REPUBLIC OF KENYA

MINISTRY OF INFORMATION, COMMUNICATIONS AND THE DIGITAL ECONOMY

KENYA NATIONAL ARTIFICIAL INTELLIGENCE (AI) STRATEGY 2025 – 2030

[DRAFT]

January 2025

TABLE OF CONTENTS

Executive Summary

Kenya's Artificial Intelligence (AI) Strategy envisions the country as the leading AI hub for model innovation, driving sustainable development, economic growth, and social inclusion while positioning itself as an AI research and application leader in Africa. The strategy provides a comprehensive framework to guide Kenya in harnessing the transformative power of AI, ensuring its deployment benefits all sectors of society while adhering to ethical principles and inclusivity. Developed through extensive consultations with government agencies, private sector stakeholders, academia, civil society, international partners and local communities, the strategy reflects a participatory approach that aligns with Kenya's national values and development goals while embracing diverse perspectives.

At the core of this strategy is Kenya's aspiration to adopt AI technologies and lead in AI model innovation, creating solutions tailored to its unique needs and those of the African continent. The objectives include establishing a robust governance framework for AI, enhancing adoption in key sectors such as agriculture, security, healthcare, education, and public service delivery, and fostering the growth of local AI ecosystems. Additionally, the strategy prioritises inclusivity to ensure underserved communities are not left behind and aims to position Kenya as the preferred regional hub for AI research, model development, and scalable innovation.

The strategy is anchored on three key pillars and supported by four enablers. The first pillar is AI Digital Infrastructure, which underscores the need for accessible and affordable AI infrastructure and a modernised national digital infrastructure for AI access and development. The second pillar is Data, which seeks the establishment of a robust sustainable data ecosystem for AI and innovation. The third pillar, AI Research and Innovation, is central to the vision of making Kenya a global leader in AI model development. It emphasises the drive to develop cutting-edge localised AI models and solutions through thriving local R&D, innovation and commercialisation.

The strategy is also premised on a foundation of several cross-cutting enablers. Governance is an enabler that focuses on harnessing and deepening the legal and regulatory framework to guide AI deployment, ensuring ethical use, data privacy, and public accountability by establishing an agile and dynamic governance framework. The second enabler, Talent Development, emphasises promoting AI literacy across all demographics, integrating AI into educational curricula, and developing a skilled workforce capable of advancing AI research and innovation. The strategy is also anchored on accelerating Investments from public and private sources strategically. Finally, the strategy aims to foster a culture of equitable, ethical and inclusive AI development and deployment.

The strategy also emphasises the importance of collaboration among stakeholders. Government institutions will provide regulatory and policy guidance, private sector actors will drive innovation and commercialisation, academia will advance research, and civil society will ensure that AI adoption is equitable and inclusive. Local communities will play a vital role in ensuring the relevance of AI solutions to societal challenges.

The strategy proposes a phased approach to ensure effective implementation. This begins with foundational investments in policy, infrastructure, and capacity building, followed by key milestones such as developing a national AI policy, establishing AI research and innovation hubs, executing pilot projects, and creating a monitoring and evaluation framework to track progress.

In conclusion, this AI Strategy is a bold vision to position Kenya as the leading hub for AI model innovation, creating tailored solutions for local challenges by prioritising governance, innovation, and capacity building. Kenya seeks to lead in driving equitable and sustainable AI adoption while ensuring that the benefits of this transformative technology reach all its citizens. The strategy is a call to action for stakeholders to collaborate in realising this vision and cementing Kenya's position as a stalwart participant in AI development.

1.   Introduction

The National Strategy on Artificial Intelligence (AI) for Kenya is written to harness the transformative potential of AI to drive the country's socio-economic development. This strategy is a proactive and ambitious roadmap to position Kenya as an African leader in AI by creating an action plan for a robust, inclusive, and sustainable AI-driven future. It ensures that emerging technologies are leveraged to achieve national priorities, enhance public services, and promote inclusive economic growth.

This strategy provides a comprehensive approach to ensure that Kenya can effectively navigate the complexities of AI development and adoption in our context, mitigate potential risks, and capitalise on the opportunities presented by AI technologies. This strategic plan will guide the development, deployment, and governance of AI in Kenya, the integration of AI into various sectors, building a skilled workforce and ensuring that AI contributes positively to the nation's growth and development while safeguarding the rights and well-being of its citizens by addressing regulatory and ethical considerations. This strategy centres on the Kenyan citizen: it lays a framework that ensures Kenyans are empowered by AI technology by providing them the tools and opportunities to participate actively in the digital economy, improve their livelihoods, and enhance their quality of life.

Artificial intelligence has revolutionised industries, driven innovation, and reshaped economies globally. AI technologies enhance productivity, enable smarter decision-making, and create new economic opportunities. AI is being used to solve complex problems, improve efficiency, and deliver personalised services.

For Kenya, the potential of AI is immense. As a leading hub for technology and innovation in Africa, Kenya is well-positioned to provide leadership and set the pace on how AI can be developed and applied to address our unique challenges and drive sustainable development. From increased agricultural productivity to improved healthcare delivery, financial inclusion, and better educational outcomes, by integrating AI into critical sectors, Kenya can achieve significant socio-economic gains, reduce inequalities, and improve the quality of life for its citizens. The National AI Strategy aims to unlock these potentials, positioning Kenya to maximise the benefits of AI, promoting innovation and economic growth while safeguarding our national interests, and ensuring ethical and inclusive AI practices that align with our values and development goals.

1.1.   Key Definitions

In developing a comprehensive Artificial Intelligence (AI) strategy, it is crucial to clearly understand the fundamental concepts and terminologies referenced throughout the document. This section defines key terms in this strategy document, including AI, machine learning, natural language processing, neural networks, and data privacy. By defining these terms, we aim to ensure a common language and shared understanding among all stakeholders, facilitating effective communication and collaboration as we advance our AI initiatives. Clear and consistent definitions will also help align our strategic goals with best practices and regulatory standards. Table 1.1 presents the key definitions.

Table 1.1: Definitions of key terms

Definitions	
Emerging Technologies	Emerging technologies are novel advancements in science and engineering that have the potential to reshape industries, societies, and economies through innovation
Artificial Intelligence	AI is a collection of emerging technologies that leverage machine learning, data processing, and algorithmic systems to perform tasks that typically require human intelligence. It encompasses a range of capabilities, including automated decision-making, language processing, and computer vision. In the Kenyan context, AI is a powerful tool for sustainable development, designed to assist and simplify human tasks, solve critical challenges, and drive sustainable growth.
AI Governance	A framework of policies, guidelines, and practices designed to ensure the responsible, ethical, and transparent development and deployment of AI systems. It includes oversight mechanisms, risk management, and accountability measures.
Machine Learning	A subset of AI that enables systems to learn and improve from experience without being explicitly programmed. It uses statistical techniques to allow computers to "learn" from data and identify patterns.
Neural Networks	Neural networks are computational models inspired by the structure and function of the human brain. They consist of interconnected nodes (neurons) that process and transmit information, enabling complex pattern recognition and problem-solving capabilities.
Large Language Models	Large Language Models are advanced AI models trained on vast amounts of text data that can understand, generate, and manipulate human language. They can also perform various language tasks, such as translation, summarization, and content generation.
Generative AI	Generative AI models are capable of creating new content, including text, images, music, or code, based on patterns learned from training data. These systems can produce original outputs that mimic human-created content.

Definitions	
Retrieval-Augmented Generation	Retrieval-augmented generation is a hybrid AI approach that combines information retrieval from a knowledge base with generative AI capabilities. By grounding generated content in verified information, it enables more accurate and contextually relevant responses.
Small Language Models	Small language models are compact versions of larger language models. They are designed to operate efficiently on less powerful devices or within constrained computational environments.
Algorithms	Algorithms are sets of rules or step-by-step instructions for solving problems and performing tasks. They form the fundamental building blocks of all computational processes.
Edge Computing	Edge computing is a distributed computing paradigm that brings computation and data storage closer to the location where they are needed. This improves response times and saves bandwidth. It enables data processing near the source of data generation rather than relying on a centralized data-processing warehouse.
Data Privacy	

1.2. Background

Kenya is a leading hub for technology and innovation in Africa, and artificial intelligence is increasingly playing a significant role in its digital landscape. Several initiatives have already been established in the country to leverage AI technology, supported by a robust digital infrastructure and driven by a combination of government support, private-sector innovation, development partners, and academic research.

