechanism		1. Establish tech transfer offices in 5+ universities. 2. Train staff in IP management. 3. System for evaluating transferable technologies.	Streamlined technology transfer process.

7.3.5.3 Initiative 16: “Support for AI Start-ups”

Egypt has increased incubation funding for AI firms to achieve traction in the global AI race. The following are the main actions to be taken under this initiative:

E-I16-1 Establishment of AI Startup Fund

- Create an AI venture fund to give financial support to start-ups. To assure stability and diversity of funding, governments, the private sector, and overseas investors could all contribute to the fund. The fund intends to lower businesses’ financial risks and assist in overcoming early-stage startup challenges, as well as attract more domestic and global investors to Egypt’s AI industry.

E-I16-2 Creation of AI Incubators and Accelerators

- Establish AI incubators and accelerators to offer specialized services to startups. These platforms can give office space, technical support, entrepreneurial advice, market docking, and other resources to help start-ups develop quickly. At the same time, frequent seminars, training courses, and innovation competitions can foster exchanges and collaboration among start-ups, resulting in a healthy innovation ecosystem.

E-I16-3 International Cooperation Initiative

- We actively participate in worldwide AI cooperation projects, introducing sophisticated technology and management experience to boost Egyptian AI firms’ international competitiveness. Furthermore, by forming relationships with the world’s leading AI research institutions and corporations, Egyptian startups can gain access to the international market and expand their business potential.

E-I16-4 AI Incubator Incentive Programs

- To encourage innovation, the government can grant tax breaks, low-interest loans, and talent introduction help to firms in incubators. At the same time, further incentives should be provided to start-ups that have produced outstanding successes in the field of AI.

Initiative 16
Support for AI Startups

Code	Action Description	Objective	Action Details	Deliverables
E-I16-1	Establishment of AI startup fund	E-O43 Optimized incubation programs E-O44 Professional analysis of startup potential E-O45 Funding for AI startups E-O46 Dedicated campaigns and activities	1. Coordinate between MCIT and the Ministry of Finance to set up the fund. 2. Design funding criteria and process. 3. Launch an awareness campaign.	Functional AI startup fund.
E-I16-2	Creation of AI incubators and accelerators		1. Identify and secure incubator locations. 2. Develop a range of services. 3. Recruit mentors/advisors.	Operational incubators/ accelerators.
E-I16-3	International cooperation initiative		1. Establish partnerships with international incubators. 2. Plan market entry programs. 3. Organize technical exchanges.	Global exposure for startups.
E-I16-4	AI incubator incentive programs		1. Design tax incentives/subsidy programs. 2. Coordinate with financial institutions. 3. Promote incentives to incubators.	Increased number of incubators.

7.3.5.4 Initiative 17: “Public Awareness of AI Development”

Egypt actively guides the public to understand and accept AI through multi-channel and multi-level actions, with the goal of creating a national environment that is AI-friendly and adaptable to technological change, which not only improves the public’s scientific and technological literacy but also paves the way for the Egyptian AI industry to thrive. The following are the main actions to be taken under this initiative:

E-I17-1 Develop Positive AI News Publication Initiative

- The government has developed an active AI news release plan, with the goal of releasing the most recent AI progress, policy developments, and application cases through authoritative channels in order to dispel public misconceptions and fears about AI, while emphasizing AI’s potential for solving social problems and improving quality of life.

E-I17-2 Develop AI Awareness Programs in Schools

- Egypt incorporates AI cognitive courses into school education, emphasizing not only theoretical knowledge but also practical operations, allowing students to experience AI operation through programming and project design while cultivating their interest in science and technology as well as their innovative spirit.

E-I17-3 Launch Public Workshops on AI and Technology

- The government has also organized a series of workshops on AI and technology, inviting industry experts and scholars to share cutting-edge technology and practical AI applications with the public. This is in addition to providing an interactive platform for the public to ask professionals directly and gain a better understanding of AI.

E-I17-4 Media Campaign for AI in Industries

- Tell success stories about AI in agriculture, healthcare, transportation, and other industries via television, radio, newspapers, and the Internet, demonstrating the positive impact of AI on social progress and improving the public’s view of AI.

E-I17-5 Design and Implement AI Surveys

- Designing and implementing AI surveys is an important way for the government to understand the public’s perception of AI. Collect data about the public’s attitude, awareness level, and AI requirements through questionnaires and interviews, and use the data to help design more successful AI marketing efforts.

Initiative 17
Public Awareness of AI Development

Code	Action Description	Objective	Action Details	Deliverables
E-I17-1	Develop positive AI news publication initiative	E-O47 Public recognition of AI development E-O48 Public recognition of benefits brought by AI E-O49 Positive social media discussion E-O50 Ensured a safe environment	1. Assemble a dedicated content creation team. 2. Develop a content calendar including topics like AI breakthroughs, local AI advancements, and user-friendly AI introductions. 3. Coordinate with influencers and media outlets for content distribution.	■ Completed articles/posts with distribution statistics. ■ Monthly engagement and reach report.
E-I17-2	Develop AI awareness programs in schools		1. Collaborate with educational experts to design AI curriculum modules for primary and secondary schools. 2. Train teachers to deliver AI content effectively. Launch pilot programs in selected schools.	■ AI curriculum modules. ■ Teacher training workshop reports. ■ Pilot.
E-I17-3	Launch public workshops on AI and technology		1. Plan workshop agendas focusing on AI basics, network security, and data integrity. 2. Identify and prepare venues and materials for workshops. Promote workshops through various channels to maximize attendance.	■ Detailed workshop schedules and materials. ■ Post-workshop reports including attendance and survey outcomes.
E-I17-4	Media campaign for AI in industries		1. Identify successful AI applications in industries like agriculture, healthcare, etc. 2. Produce multimedia content (videos, articles, infographics). showcasing these applications. 3. Distribute content through TV, online platforms, and events.	■ Multimedia content portfolio. ■ Distribution and engagement report.
E-I17-5	Design and implement AI surveys		1. Develop survey questions to assess public awareness and attitudes towards AI. 2. Partner with online platforms and media agencies for survey distribution. 3. Analyze survey data and generate insights.	■ Survey results report with key insights and recommendations.

7.3.6 Pillar 6: Talents

7.3.6.1 Initiative 18: “Senior AI Expert Cultivation and Attraction”

To increase the quantity and quality of local AI talent in Egypt, a comprehensive educational approach is required. It includes providing students with hands-on opportunities to stimulate their innovative spirit, improving teachers’ professional capabilities, and creating a supportive environment for innovators. The following are the main actions to be taken under this initiative:

T-I18-1 AI Research and Development Labs for Students

- We need to create AI R&D labs for students. These labs not only provide a platform for exercising and investigating AI technologies but also pique students’ interest in AI and help them develop innovative thinking and problem-solving skills.