As of March 2024, Kenya had 22.71 million internet users, translating to an internet penetration rate of 40.8% and a mobile penetration rate of 118% with 68 million mobile cellular connections. With a median age of 19, the country's young population is highly engaged with technology, seeking digital solutions in everyday life. Kenya has several start-ups leveraging AI technologies to enhance their offerings in various sectors and has already raised millions of dollars in venture capital investments.

In the private sector, homegrown large corporations in the telecommunications and banking sectors are also innovating with AI technologies to enhance customer experience, detect fraud, and improve operational efficiency. Global tech companies have also set up research centres in Kenya to tackle challenges in healthcare, agriculture, and financial services, among others. Recently, partnerships have been announced on AI infrastructure, including establishing a state-of-the-art green data centre and an East Africa Innovation Lab focused on broad AI digital skills training.

Kenya has made significant strides in developing its digital infrastructure. This significant uptake is a result of extensive investments in infrastructure and the proliferation of affordable internet services. The country's rapid adoption of Internet and mobile technologies has transformed its economic, social, and cultural landscapes. For instance, the government has also prioritised the development of digital government services, such as the eCitizen portal, which provides online access to various public services, enhancing efficient and accessible service delivery for all citizens.

Investments in terrestrial fibre networks have increased the reach of high-speed internet to various parts of the country, including previously underserved regions. Currently, the National Optic Fibre Network Backhaul Initiative (NOFBI), in partnership with the private sector and other key infrastructure partners, are targeting to deploy over 100,000 km of optic fibre by 2027. The first two phases of NOFBI successfully connected the 47 counties, with the current phase targeting to connect all 1,450 sub-counties. The leading mobile network operators continue to invest in expanding their coverage and upgrading their networks to support higher data speeds and better service quality. The country hosts several private data centres that provide reliable and secure data storage and processing capabilities. These facilities could be upgraded to support AI applications by offering robust cloud computing resources and data management services.

Cloud services adoption is accelerating in Kenya, driven by recent announcements by global service providers offering scalable and flexible cloud solutions, and opening offices locally. These services enable businesses and developers to deploy AI applications efficiently, leveraging cloud-based infrastructure for machine learning, data analytics, and other AI-related tasks.

Kenya is actively leveraging AI to enhance education and workforce development. Various initiatives and programs are in place to equip citizens with the necessary skills to thrive in a digital economy. Kenyan universities offer data science, machine learning, and AI courses, providing students with the theoretical and practical knowledge needed to excel in AI-related fields.

Kenya is emerging as a significant hub for AI research and development in Africa. A growing number of initiatives are focused on using AI to address local and regional challenges. The country's AI research activities span various sectors, including agriculture, healthcare, financial services, and education, with an emphasis on creating solutions tailored to the unique needs of the African context.

Natural Language Processing (NLP) is a focus area driven by Kenya's rich linguistic diversity, with research aimed at developing solutions for local languages with chatbots that can interact through various local languages. Other emerging research efforts aim to apply computer vision to practical applications in agriculture, such as crop disease detection, and in healthcare, particularly medical imaging analysis. Kenya's leadership in mobile money has also spurred

substantial research into Machine Learning for financial inclusion, aiming to broaden access to financial services through innovative AI applications.

Additionally, several research centres are conducting ongoing research into the societal impacts of AI and developing robust ethical guidelines to ensure responsible AI deployment within the Kenyan context. Therefore, Kenya is well-positioned to contribute significantly to global AI research, particularly in developing AI solutions for emerging markets. The future of AI research in Kenya looks promising, with increasing investment, growing international partnerships, and a rising number of young Kenyans pursuing advanced studies in AI.

Despite these exciting emerging opportunities and the potential for AI to revolutionise the Kenyan economy, there are a number of growing concerns, particularly regarding the governance of the technology and the ability of Kenyan citizens to fully participate in and benefit from AI adoption across various sectors.

Kenya's journey towards becoming an African and global leader in AI development and adoption requires creating an enabling environment that fosters innovation while ensuring responsible use. A balanced approach is needed to unlock AI's transformative potential in addressing our most pressing national challenges while safeguarding every Kenyan citizen's interests and rights.

An enabling environment for AI in Kenya means cultivating conditions where creative and innovative AI-driven solutions can flourish. It involves establishing frameworks that encourage the development, testing, and deployment of AI technologies tailored to our unique context and ensure that Kenyan citizens can directly benefit from these advancements, experiencing tangible improvements in their daily lives and livelihoods.

However, this vision of an AI-enabled Kenya is not without boundaries. There is a need to strike a delicate balance between fostering innovation and implementing necessary safeguards. Protective measures are required to prevent the exploitative use of AI technologies and ensure that the benefits of AI are equitably distributed across Kenyan society. By doing so, Kenya aims to create an AI ecosystem that is not only innovative but also ethical, inclusive, and aligned with its national values and aspirations.

This strategy espouses this approach to harnessing AI as a tool for national development and social progress while vigilantly guarding against potential misuse or unintended negative consequences.

1.3. Rationale for a National AI Strategy

Kenya envisions becoming a leading force in the African AI landscape by fostering a robust, diverse, and inclusive AI ecosystem. This strategy focuses on creating an enabling environment for responsibly developing quality AI applications that leverage local datasets and talent, ensuring safety, responsibility, and alignment with international human rights standards.

Key Concerns Regarding AI in Kenya

Kenya's AI strategy aims to address the following key concerns of its citizens by ensuring that AI technologies are developed and deployed responsibly and inclusively:

- **Labour Disruptions and Economic Impact**

There is a great opportunity to leverage AI and emerging technologies to drive economic growth and create new employment and skills opportunities. However, the potential for AI to disrupt the job market is a major concern, especially given the unemployment challenges currently experienced by younger generations. Many fear that AI-driven automation might lead to job losses, particularly in sectors like manufacturing, agriculture, and services, where many Kenyans are employed.

- **Digital Divide and Inclusive Development**

There is merited concern about uneven access to digital and AI technologies, including the broader digital divide between urban and rural areas and marginalised communities. Many Kenyans worry that only a small segment of the population will benefit from AI, exacerbating existing social and economic inequalities and further widening the digital divide.

- **Data Sovereignty and Privacy**

With the increasing use of AI technologies that require vast amounts of data, there is a fear of data misuse, unauthorised access, and a lack of control over personal information. Emerging concerns about data colonialism and extractive practices by big tech companies are widespread.

- **Ethical AI, Human Rights and the Promotion of Public Trust**

Significant concerns about the ethical use of AI exist, including issues of bias, discrimination, perpetuation of existing inequalities, and potential misuse for surveillance and other invasive purposes. Public trust in AI technologies and their developers is also currently lacking, leading to scepticism about the intentions behind AI deployment. There is also a need to ensure that AI development respects human rights and aligns with Kenyan values.

- **Regulatory Preparedness**

The existing regulatory and legal frameworks to address the unique challenges AI technologies pose are inadequate. Without coherent guidelines and frameworks, AI development might outpace the ability to govern it effectively, leading to potential misuse and harm.

- **Local Innovation and Competitiveness**

Kenyans want to ensure they are not just consumers but also producers of AI technologies that can compete in the global markets. However, with sufficient investment in local AI development and education, Kenya may stay caught up in the global AI race. There is also a concern that this could result in brain drain as talented individuals seek opportunities abroad.

- **Public Sector Efficiency and Service Delivery**

Unbiased adoption of AI in the public sector is necessary to ensure equitable and efficient service delivery without discrimination to all Kenyans. AI has the potential to improve how the Kenyan government delivers services to its citizens.