T-I18-2 AI Competitions and Hackathons to Foster Innovation and Problem-Solving Skills

- Organizing AI competitions can excite students’ innovative spirit, encourage them to build innovative ideas, and help them comprehend the practical application of AI, thus increasing their interest and dedication to AI.

T-I18-3 Continuous Professional Development for Educators

- Continuing professional development for educators is also important in enhancing the quality of AI education. We need to provide teachers with specialized training so that they can master the most recent AI knowledge and teaching approaches and efficiently impart them to pupils. This includes scheduled seminars and workshops.

T-I18-4 AI Innovators Hub

- Create an AI innovator center to allow researchers, developers, and entrepreneurs in the field of AI to collaborate and innovate. These institutes can provide the resources needed, including advanced hardware facilities, datasets, research funding, and chances for industry collaboration, to assist innovators in turning their ideas into actual products and promoting the development of Egypt’s AI industry.

Initiative 18

Senior AI Expert Cultivation and Attraction

Code	Action Description	Objective	Action Details	Deliverables
T-I18-1	AI research and development labs for students	T-O51 Well-developed domestic talent T-O52 Domestic talent retained in Egypt T-O53 Specialized high-level talent	Provide a platform for exercising and investigating AI technologies.	AI research and development labs.
T-I18-2	AI competitions and hackathons to foster innovation and problem-solving skills		Organizing AI competitions can excite students’ innovative spirit, and encourage them to build innovative ideas.	AI competitions.
T-I18-3	Continuous professional development for educators		Specialized instructors, and staff training.	Scheduled seminars and workshops.
T-I18-4	AI innovators hub		Establish AI innovation hubs to provide the resources needed, including advanced hardware facilities, datasets, research funding, and chances for industry collaboration.	Industrial cooperation.

7.3.6.2 Initiative 19: “International Academic Alliances”

To promote cooperation in AI research and education, alliances and partnerships will be forged with foreign academic institutions. To support the growth of AI competence in Egypt, exchange programs, collaborative research projects, and the sharing of information and resources will all be involved. The following are the main actions to be taken under this initiative:

T-I19-1 International Collaboration Programs

- To promote knowledge transfer, technology exchange, and cooperative projects in the field of AI, collaboration programs will be formed with international organizations, governments, and industry participants.

T-I19-2 Offering Opportunities

- Those with an interest in AI will be offered a range of advanced opportunities, including grants, internships, research fellowships, and scholarships. They will be able to participate in cutting-edge AI initiatives, obtain advanced training, and gain real-world experience as a result.

7.3.6.3 Initiative 20: “Cross Discipline Course Development”

Egypt has led the way in education reform, particularly in the area of STEM (Science, Technology, Engineering, and Mathematics) curriculum development, which has established a strong basis for AI education. The widespread adoption of STEM programs enhances students’ scientific literacy while also fostering creative problem-solving and imaginative thinking skills, which are essential in the AI industry. The following are the main actions to be taken under this initiative:

T-I20-1 STEM Program

- Egypt is constructing a comprehensive AI education system with the goal of cultivating AI experts who are knowledgeable about scientific and technological theory and practice, as well as autonomous and collaborative thought processes. These skills will not only propel Egypt’s technical advancement but also breathe fresh life into the AI community worldwide.

T-I20-2 AI Joint Majors

- AI and fundamental majors are becoming more and more combined in Egyptian higher education. Many universities have set up AI joint majors, such as computer science and AI, and engineering and AI, which are designed to enable students to understand and apply AI technology while mastering traditional expertise. Through the development of a variety of abilities, this multidisciplinary education paradigm helps improve students’ employability in the future.

Initiative 19
International Academic Alliances

Code	Action Description	Objective	Action Details	Deliverables
T-I19-1	International AI collaboration programs	T-O54 International collaboration programs	Cooperative projects in the field of AI.	AI dialogues, research, and governance programs
T-I19-3	AI grants, internships, research fellowships, and scholarships	T-O55 Wide range of advanced opportunities	Participate in cutting-edge AI initiatives, obtain advanced training, and gain real-world experience as a result.	Grants, internships, research fellowships, and scholarships.

Initiative 20
Cross Discipline Course Development

Code	Action Description	Objective	Action Details	Deliverables
T-I20-1	STEM program	T-O56 Well-developed STEM courses T-O57 Broad range of joint majors	Construct a comprehensive AI education system.	STEM program.
T-I20-2	AI joint majors		Set up AI joint majors, such as computer science and AI, and engineering and AI.	AI majors.

7.3.6.4 Initiative 21: “Comprehensive Qualification and Certification System”

Egypt’s AI training and certification program is a welcome reaction to the need for AI expertise around the world as well as a calculated move to strengthen the nation’s scientific and technological prowess. This plan’s implementation will have a significant impact on Egypt’s economic growth, employment, and educational system, providing a strong basis for the nation to meet its long-term scientific, technological, and economic objectives.

T-I21-A1 AI Qualification and Certification System

- Egypt is going to introduce the AI talent management and certification program, which is a recognized certification scheme aimed at standardizing the competencies of AI specialists. To represent the abilities and expertise of AI professionals at all levels—from novice AI practitioners to senior AI researchers and developers—the program will establish several certification levels.

T-I21-A2 AI Talent Management

- The Egyptian government will create AI training programs and courses that adhere to international standards by collaborating with academic institutions, research centers, and commercial businesses during the implementation of this plan. The Egyptian government intends to raise the nation’s total AI technological level and supply a pool of qualified personnel, goods, and services, as well as support, to AI firms operating both domestically and internationally through the AI qualification and certification system.

Initiative 21
Comprehensive Qualification and Certification System

Code	Action Description	Objective	Action Details	Deliverables
T-I21-A1	AI qualification and certification system	T-O58 Management and certification programs T-O59 Talent management and succession planning program	1. Design a capability framework for AI-enabled categories. 2. Design a qualification and certification scheme for different AI competencies of AI specialists.	AI capability framework and AI certification scheme.
T-I21-A2	AI Talent management		1. Design world-class training programs for different capabilities identified in the AI capability framework. 2. Deliver training programs for AI professionals and AI-empowered users.	Trained professionals and empowered users in AI.

8. Monitoring and Evaluation

To effectively implement, monitor, and evaluate Egypt National AI strategy, we based our monitoring and evaluation process on "Quality Strategy with Effective Oversight." This implies the following principles:

- Strategic Clarity: The strategy would embody a future where objectives are clear and the pathways to achieve them are well-defined and practical
- Seamless Execution, Monitoring, and Evaluation: The system would ensure progress is always measurable and in line with the strategic vision, signifying a state of continuous and effective oversight, with transparent 1, 3, and 5-year milestones. National AI capacity will be evaluated at least annually through periodic assessments.
- Evaluation is based on the Capacity Assessment Framework methodology, where indicators for the six pillars have been identified and reflected in the CAF methodology.

8.1 Capacity Assessment Framework (CAF) Methodology

We aim to construct a multidimensional index that can thoroughly assess Egypt's ability to support AI development, identifying areas for improvement to boost AI development in Egypt.

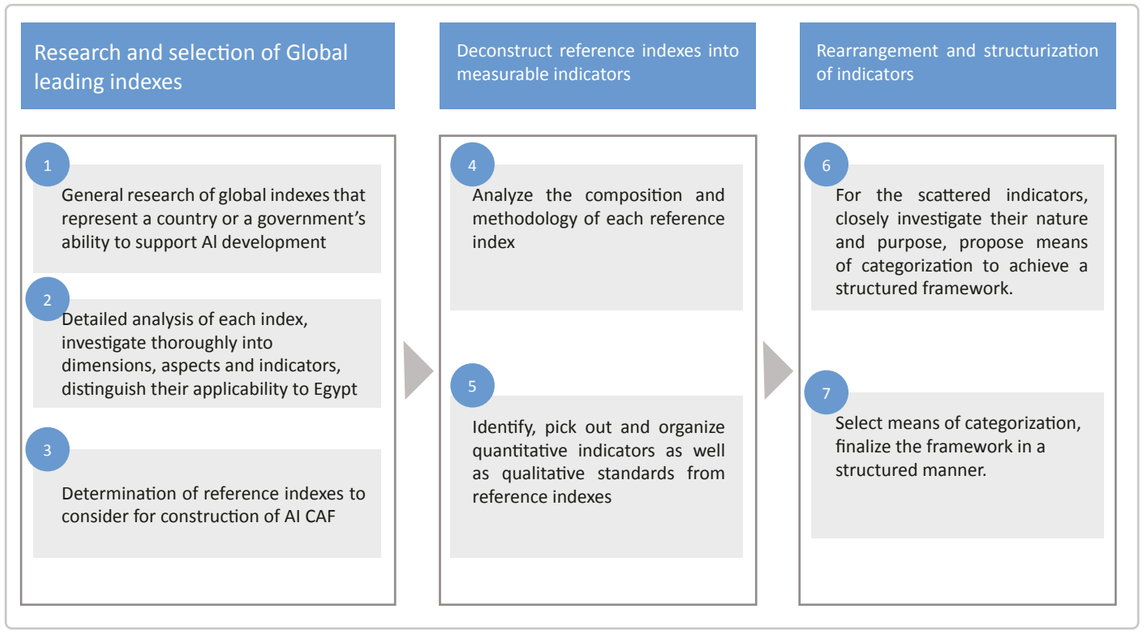


Fig 6: Graph - AI CAF Construction: General Methodology

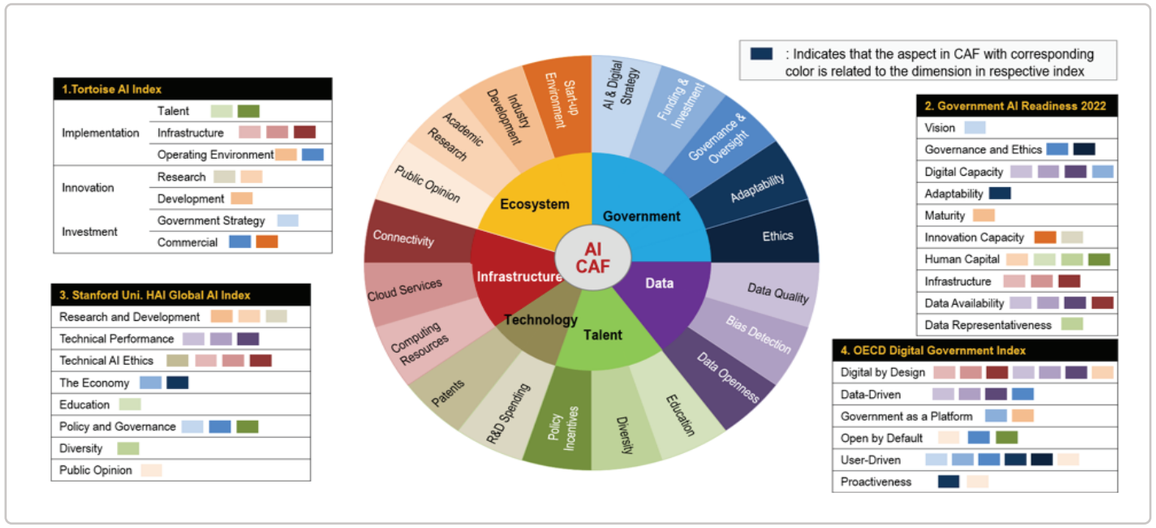
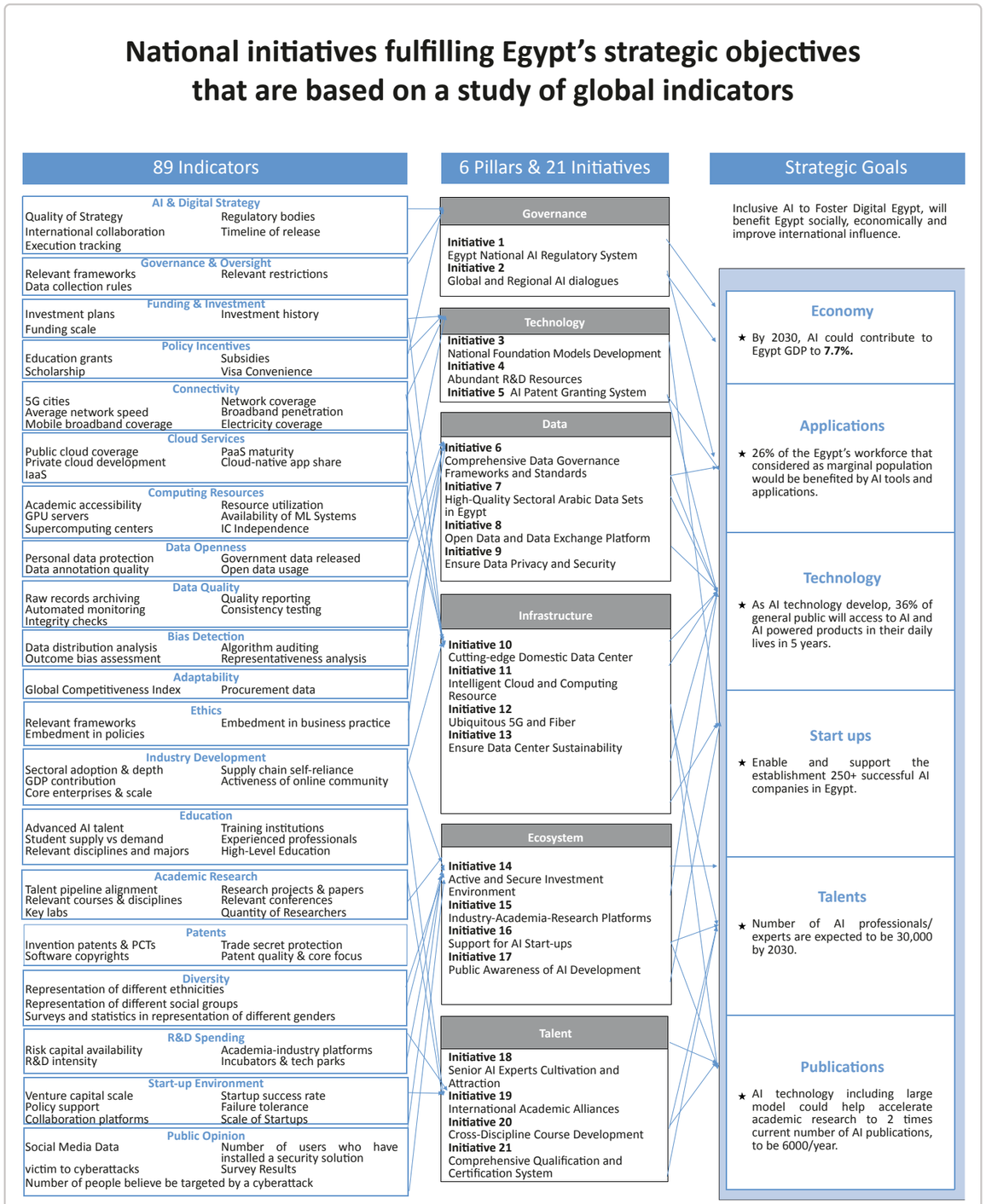