- **Sustainable (AI) Development**

There needs to be a balanced AI development with the reality of environmental sustainability. AI systems, such as large language models and data centres, require significant energy and could have long-term environmental impacts on Kenya's natural resources.

Strategic Importance of AI to Kenya

AI presents the following value propositions to Kenya:

- **Economic Growth:**

  AI has the potential to significantly boost Kenya's GDP by improving efficiencies and creating jobs across various sectors. For instance, AI can enhance agricultural productivity, reduce healthcare costs, and improve transportation systems. The government can anchor demand for AI solutions, stimulating innovation and adoption in the private sector.

- **Public Sector Efficiency:**

  AI can improve government service delivery, enhance decision-making, and effectively manage costs. AI-driven solutions can also streamline processes, reduce bureaucratic inefficiencies, and enhance the transparency and accountability of public services.

- **International Competitiveness:**

  The country can attract international investments and collaborations by positioning Kenya as a primary source market for localized emerging technologies. This can lead to the development of home-grown AI solutions using local data and talent, fostering innovation and creating competitive advantages for Kenyan companies on the global stage.

- **Protection against negative impacts of externally developed AI solutions:**

  By developing local AI capabilities and frameworks, AI solutions can be developed within Kenyan values and contexts, rather than solely relying on external solutions that may not align with the country's unique needs and challenges. This approach positions Kenya to harness AI's benefits while maintaining control over how these technologies impact the society and economy.

- **Job Creation and Skills Development:**

  AI can create new jobs in various sectors, from tech and data science roles to AI-enabled agriculture, healthcare, and education services. Developing AI-specific curricula and training programs will equip the workforce with the necessary skills to thrive in a digital economy, address the existing skills gaps and prepare Kenya for future technological advancements.

By addressing these key areas, Kenya's National AI Strategy aims to create an enabling environment for AI development that drives economic growth, enhances public services, and promotes inclusive and sustainable development. This strategic approach ensures that AI contributes positively to Kenya's future while safeguarding the rights and well-being of its citizens.

1.4.   Methodology

To formulate this strategy, the following mixed methods methodology was taken to ensure that the resulting document was comprehensive, inclusive and contextually relevant.

Literature Review and Environmental Analysis

A detailed literature review was conducted to examine global and regional AI strategies, policy documents, and governance frameworks. This review aimed to establish best practices and benchmarking mechanisms that could inform the development of Kenya's AI strategy. The review provided insights into the context and definitions, an environmental analysis to assess Kenya's AI landscape, and foundational considerations specific to the national context. A key component of this phase was stakeholder mapping, designed to identify and understand the roles, responsibilities, and influence of key stakeholders, including implementers and those impacted by the strategy.

This literature review applied an African lens to frame the AI ecosystem. Drawing from normative stakeholder theory, the methodology identified stakeholder categories based on normative claims emphasising fair economic opportunity, political equality, and authenticity. This approach integrated ethical considerations into the strategy, prioritising equitable outcomes and ensuring that diverse perspectives were included in the conceptualization of responsible AI. The findings informed the development of preliminary strategy chapters and guided subsequent data collection and stakeholder engagement activities.

Primary Data Collection

Data collection involved extensive primary research through key informant interviews (KIIs) with government representatives, implementation and development partners; focus group discussions (FGDs) with Key AI stakeholders from industry, academia and civil society; expert consultations with AI thought-leaders; townhall sessions with tech and innovation communities within county hubs; and a public survey administered online. Research instruments, such as FGD guides and KII protocols, were designed based on the findings from the literature review and stakeholder mapping. These instruments focused on gathering insights on strategic themes, development priorities, and potential risks and concerns related to AI adoption.

Stakeholder Engagement

A large group of AI stakeholders was initially engaged through a series of three in-person workshops to establish a roadmap for the strategy development process including setting the vision, the mission, guiding principles and key topics for the strategy to consider. From these large groups a smaller working group was voted by their peers as representatives of the broader AI community. The strategy working group, consisting of thematic experts, played a pivotal role in guiding the strategy development process. Through four in-person workshops and two virtual sessions, the working group contributed to thematic discussions, validated data findings, and provided critical feedback. In these workshops, the working group supported the strategy formulation team to identify thematic strategy priorities and an implementation framework for the strategy. Meetings were structured around presentations with members contributing written

input and recommendations throughout the sessions. This iterative feedback loop ensured that the working group's expertise was fully integrated into the evolving strategy.

Synthesis and Drafting of the Strategy

Data collected during the above phases of the strategy underwent qualitative and quantitative analysis, including thematic and content analysis. The analysis provided key evidence which informed the drafting of a SLOC (Strength, Limitation, Opportunities and Challenges) analysis for AI in Kenya. It is on the basis of this SLOC that strategic options, decisions, and initiatives were developed and proposed for implementation through the strategy. Figure 1.1 shows a summary of the methodology described above.

Validation of the Strategy

The strategy was presented at two stakeholder workshops, first with public sector stakeholders and second one with members of the Kenyan AI ecosystem. These workshops were held to validate the methodology used to develop the strategy, the vision, guiding principles, key themes and pillars. The stakeholders engaged were largely in agreement with the strategy as presented.

Figure 1.1: Summary of the methodology
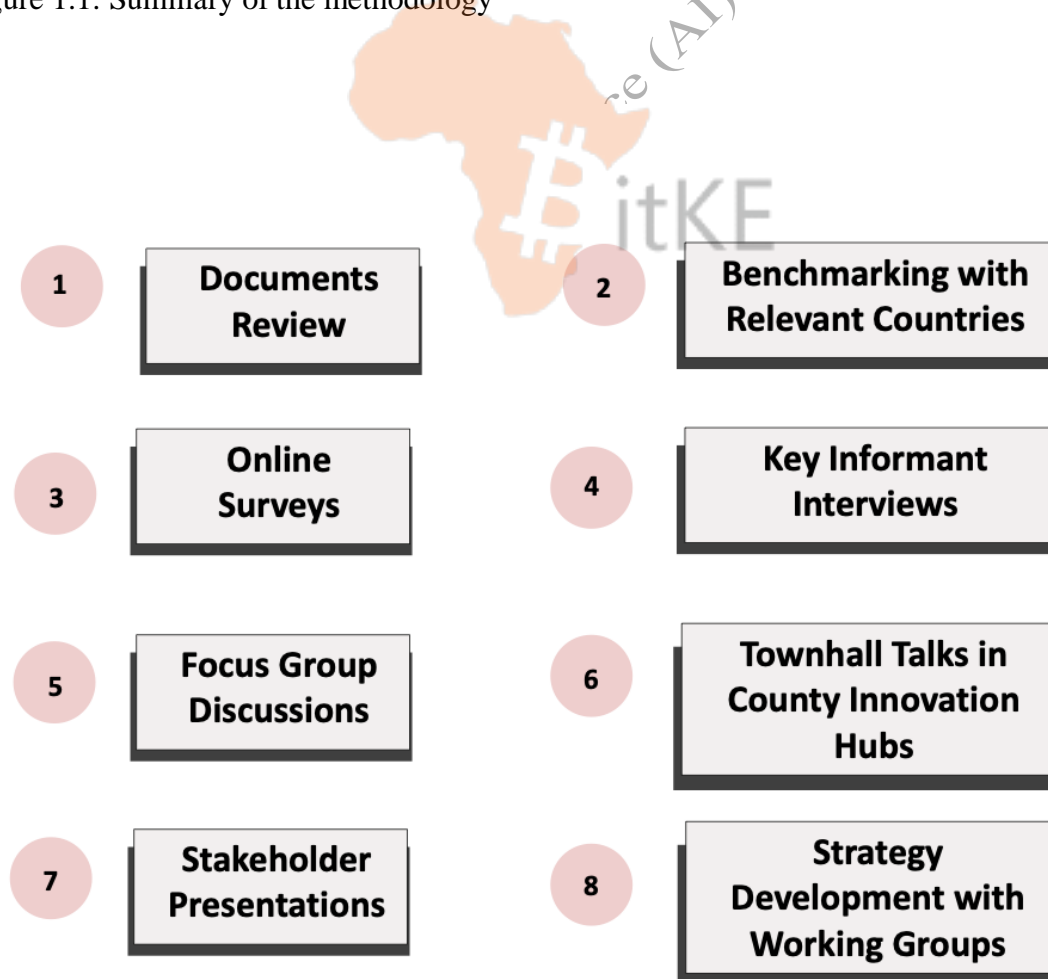
1.5.   Scope of the AI Strategy

This strategy aims to be comprehensive, addressing multiple facets of AI development, adoption, and governance. The strategy will create a holistic framework that creates an enabling environment for AI innovation and adoption but also ensures that this technological revolution benefits all sectors of society while adhering to ethical principles and national values. The strategy encompasses the following key areas:

1. **AI Digital Infrastructure:** The strategy provides strategic options and initiatives that enable the development of the technological and supporting infrastructure needed to support local AI growth.

2. **Data:** The strategy addresses the need for a robust and sustainable data ecosystem framework as a critical input for developing contextual AI models and solutions.

3. **Research and Development:** Given Kenya's unique position as a potential provider of local AI solutions to address development challenges, this strategy includes options to foster a robust AI R&D ecosystem.

4. **Talent:** The strategy addresses the critical need for equitable access to AI through developing AI skills across all levels of society.

5. **Governance:** The strategy provides a roadmap for developing initial governance frameworks for responsible AI development and use.

6. **Investment:** A significant outlay of capital and investment is needed to establish an AI industry. The strategy addresses different options and avenues of financing its implementation.

7. **Ethics, Equity, and Inclusion:** The strategy addresses how Kenya can ensure that AI development is ethical, inclusive, and respectful of human rights.

2. AI and Emerging Technologies

2.1. Definitions of Emerging Technologies

Emerging technologies are innovative advancements in various fields that are in the process of development or are newly introduced. These technologies have the potential to dramatically benefit industries, societies, and individuals by offering new ways of doing things, increasing efficiency, and improving general quality of life.

Emerging technologies encompass a wide range of innovations that are at the forefront of development and have the potential to disrupt existing systems and processes. These technologies are distinguished by their novelty, potential for significant impact, and rapid evolution. Examples of emerging technologies include blockchain, Internet of Things (IoT), virtual reality, 3D printing, and AI. These technologies are often interdisciplinary in nature, drawing from fields such as computer science, engineering, biology, and materials science to push the boundaries of what is possible. One of the most prominent emerging technologies of our time is Artificial Intelligence (AI), which has been gaining momentum and transforming various sectors due to its ability to mimic human intelligence and perform tasks that typically require human intervention.

2.2. Relationship between emerging technologies and AI

AI has emerged as a transformative technology with the potential to revolutionise industries and redefine how we interact with technology. AI refers to the simulation of human intelligence processes by machines, including learning, reasoning, problem-solving, perception, and language understanding. AI systems are designed to analyse data, recognize patterns, and make decisions with minimal human intervention.

In the context of Emerging Technologies, AI is a foundational technology that underpins and scales the capabilities of other emerging technology. It can be positioned as a transformative tool and a core enabler that seamlessly integrates \ith other emerging technologies, driving innovation and solving complex problems in different domains. As AI accelerates technological progress, it is simultaneously improved by advances in these connected fields thus supporting the development of 'new innovation'.

AI amplifies the potential of emerging technologies such as the Internet of Things (IoT), blockchain, edge computing, augmented reality, biotechnology and quantum computing. AI's core ability to produce, process and extract meaningful patterns from complex data makes it indispensable to these emerging technologies that are heavily reliant on data. For example, AI's ability to process data locally on edge devices and its integration with 5G enables real-time decision-making for applications such as autonomous vehicles or other services such as telehealth that would require low latency. In smart cities, AI coordinates IoT devices, blockchain networks, and renewable energy systems to optimise 'smart' homes, urban infrastructure and promote sustainability.

Furthermore, AI's capacity to automate and optimise processes enhances the efficiency of other emerging technologies. In 3D printing and drug discovery, AI can refine designs and predict the behaviour of materials, improving production efficiency and resource optimisation.

Similarly, in cybersecurity, AI automates threat detection and response, providing robust protection for other emerging technologies such as IoT and blockchain networks.

AI capabilities including computer vision and natural language processing play a vital role in making other emerging technologies more accessible and user-friendly through natural interfaces. For instance, in augmented and virtual reality (AR/VR), AI can personalise experiences by adapting content to user preferences and behaviours.

2.3.   Why AI?

Artificial Intelligence stands at the forefront of the Fourth Industrial Revolution, serving as the key orchestrator that will fundamentally reshape how we live, work, and interact. As a transformative technology, AI's impact extends far beyond the tech sector, promising to revolutionise healthcare, agriculture, manufacturing, finance, education, and virtually every aspect of our economy and society. Its ability to process vast amounts of data, recognise patterns, and generate insights makes it an essential driver of innovation and productivity across multiple sectors. AI's transformative power lies in its role as a catalyst for other emerging technologies, including robotics, Internet of Things (IoT), blockchain, and quantum computing.

This strategy focuses on Artificial Intelligence as a foundational emerging technology, with the core assumption that the central tenets and themes of the strategy including data, governance, ethics and inclusion, talent development and digital infrastructure provide a robust implementation blueprint that can be extended and applied to support a growing emerging technology sector in Kenya.
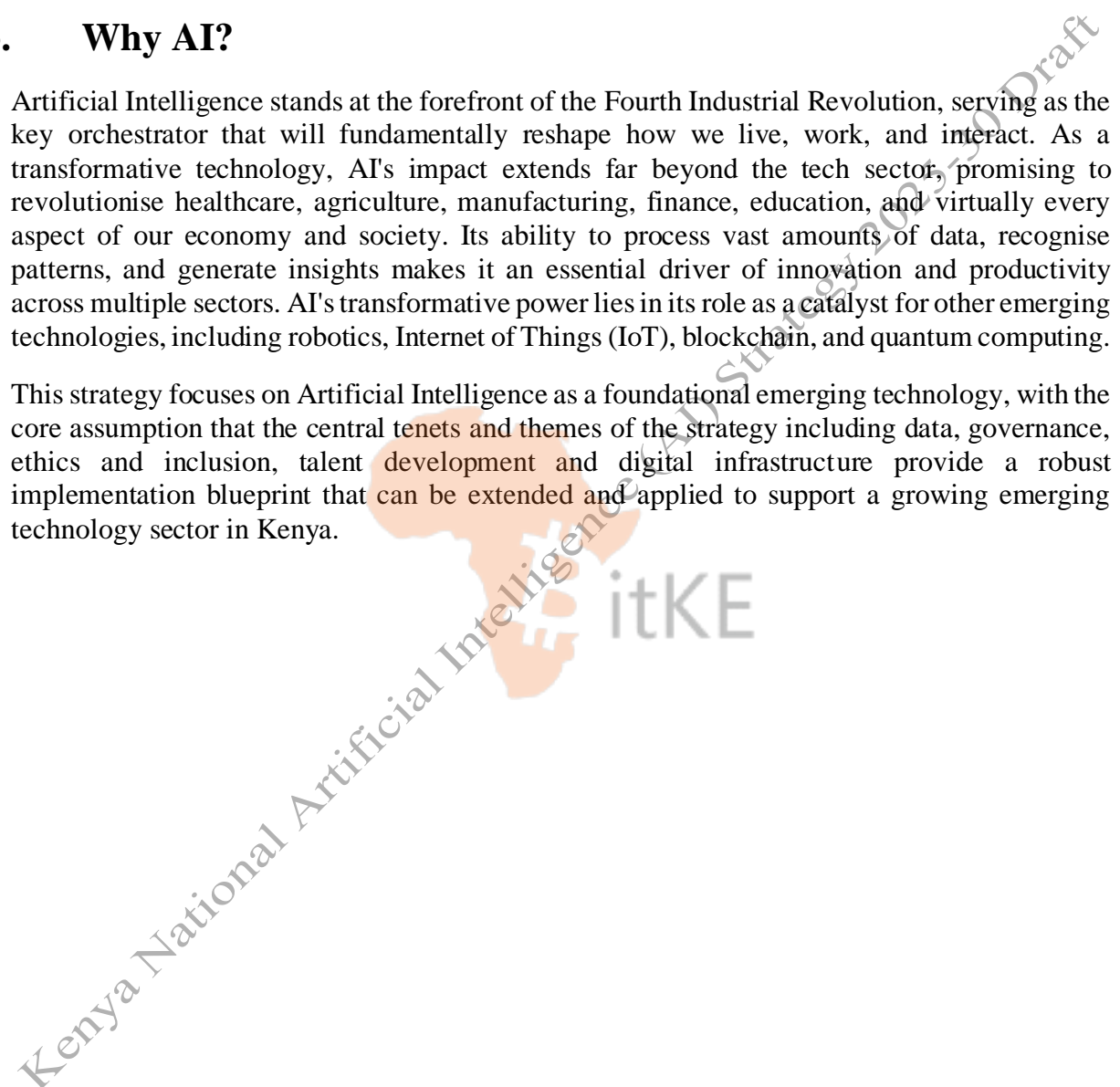
3. Environmental Analysis