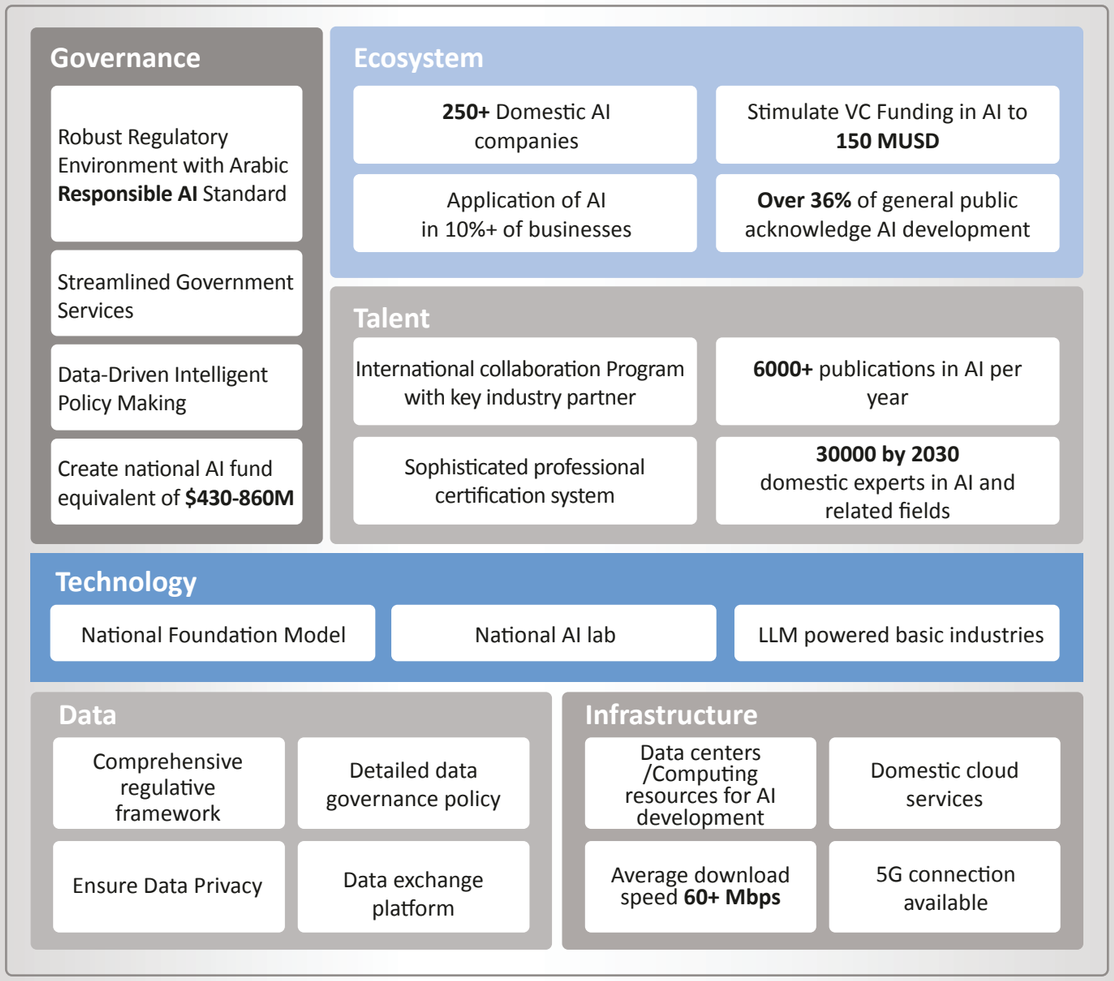
Fig 7: Graph - AI CAF Detailed Mapping: Full coverage of pillars from four indices

The below chart shows how we can use the CAF framework to measure the 21 initiatives as outlined in the previous chapter.



8.2 KPIs to Be Achieved

With the national AI strategy in place, Egypt intends to progressively meet the following KPI targets.



Graph - Key Achievements of 6 Pillars according to AI Strategy Roadmap 2025-2030

Remarks:

- $430-860M: Data shows that countries trying to catch up in the AI race show a strong linear relationship in AI-dedicated funding to its GDP, investing around 0.1%-0.15% of its GDP in AI strategic funding.
- 250+ domestic AI companies: Data from Tortoise Media's Global AI Index 2023: Number of AI companies, top 20 countries: Austria (195), Ireland (221).
- Over 10% of businesses apply AI in daily practice: Data from Tortoise Media's Global AI Index 2023: Business self-reporting using AI, top 20 countries: Austria (8.83%), Ireland (7.88%).
- Reaching 30,000+ domestic experts in AI and AI-related fields: Data from Tortoise Media's Global AI Index 2023: Existing number of AI professionals, top 20 countries: Austria (318), Germany (4917), calculated in proportion to Egypt's population; currently at 1,401, the increase is contributed by the industry growth to 250+ domestic AI companies.

8.3 Expected Results after Implementing Key Initiatives (1 year, 3 years, 5 years)

We predict that Egypt's regional and global AI competitiveness rankings will improve as a result of the multi-year National Artificial Intelligence Strategy and its initiatives, and we look ahead to the various stages of the strategy's implementation. For the first, third, and fifth years of the strategy, the following are the short-, medium-, and long-term projections.

Fig 8: Graph - Outlook for short, medium, and long-term implementation effects

9. Conclusion and Next Steps

Egypt places significant emphasis on the advancement of AI, as seen in the government's robust financial and policy backing for AI technologies. Egypt is steadily building a strong basis for the advancement of AI, from creative R&D to increasing investment. Egypt has made great strides toward establishing an environment that is favorable to the development of AI, as evident in its vision, governance, digital capabilities, and data accessibility. These developments have not only increased Egypt's standing in the global AI community but have also drawn more investment from both domestic and foreign sources and bolstered the growth of the regional technology sector.

The roadmap for further development has been laid out, and the Egyptian government intends to initiate a new phase of its "National AI Strategy." Egypt is anticipated to grow into a significant hub for the development of AI in the Middle East and Africa. The strategy aims to further solidify Egypt's status as a regional AI hub.

We suggested the Capacity Assessment Framework (CAF) approach as a way to thoroughly evaluate Egypt's capacity for AI development. To begin, a thorough and methodical analysis of the worldwide AI indices has been performed, such as the OECD Digital Government Index, Stanford University's HAI worldwide AI Index, the Government AI Readiness Index, and Tortoise Media's Global AI Index. Thus, attention must be given to 89 critical indicators. Secondly, to ascertain the goals, prospects, and obstacles of AI development in Egypt, we conducted investigations with important government, industrial, and academic stakeholders. Moreover, Egypt has carried out comparative studies on several nations—China, South Korea, the United Arab Emirates, Saudi Arabia, Turkey, and Brazil—that have led the way in AI development.

Given the developments in cloud computing, big data, and AI, Egypt has a promising future for AI growth with continued investment and strategy implementation across 21 initiatives across governance, technology, data, infrastructure, ecosystem, and talent. Cloud computing facilitates the rapid development and application of AI. Besides, AI requires enormous data sets. Egypt will place a high priority on protecting its data resources, especially by keeping data inside its borders and preventing it from leaving the nation. In this approach, the country will benefit from investments in local data infrastructure, from AI applications generating new jobs and tax money locally, and from AI applications across a range of industries based on data resources.

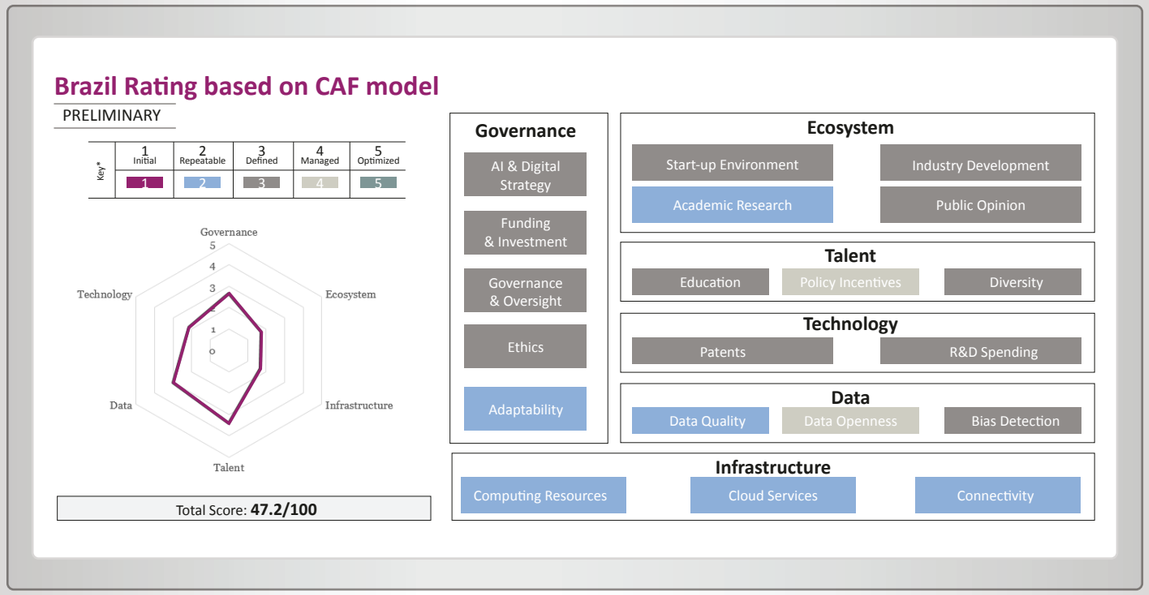
Egypt would enhance its international influence, share best practices, and make better use of global resources by fortifying its partnerships with individual nations and international organizations. Egypt's growth in the global AI competitiveness rankings will also reflect its aspirations and accomplishments as a rising digital powerhouse, as it takes a more prominent role in local AI efforts.

Appendix: Countries' Rating Based on CAF Model

Brazil's Rating Based on CAF Model

Brazil: Brazil has a large population and data to leverage, similar to Egypt. It is a leading AI player in Latin America, with growing innovation and entrepreneurship worth studying. Brazil's national AI strategy is to activate an innovative ecosystem, which in return drives AI applications across industries. Brazil is particularly strong in the ecosystem, with copious efforts to boost PPPs.

- FINEP (under MCTI) provides financial resources, policy frameworks, and collaborative platforms to cultivate Brazilian innovative industry.
- The Center for Artificial Intelligence played a key role in demonstrating PPP in Brazil.
- Brazil set up 8 research centers dedicated to AI industrial applications, with key sectors being agriculture, manufacturing, defense, education, cybersecurity, smart cities, and healthcare.
- Brazil learned from both the UK and Estonia to integrate all government data successfully.