The rapid evolution of the AI field continues to inform how digital ecosystems adapt to technology whilst underscoring the overall impact on different economic sectors. An in-depth environmental analysis portrays how the digital landscape evolves, considering how AI is being leveraged. Relying on existing data and publicly available use cases, the environmental analysis provides valuable insights not only into the global AI landscape but also the regional and national AI landscapes, allowing for the identification of stakeholders, opportunities, identification of best practices, areas thriving in the adoption of AI, risks, challenges, technological investment, regulatory preparedness and growth of the AI landscape through innovation and research. The environmental analysis provides a critical lens through which changes and challenges can be identified, areas of improvement and the dynamics through which Kenya can have a competitive edge in the technological landscape regionally and internationally.

3.1. Social and Economic Environment

Global AI Trends

Global developments in AI and emerging technologies are shaping the future of various industries and societies worldwide. The World Economic Forum notes that the world's five leading economies, the US, China, Japan, India, and Germany, have vested interests in the global AI ecosystem, with the US and China leading, characterised by the highest percentages in venture capital investment in AI across different sectors. This has led to a new emergent technology sub-sector, with projections by PwC suggesting AI could contribute up to $15.7 trillion to the global economy by 2030. Majority of these gains are expected from enhanced productivity and increased consumer demand for AI-driven product innovations.

Other global trends on AI defining the social and economic environment include:

- *Increased Infrastructure Investment:* In 2023, investments into the GPU market crossed into the $1T cap club due to high demand from nation-states, startups, big tech and researchers alike. Microsoft carved out an annual spend of $50 billion for AI infrastructure in 2023 and beyond, a yearly investment amount unmatched by any other company worldwide.

- *Increased Innovation Spending:* Generative AI apps have had a breakout year across image, video, coding, voice or co-pilots for everyone, driving $18B of VC and corporate investments.

- *Labor Market Transformation:* The integration of AI into the workforce is expected to cause significant disruptions. According to the IMF, around 40% of global jobs are exposed to AI, with advanced economies facing a higher risk due to the potential automation of high-skilled roles. This raises concerns about job displacement and the need for large-scale reskilling programs.

- *Global Inequalities:* AI's rapid advancement is likely to exacerbate existing inequalities, both within and across nations. In advanced economies, AI may benefit

high-income workers disproportionately, while those in lower-income or less skilled roles may face greater job insecurity. Emerging markets, with less developed digital infrastructure and workforce capabilities, could struggle to leverage AI's benefits, potentially widening the global inequality gap.

- *Ethical Concerns on AI*: As AI becomes more integrated into various aspects of life, public sentiment towards the technology is increasingly cautious. AI-driven misinformation and disinformation campaigns created by 'deepfakes', concerns about privacy and online safety on social media platforms, are eroding public trust in established institutions and processes such as elections. According to the Global Index on Responsible AI, only 38 countries assessed have taken steps to address the safety, accuracy and reliability of AI systems.

Regional Context

Recent global shocks including the COVID 19 pandemic and geopolitical tensions such as the war between Russia and Ukraine have severely impacted Africa's economic growth with real GDP growth dropping from 4.1% in 2022 to 3.1% in 2023. African economies are projected to rebound, with 9 of the top 20 fastest growing economies from the continent. However, there still remain challenges to achieving Africa's development goals and economic and social agendas as laid down in Agenda 2063 and the Maputo protocol. These include political unrest, climate shocks and high external debts. According to the World Bank, in 2023, a third of the continent's population was still living in extreme poverty with energy and transportation bottlenecks limiting productivity and efficient harnessing of natural resources. The African population is youthful with 12 million youth expected to enter the labour force each year for the foreseeable future with a risk of high unemployment levels.

The AfDB in its 2024 economic outlook identifies that Africa needs to close an annual financing gap of over US \$402 billion and invest in key areas such as education, energy and productivity-enhancing technology and innovation to fasttrack the achievement of its development goals. AI is one of these technologies and it is projected to generate \$1.2 trillion economic value in Africa by 2030 contributing a 5.6% increase to the continent's GDP by 2030 through financial inclusion, employment creation, increased agricultural productivity and enhanced public service delivery. There are a number of regional initiatives embracing the AI opportunity.

A [mapping exercise](#) conducted by the Center for Intellectual Property and Information Technology (CIPIT) on AI applications in Africa identified 301 AI solutions in 27 countries and 41 sectors. These AI application types include data analytics, chatbots, decision support tools, and diagnostic tools in sectors including corporate services, health, education, agriculture, and finance.

Some of the major initiatives contributing to a growing AI ecosystem on the continent include:

- [Masakhane](#) - a grassroots organisation of researchers and innovators working collectively on NLP research in African Languages.

- [Lacuna Fund](#) - a collaborative initiative funding and providing resources for data scientists, researchers, and social entrepreneurs to create and share labelled training datasets for AI.

- [AI4D](#) - an initiative by a network of funders that partners with Africa's science and policy communities to leverage AI through high-quality research, responsible innovation, and talent strengthening.

- [FairForward](#) - An initiative by GIZ supporting knowledge transfer on AI, improved access to training data and AI technology and the development of policy frameworks for ethical AI

National Context

There are a number of start-ups and solutions signifying an emerging AI-driven economy and sector in Kenya. Research shows that AI utilisation in Kenya is more pronounced in the key sectors of health, education, agriculture, and finance. AI applications are utilised across sectors through varied application types, i.e., Chabots, decision support, and data analytics tools.

In finance, AI-powered solutions have facilitated financial services to previously underserved populations, promoting financial inclusion and access to credit. AI tools have enhanced crop monitoring, yield prediction, and agricultural pest management, leading to increased productivity and sustainable farming practices. These AI-driven initiatives have improved operational efficiency and contributed to Kenya's overall economic growth and competitiveness in the global market. AI development by startups and large technology companies fosters innovation and job creation for Kenya's population, further underscoring AI's transformative potential in driving economic efficiency, competitiveness, and sustainable growth in Kenya's evolving digital economy.

3.2. Technology Environment

Global Context

The Global AI Readiness Index 2024 notes that the United States leads China, the EU, and the UK as the leading source of top AI models. Notably, in 2023, 61 AI models originated from US-based institutions, far outpacing the European Union's 21 and China's 15.

At a firm level, there were notable advancements in AI research, both proprietary and open source; advancements in model development especially in LLMs and diffusion models, with multimodality becoming a new frontier; we witnessed renewed concerns about data, especially human generated data and synthetic data; and also increased collaborations between governments, academia and the private sector.

African Context

A few key AI initiatives are transforming Africa's technological landscape. There are notable efforts focused on strengthening African AI and machine learning communities. Many continental forums, workshops and conferences, provide opportunities for learning, networking, and collaboration among African AI practitioners.

Several big tech companies have set up research labs across the continent with several labs domiciled in Kenya. The research labs focus on key sectors of development such as health, transportation, the environment, etc.