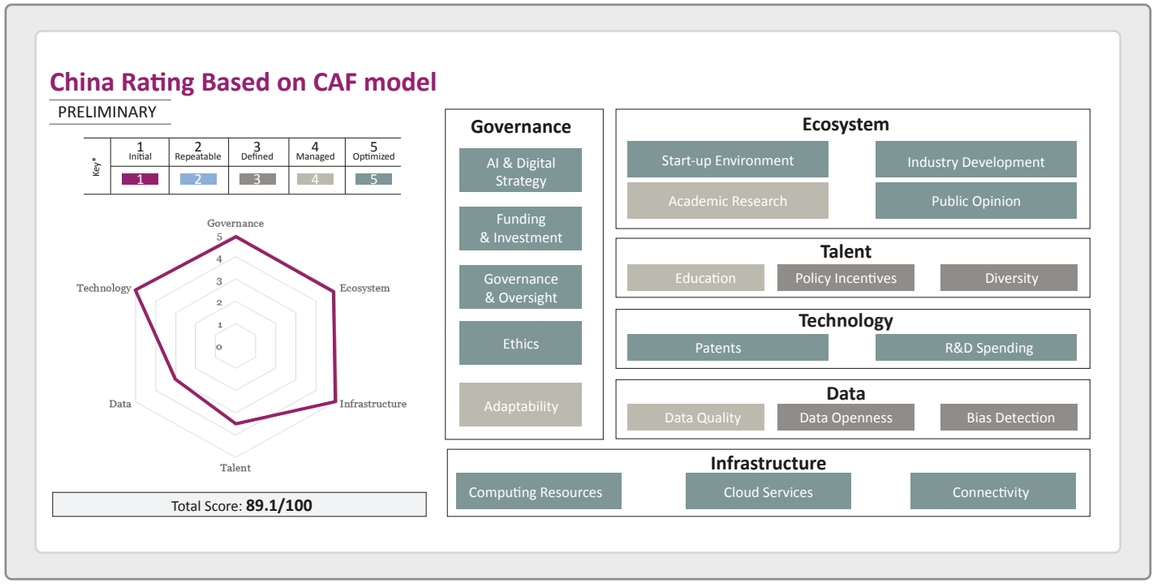
China's Rating Based on CAF Model

China: China surpasses other developed countries in the AI race through a top-down strategic move, making it the best study case for nations seeking to surpass countries that have been working on AI for much longer in just 20 years. While the traditional bottom-up approach (like that of the US, where foundational technology drives progress) is suitable for developed countries with a strong economy and science sector, China employs a top-down approach focusing on application demands and industrial upgrades. AI is part of China's digital economy strategy, with a focus on industry digitalization. The Digital China strategy is structured according to the "2522" framework, which is:

- **2** foundations: **digital infrastructure and digital resource systems.**
- **5** integrations: integrating technology with China's "five-sphere integrated plan" of coordinated development of its economy, politics, culture, society, and ecological civilization.
- **2** great abilities: technological innovation and data security.
- **2** environments: **domestic and international digital development.**

Guided by the government, China has established a strong infrastructure and a flourishing ecosystem that enables technological innovation.

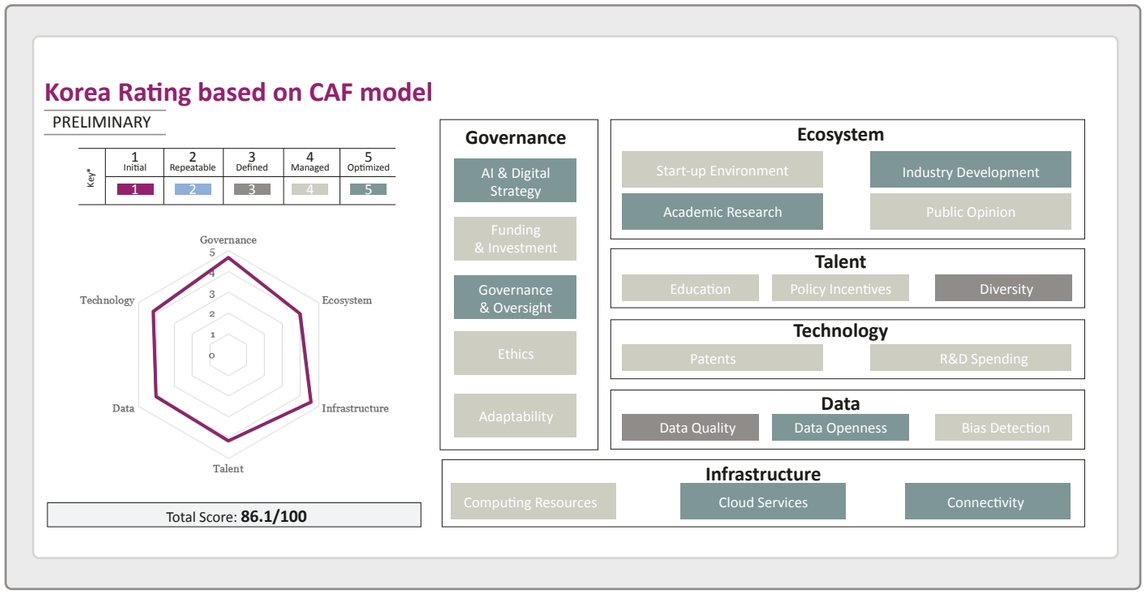
- Municipal and provincial governments across China are establishing cross-sector partnerships with research institutions and tech companies to create local AI innovation ecosystems and drive rapid research and development.
- Invest heavily in R&D - China has the highest dedicated government spending on AI technology development.
- China has successfully integrated infrastructure at the national level to embrace the digital era.
- China has strong AI-related promoting policies, such as processing Eastern data in the West.
- China cultivates AI talent based on inputs from both industry and academia, e.g., the AI+ training model.



Korea's Rating Based on CAF model

Korea: Korea has established a comprehensive governance framework for AI, and also has demonstrated a clear roadmap with milestones to build an ecosystem for AI. It aims to become the new frontier in the AI revolution by cultivating domestic startups and scaleups.

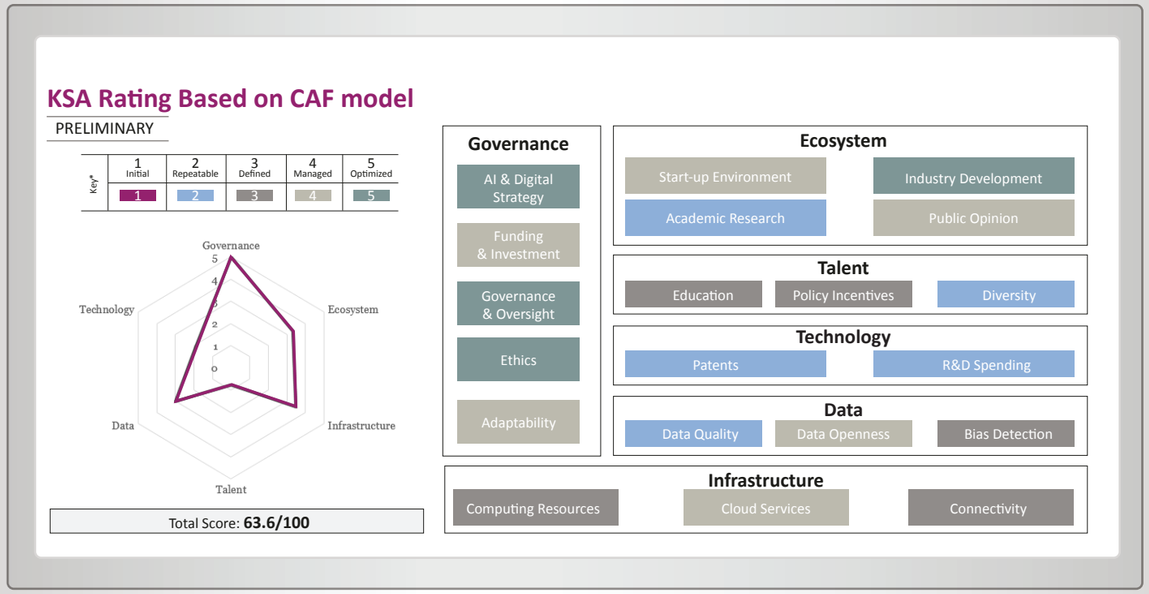
- To stimulate AI innovation, South Korea's AI Act allows anyone to develop new AI technology without having to obtain any government pre-approval, as a general principle.
- South Korea has a relatively clear roadmap to cultivate AI into the business ecosystem, with dedicated investments and technology direction.
- The VC investment is very progressive, with 376 scaleups (25% of the total) able to raise $12.5 billion, contributing to advancements in AI deep technologies.