National Context

Digital Infrastructure and Technology Landscape

Kenya has made major strides in deploying digital infrastructure, and in particular fiber and mobile network infrastructure. As of early 2024, Kenya had more than 65 million mobile connections. The government of Kenya over the last 15 years prioritised the development of the digital landscape through investments in terrestrial fibre networks and in the digitization of government services, such as through the eCitizen portal, which provides online access to various public services, enhancing efficiency and accessibility for citizens. Kenya's data centre infrastructure is also rapidly evolving to meet the demands of a growing digital economy. The country hosts several state-of-the-art data centres that provide reliable and secure data storage and processing capabilities. The availability of data, internet coverage and a population that significantly conducts commerce and other services digitally has created a supportive environment for different startups and organisations who either develop or deploy solutions that leverage artificial intelligence technologies.

AI technology ecosystem

Technology and developer communities have played a crucial role in the areas of software development and particularly in machine learning and data science, which are key areas that contribute to AI development. The developer communities use different online or physical forums to hold educational workshops, share experiences and learn about the various technologies. Different tech communities have been set up locally in Kenya, and most are still active. Some are listed here, https://devs.info.ke/

Kenyan leading universities and tertiary institutions of higher learning offer courses in Artificial Intelligence. Additionally, local organisations have been at the forefront of partnering with government agencies to work on projects aimed at improving data quality towards application of LLM's.

Research and Development

Kenya is emerging as a hub for AI research and development in Africa, with a growing number of initiatives focused on leveraging AI to address local and regional challenges. AI research activities span developing AI models for predictive analytics, natural language processing, computer vision, and more. These activities are often supported by collaborations between academic institutions, private sector companies, and international organisations, fostering a vibrant research ecosystem. Academic institutions have set up labs and research centres which conduct research in various areas of AI and machine learning.

Other non-academic research institutions have also been active in the AI research space, receiving interest funding from development partners to tackle areas where AI can be useful for development such as health, agriculture, commerce, etc.

A review of existing tech communities in Kenya paints a clear picture of the available skills, interests, and initiatives undertaken by practitioners operating in Kenya to grow and advance knowledge in different tech sectors, with AI being one of them. The presence of tech communities has further showcased the high level of tech skills available in the country, which has resulted in global big tech companies setting up different research and product-building centres based in Kenya. Many of these big tech establishments in Kenya have been a first within Sub-Saharan Africa.

3.3.   Political Environment

Global Context

The world has divided into clear regulatory camps, but progress on a consensus on global governance remains slower. Some tensions arising within the AI sector include from the chip wars with the US mobilising its allies, and the Chinese response remaining patchy. Export controls rate limit advanced chip sales to China, but major chip vendors create export control-proof alternatives. Countries such as the UK government have taken an approach towards improving public service delivery by establishing an AI incubator. Finding a balance between fostering innovation and regulating risks associated with AI technologies remains a key challenge for jurisdictions worldwide. Countries are exploring ways to promote innovation while safeguarding fundamental rights, privacy, and security in AI. International summits, declarations, and agreements, such as the G7 Hiroshima Process International Guiding Principles and the Bletchley Declaration, demonstrate global collaboration in addressing the challenges and opportunities presented by AI technologies. These initiatives aim to foster cooperation and coordination in AI governance efforts.

Developed economies actively craft comprehensive AI governance policies to balance innovation with risk regulation. This is seen through governance practices of the EU, UK, and US, reflecting a growing recognition of the need for ethical AI usage characterised by the different approaches to AI governance, human-centric approaches, risk-based approaches, or the safety-based approach.

Regulatory bodies like the Federal Trade Commission (FTC) in the United States of America have taken enforcement actions against tech companies like Amazon concerning privacy violations related to AI technologies. The cases brought against Amazon's Alexa App and Ring cameras require the deletion of certain data and prohibit the use of specific information for model training.

Countries, organisations, international and regional bodies are increasingly focusing on developing ethical AI frameworks to ensure the responsible and transparent use of AI technologies. Initiatives such as the OECD AI Principles, UNESCO's Recommendation on the Ethics of AI, the AU Continental AI Strategy, and the EU AI Act aim to establish ethical AI development and deployment guidelines.

Efforts are underway to harmonise AI regulations across borders to facilitate international cooperation and ensure consistency in AI governance. Multilateral organisations like the

OECD, UNESCO, and the EU are working on frameworks to address global challenges posed by AI technologies.

Regional Context

A number of African countries have formulated national AI strategies to drive innovation, economic growth, and societal development. These strategies outline priorities for AI research, development, readiness measurement and deployment while emphasising ethical considerations and human-centric approaches to AI governance.

Further, national AI strategies have become the foundational starting point for AI governance in the African continent, where there is a notable increase in the development of national AI strategies, which is likely to grow in the coming years, noting the ongoing initiatives to guide AI development highlighting a commitment to integrating AI into National development plans. Developed and developing countries emphasise the importance of ethical AI practices, especially for African nations, mirroring trends in developed countries where ethical considerations are centred in AI policy discussions.

Additionally, there is a growing trend towards regional cooperation in AI governance. Adopting the AU Continental Strategy on AI regionally points towards a continental focus on AI governance. In both developed economies and African nations, the private sector increasingly adopts AI solutions across various industries, such as finance, healthcare, and agriculture. The private sector continues to play a significant role in driving AI innovation and efficiency, which is seen to be essential to overall economic growth. Key opportunities will derive from integrating AI into national development plans, presenting opportunities for economic growth, innovation and improved public service delivery, further contextualising areas of focus in AI governance. Regulatory harmonisation presents a challenge for African countries, noting the varied approaches, i.e. risk-based, human-centric, and safety-based approaches, bringing in the importance of international cooperation in creating cohesive development practices and frameworks.

The EAC member countries have also established foundational frameworks where data sharing and data protection is concerned, such as in trade, health, data protection, education standards and financial services. These foundations become near-future enablers for harmonised AI regulations.

National Context

Kenya has shown political will for advancing AI adoption by prioritising emerging technologies and AI in the National Digital Economy Blueprint, where AI is referenced as a tool for driving innovation-driven entrepreneurship and the Kenya National Digital Master Plan (2022-2032), which notes the importance of a national strategy on AI and key focus areas that need to be addressed by the National AI strategic plan. Kenya also made commitments to building an AI-powered Smart City, the Konza Technopolis currently houses the country's data centre. Additionally, the Technopolis authorities signed an MoU with a cyberschool to facilitate training of Kenyan youth on AI and cyber security while the African Centre for Technology Studies (ACTS) is planning to establish an AI centre of excellence at the Technopolis.

Other agencies, such as the Office of the Data Protection Commissioner, have embraced AI in their operations such as their AI-powered Chabot, Linda Data which provides citizens with a platform to interact with the chatbot to address data protection queries, raising awareness which can ultimately be used to scale the citizen information repository whose effective use can inform the ethical AI framework for the country. The National Statistical Organization, the Kenya National Bureau of Standards, is committed to expanding the mandate of data and evidence generation through its recently launched data centre.

3.4.   Legal and Regulatory Environment

Global Context

The rapid advancement of Artificial Intelligence (AI) technologies has prompted the development of global policy and legal regulatory frameworks to ensure their ethical and responsible use. These frameworks vary by region and organisations but share common goals, including promoting innovation, protecting human rights, governing administration, and mitigating risks associated with AI. The Global AI Law and Policy Tracker offers an extensive overview of AI governance frameworks across various countries and jurisdictions. The AI Equality Initiative (AIEI) has established a community of practice towards empowered ethical AI, which considers a just, responsible, and inclusive AI global ecosystem. The AIEI proposes a global AI observatory (GAIO) model to inform policy development.

Though slow, in comparison between 2022 and 2023 saw a substantial rise in the number of countries with laws that include the term "AI," growing from 25 countries in 2022 to 127 in 2023, an indication of the growing recognition of the need for regulatory frameworks and AI governance. Additionally, diverse legislative approaches are being pursued. The European Union (EU) for instance, has been at the forefront of building a robust AI regulatory framework, the EU AI Act. This Act was expected to come into force on 1st August 2024 across all the 27 EU member states. The EU AI Act distinctively takes a risk-based approach towards regulating AI. This approach imposes regulatory burdens only when an AI system is likely to pose high risks to fundamental rights and safety. The Act establishes a four-tiered risk framework, which classifies risk into four categories: unacceptable risks that lead to prohibited practices, high risks that trigger a set of stringent obligations, some of which include conducting a conformity assessment, limited risks which relate to transparency obligations, and minimal risks where codes of conduct by stakeholder are encouraged regardless of whether established within EU or third country.

The US, on the other hand, has so far issued an executive order on the Safe, Secure and Trustworthy Development and Use of AI, as well as the Blueprint for an AI Bill of Rights, which sets out five principles and associated practices to guide the design, use, and deployment of automated systems to protect the rights of the American public. The UK takes a more safety-based approach towards the governance of AI, fortified during the UK AI Safety Summit 2023, which advanced the establishment of AI safety Institutes, global commitments by tech-companies united to establish science and empirically led guidelines, standards, and collaborations. The Bletchley Declaration, a product of the summit, advocates for advancing the need to identify AI risks and inform risk-based policy development.

In Colombia, initiatives like the AI Expert Mission and AI National Strategy Policy have been implemented. The United States has released multiple frameworks and guidelines to maintain its leadership in AI research and control government use of AI. The US Federal Trade Commission (FTC) has issued guidelines to prevent biassed or unfair AI use, while Singapore's PDPC offers advisory guidelines to support AI implementation while maintaining data protection. In December 2023, the EU AI Act was finalised, introducing harmonised rules for AI in the EU market with a risk-based approach, prohibiting specific AI systems, and imposing requirements and transparency rules on high-risk systems. Australia's 2021 AI Action Plan aims to build AI capability and promote trusted, secure AI technologies.

Privacy enforcement authorities (PEAs) across various jurisdictions have taken significant actions in response to privacy concerns surrounding AI technologies, particularly generative AI like OpenAI's ChatGPT. In Canada, the Federal Office of the Privacy Commissioner (OPC) and provincial privacy authorities launched an investigation into ChatGPT for processing personal data without consent. This investigation was expanded to include assessments of OpenAI's compliance with transparency, access, accuracy, and accountability principles. Similarly, Italy's PEA (Garante) temporarily blocked OpenAI from processing personal data due to potential GDPR violations, which included issues related to transparency and data protection by design. Japan's Personal Information Protection Commission (PPC) warned OpenAI about collecting sensitive data without consent, emphasising the need for clear notices in Japanese about data collection purposes.

In Korea, the Personal Information Protection Commission (PIPC) fined OpenAI for not notifying a data breach and identified multiple non-compliance issues with the country's Personal Information Protection Act (PIPA), including the lack of clarity in the controller-processor relationship and absence of parental consent for children under 14. The UK's Information Commissioner's Office (ICO) has also been active, fining Clearview AI for unauthorised use of facial images and issuing enforcement notices to Snap Inc. regarding the privacy risks posed by its generative AI chatbot 'My AI'. In the United States, the Federal Trade Commission (FTC) has taken multiple enforcement actions involving AI, including cases against Rite Aid for biased facial recognition technology and Amazon for violations related to its Alexa App and Ring cameras.

Internationally, the European Data Protection Board (EDPB) formed a task force to enhance cooperation and information exchange in handling complaints and investigations into OpenAI and ChatGPT at the EU level. The Ibero-American Network of Data Protection (RIPD) initiated a coordinated action on ChatGPT compliance among its member countries. These actions underscore the commonalities in legal obligations regarding the processing of personal data by generative AI and highlight the importance of international cooperation in enforcing privacy laws.

The OECD is also revising its Recommendation on Cross-Border Cooperation in the Enforcement of Laws Protecting Privacy to strengthen these collaborative efforts. Privacy Enforcement Authorities (PEAs) collaborate globally, evidenced by statements and resolutions on generative AI from G7 countries and the Global Privacy Assembly. Various PEAs have issued guidance on applying privacy laws to AI, with notable initiatives in Canada, France, Spain, Türkiye, the UK, the US, and Singapore. These include principles for responsible AI development, action plans, compliance guidance, and frameworks to ensure AI technologies align with privacy regulations. For instance, France's CNIL (Commission Nationale de l'informatique et des Libertés - National Commission of Informatics and Liberty) has

developed an action plan for AI that respects privacy, and the UK's ICO has provided comprehensive AI and data protection guidance.

Regional Context

A general observance of AI governance in Africa shows increased AI policy initiatives, primarily national AI strategies. The governance of AI in Africa takes a varied approach. A recent report published by UNESCO from a survey conducted of 32 African countries shows that 18 out of 32 countries have ongoing initiatives to guide the development of AI at the national level. The development and use of AI are a priority according to the national development plans of 21 out of 32 countries. Out of the 32 respondents, 13 countries have launched AI strategies, 13 have developed AI policies, six have reported enacting legislation to address some of the challenges of AI, 12 have established Centers of Excellence on AI, and 3 have reported issuing ethical guidelines for AI. (Countries that participated in the survey include Angola, Benin, Botswana, Cabo Verde, Cameroon, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Egypt, Equatorial Guinea, Ghana, Guinea, Lesotho, Madagascar, Malawi, Namibia, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Togo, Uganda, Zambia, Zimbabwe).

More substantively, the African Union (AU) has developed and published the AU Continental AI strategy, to assist with actualising Africa's digital transformation. The policy document lays out a blueprint for AI regulation by African nations and has significant implications for how African nations approach the governance and oversight of AI technologies. The endorsed AU AI Policy provides a robust framework for ensuring AI's responsible and ethical use. It includes recommendations for industry-specific codes of conduct that outline best practices for designing, developing, and deploying AI systems. The continental strategy also calls for establishing technical standards and certification bodies to assess and benchmark AI applications, ensuring they meet rigorous safety, fairness, and transparency criteria.

Recognizing the need for regulatory oversight, the Continental Strategy proposes mechanisms for testing and validating AI before it is implemented. This includes guidance for AU member states on establishing regulatory frameworks to scrutinize AI applications and provide approval for their use. It also encourages the creation of national AI councils to provide ongoing governance and decision-making around these transformative technologies. It is intended to serve as a model that AU member states can readily adopt. For countries without existing AI regulations, it offers a template that can quickly adapt to national AI strategies. For those already with AI policies, the endorsed AU AI Policy encourages alignment to promote consistency across the African Union.

The continent already has a growing number of National AI Strategies: Egypt, Rwanda, Benin, Morocco, Mauritius, Sierra Leone, and Tunisia, with Nigeria and South Africa recently adding to the list of countries with National AI strategies. The development and utilisation of AI is prominent in the majority of the development plans of African states. However, despite these positive advancements, accessibility to these initiatives, specifically National AI policy plans, is limited, as they are not accessible within the public domain. We have only three accessible National AI policy plans: Egypt, Rwanda, and Mauritius.

National strategies are held to be powerful and peculiar hybrid policies. The policy documents emulate the 'national strategic positioning' within the global space for various states whilst establishing their 'national narrative' on the regulation, utilisation and benefits of AI and its integration within their societies. The National AI Strategies assessed within the African context include:

3.4.1.1. *Egypt*

The National AI policy plan promotes Egypt's developmental agenda when discussing AI. The narrative of the plan is centred around a conscious approach. The strategy reflects the state's realities, as the plan is rooted in a SWOT analysis. The overarching goal is to exploit AI technologies to serve Egypt's developmental goals and to foster regional and international cooperation. The mission is to effectively "create an AI industry in Egypt." This requires people, technology, policy, and infrastructure. To actualize the above, the strategy has four pillars and four enablers. The pillars are AI for government, AI for development, capacity building and international relations. These pillars are underpinned by four enablers: governance, data, ecosystem, and infrastructure.