Saudi Arabia's Rating Based on CAF model

Saudi Arabia: Saudi Arabia's National Strategy of Data and AI provides a comprehensive framework of measurable goals; it is a good benchmark for a structured strategic framework. It illustrates Saudi Arabia's opportunities, challenges, vision, and strategic direction, measurable short-term and long-term targets, as well as the roadmap for action. KSA is especially strong in strategic aspects, in addition to efforts made in the operating environment.

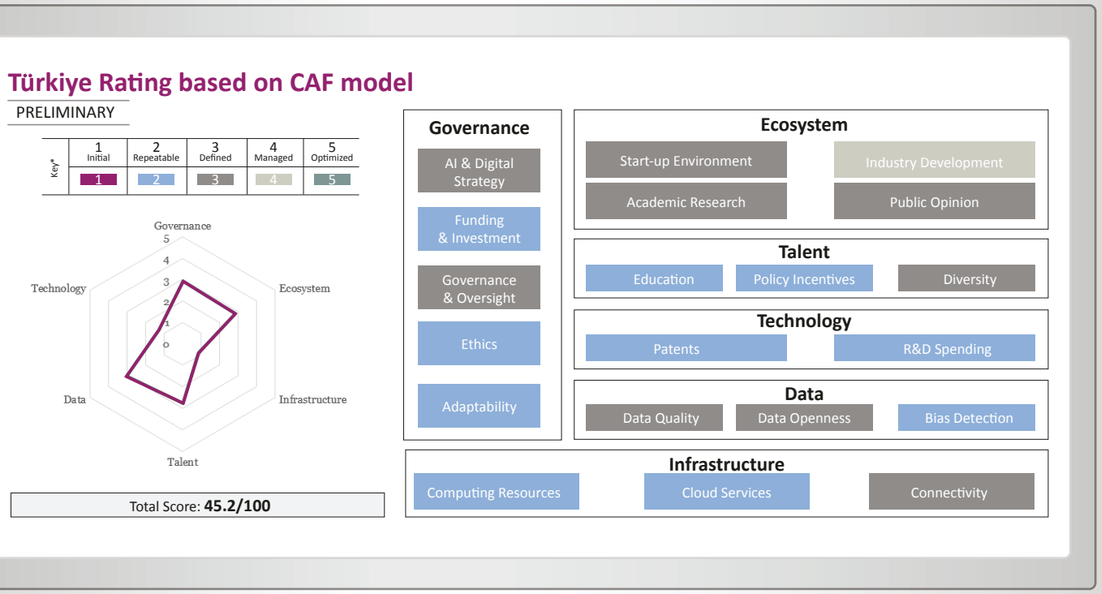
- Saudi Arabia's National Data Management Office (NDMO) sets out the open data regulatory frameworks.
- Saudi Arabia initiated the project of NEOM which creates the best environment for the creative use of data and AI.
- The draft new Intellectual Property (IP) Law is one of the first IP laws in the Middle East region to include IP created by Artificial Intelligence (AI).
- International collaboration with Huawei Cloud to boost Saudi Arabia's digital economy for the government, corporations, and individuals.



Turkey's Rating Based on CAF model

Turkey: The government of Turkey has incorporated AI into the national development plan where an AI strategy and a roadmap will be rolled out accordingly. Turkey's top-down AI strategy and supportive ecosystem for start-up-academia collaboration enable a prosperous environment for AI research and development.

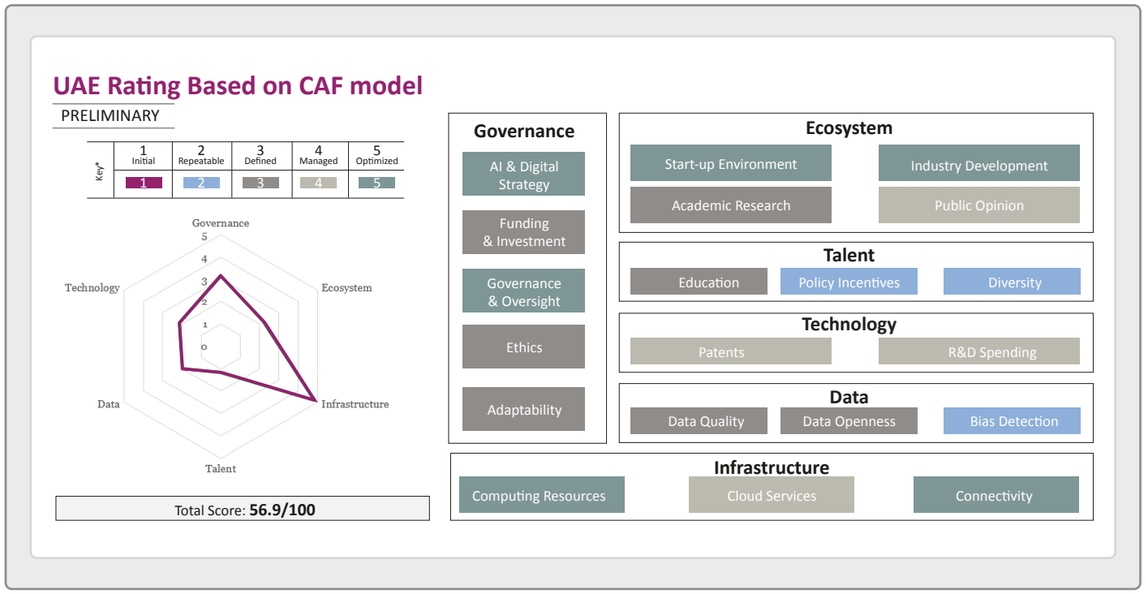
- VC for Turkey-based startups is much higher than those based in other MENA countries.
- AI Institute enables researchers to deal with actual business cases and facilitate knowledge transfer into commercialization.
- The National Data Dictionary project aims to compile unorganized data in a structured way.



UAE's Rating Based on CAF Model

UAE: UAE is a good benchmark given its similarity to Egypt in terms of location, Arabic culture and gradually improving AI ranking. UAE's AI strategy is to drive industrial advancement via government-led large model (Falcon) construction. UAE is particularly strong in ecosystem and infrastructure, while its technology is also catching up to a world-class level, and aims to become an innovation hub and hence needs to further focus on skills development and continues to focus on emerging tech investments.

- Academic to product: Abu Dhabi's Technology Innovation Institute (TII) launched the flagship Abu Dhabi's Falcon, a 40-billion-parameter AI model.
- After a large investment in the network infrastructure, UAE ranks 1st in the Arab region and 4th in the world for 5G launch - 80% coverage in main cities.
- UAE has an active commercial environment and strong international talent collaboration, which foster a mature AI ecosystem.

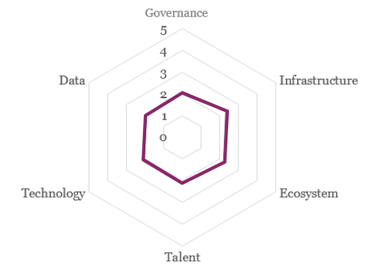


Egypt Rating Based on CAF model

Egypt AI Rating based on CAF model

PRELIMINARY

Key*	1 Initial	2 Repeatable	3 Defined	4 Managed	5 Optimized
	1	2	3	4	5



Total Score: **43.6/100**

Governance
- AI & Digital Strategy
- Funding & Investment
- Governance & Oversight
- Ethics
- Adaptability

Ecosystem
- Start-up Environment
- Industry Development
- Academic Research
- Public Opinion

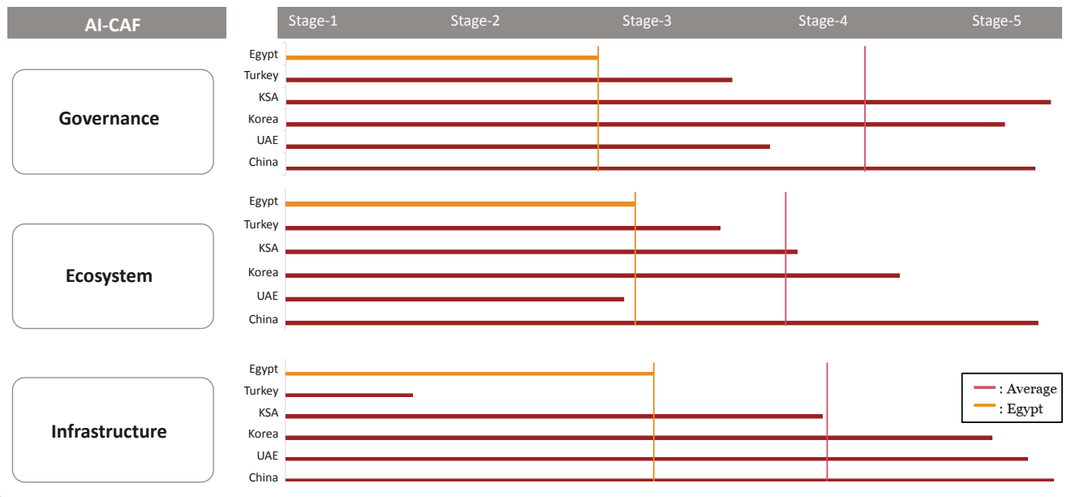
Talent
- Education
- Policy Incentives
- Diversity

Technology
- Patents
- R&D Spending

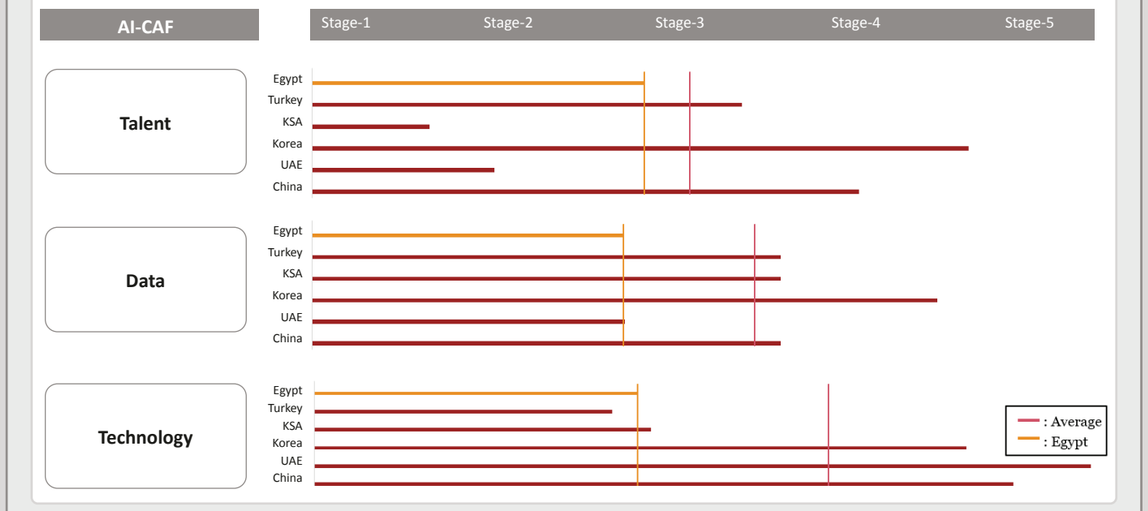
Data
- Data Quality
- Data Openness
- Bias Detection

Infrastructure
- Computing Resources
- Cloud Services
- Connectivity

■ **Comparison of Egypt's and benchmark countries' current status in terms of the six dimensions of AI CAF (1/2)**



■ **Comparison of Egypt's and benchmark countries' current status in terms of the six dimensions of AI CAF (2/2)**



	Overall	Talent	Infrastructure	Operating Environment	Research	Development	Government Strategy	Commercial	Scale	Intensity
Kenya	62	59	60	59	60	61	56	47	62	62
Nigeria	61	49	62	56	52	59	54	59	61	60
Sri Lanka	60	56	58	60	62	62	58	54	60	59
Pakistan	59	33	61	61	49	57	55	58	59	61
Bahrain	58	61	39	43	58	60	61	36	58	56
Morocco	57	60	47	48	56	58	50	62	55	58
Tunisia	56	44	54	53	47	53	58	61	57	53
South Africa	55	57	56	31	51	54	61	28	53	57
Armenia	54	35	50	51	59	35	61	46	56	46
Uruguay	53	55	27	39	61	42	48	48	54	47
Egypt	52	43	55	55	45	56	23	53	44	55
Mexico	51	39	53	41	46	49	41	60	45	54
Slovakia	50	54	45	26	53	46	45	50	50	45

National Council for Artificial Intelligence

Egypt National Artificial Intelligence Strategy 2025-2030

Second Edition