3.4.1.2. *Mauritius*

The Mauritius Artificial Strategy Plan 2018 was the first strategy drafted by an African state. The plan is the guiding instrument that establishes the "cornerstone of the next national development model." It assists in actualising the potential of AI to improve the economic growth, productivity, and quality of life for the Mauritian state. The main focal areas of the plan are centred around matching existing and new AI solutions to specific sectors and regions, establishing a 'Mauritian unique selling point' of AI, an appropriate ecosystem to nurture AI with a focus on creating collaborative communities, human capital to sustain the AI ecosystem and lastly a regulatory framework that acts as a catalyst for AI development and fiscal growth.

3.4.1.3. *Rwanda*

The National Artificial Intelligence Policy is a roadmap to the state harnessing the benefits of AI as well as mitigating the potential risks of AI. The plan aligns with the current national plans: vision 2050 and Smart Rwanda Master Plan. This allows for a synergistic effect, as the plans concurrently work towards achieving the state's main goals. The plan is a catalyst for Rwanda harnessing AI for "sustainable and inclusive growth" as it seeks to mobilise local, regional, and international stakeholders, where mobilisation will assist with positioning the state to become a "leading African Innovation Hub and Africa's Centre of Excellence in Artificial Intelligence." The policy fosters inclusive and sustainable socio-economic transformation rooted around the state's national agenda.

National Context

Currently, Kenya has no specific laws or regulations that singularly regulate AI. The Ministry of Information, Communications, and the Digital Economy is responsible for creating a National AI Strategy in collaboration with various partners. Previous policy efforts include the 2019 Distributed Ledgers (Blockchain) and Artificial Intelligence Taskforce Report, which investigated and evaluated these two emerging technologies with significant promise for revolutionising Kenya's economy. The Taskforce, in its Report, noted that the challenge in regulating AI is striking a balance between supporting innovation and competition while protecting consumers, market integrity, financial stability and human life. According to the Report, the emerging technologies rapidly reshaping the global economy include distributed ledgers (Blockchain), artificial intelligence (AI), and the Internet of Things (IoT). In an effort

to create a framework for regulating AI in Kenya, the Robotics Society of Kenya prepared the Kenya Robotics and Artificial Intelligence Society Bill 2023 with the aim of developing a framework that would regulate the use and adoption of AI in Kenya. Still, in draft form, the bill has lacked meaningful support from government, regulators, civil society, and private sector players.

In addition to the aforementioned, on April 8, 2024, the Kenya Bureau of Standards (KEBS) released the Draft Information Technology Artificial Intelligence Code of Practice to ensure that the rights of citizens are upheld during the development of AI systems. Thus, the Code would assist organisations in the responsible development, provision, and use of AI once the Code is finalised and formally gazetted as a legal notice. Additionally, the code in establishing a governance framework will propose several standards aimed at supporting the National AI strategy and policies to be developed. The 10-year National Digital Master Plan 2022–2032, which follows the previous 2014-2017 (extended to 2022) master plan, sets the pace for Kenya's continued adoption of emerging technologies such as Artificial Intelligence, Blockchain technology and quantum computing to foster economic growth. The Master Plan highlights the need for a National AI Strategy, which would address the transformative role of AI on Kenya's economy, the role of both levels of government in AI investments, facilitation of research and development for effective human-AI interactions, safety, access to datasets, ethical considerations, AI standards and evaluation tools, and human capital.

The legal and regulatory atmosphere of AI reflects the urgent need for frameworks that balance innovation with ethical considerations and consumer protection. As AI technologies continue to advance, there is an increased necessity of establishing comprehensive regulations to govern their development and deployment.

Globally, there has been a significant increase in the number of nations adopting AI-related laws, rising from 25 in 2022 to 127 in 2023. This surge indicates a growing acknowledgment of the potential risks and benefits associated with AI, prompting diverse legislative approaches tailored to specific regional contexts. In Kenya, while specific AI regulations are still in development, existing laws such as the Data Protection Act and the Consumer Protection Act provide a foundational framework for addressing issues related to AI. The National AI strategy signifies the first step towards addressing AI governance.

The legal and regulatory atmosphere for AI is characterised by a dynamic interplay of innovation, ethical considerations, and consumer protection. Notably, as nations continue to develop and refine their regulatory frameworks, the focus remains on fostering an environment that encourages technological advancement while prioritising the rights and safety of individuals.

3.5. Kenya's AI Readiness Assessment

Kenya's AI readiness occurs within the global context, where various indices have rated countries' readiness for AI adoption based on factors such as data, infrastructure, talent, research and innovation, governance, partnerships, and ethical capabilities to handle the adoption of AI. Kenya has been rated within a variety of these indices, checking on safety, government AI readiness, amongst others.

For instance, according to the UNESCO Readiness Assessment Methodology (RAM) on AI Report, the private sector in Kenya is adopting AI-powered solutions at an increasing rate. AI

developments have driven innovation and efficiency across the finance, agriculture, healthcare, and education sectors, significantly improving decision-making processes, automation, and data analysis.

The Assessment is based on five core assessment areas (legal and regulatory dimension, social and cultural dimension, scientific and educational dimension, economic dimension, and the technological and infrastructural dimension) aimed at giving holistic insights into Kenya's status progress and preparedness. A summary of the findings from the assessment appear in the table xx:

Table 3.x: Results of UNESCO AI Readiness for Kenya

Core Assessment Area	Findings
Legal and Regulatory Dimension	Kenya has foundational legal frameworks, such as the Data Protection Act (2019), which regulates automated decision-making and protects individual privacy. The Kenyan Constitution (2010) promotes equality and the rights of marginalized groups, supporting inclusive AI development. There is a recognized need for comprehensive AI-specific regulations to address ethical implications and potential harms. Institutional and human capacity building is essential for effective implementation and enforcement of regulatory frameworks.
Social – Cultural Dimension	There is significant underrepresentation of women and minorities in the AI field, limiting diverse perspectives. Public awareness and engagement are critical for building trust and acceptance of AI technologies. Ethical considerations are central, with a call for frameworks that respect cultural norms and societal values. Without intentional efforts to promote equity, AI could exacerbate existing social disparities.
Scientific and Educational Dimension	There is a need for a robust research and development ecosystem to foster AI innovation. Increased investment and a coordinated approach are necessary to enhance AI research output and impact. The availability of AI-related educational programs is limited, necessitating expansion to meet job market demands. Emphasis on developing curricula aligned with industry needs and promoting STEM education to produce a skilled workforce.
Economic Dimension	The number of AI startups and companies is growing, indicating a developing market. Increased public and private investment in AI initiatives is essential for driving innovation and competitiveness. The ICT sector, including AI, contributes significantly to Kenya's GDP, with projections for greater future impacts. There is a critical gap in the labour market, with demand for ICT and AI skills far exceeding supply.
Technological and Infrastructural Dimension	The presence of data centres and cloud computing capabilities is essential for supporting AI applications. The report notes that while there are some existing resources, further investment and development are necessary to meet the increasing demands of AI technologies. As of early 2024, Kenya had approximately 22.71 million internet users, with a penetration rate of 40.8%. 98% of the population was covered by at least 2G mobile network technology, but access to 5G was limited (0.6%).

Category	Findings	Relevant Scores and Statistics
	Gender disparity in internet usage reflects broader accessibility issues, hindering inclusive AI growth. Challenges related to data sharing and accessibility are significant barriers to AI innovation.	

Additionally, Kenya's readiness according the Oxford Insights Government AI Readiness Index in 2023 appears in summary in table 3.x:

Table 3.x: Kenya' AI readiness - Oxford …

Category	Findings	Relevant Scores and Statistics
Data	Noting the importance of data in AI adoption, Kenya lacks sufficient data to train AI models, scoring low on the global index.	Kenya scored 44.44% on data availability in the 2023 Oxford Insights Government AI Readiness Index and 63.67% on data representativeness.
Infrastructure	Significant investment in connectivity and infrastructure development is noted through the establishment of the National Data Centre. The government has constructed around 8900 km of terrestrial fiber during the past ten years, much of which has reached the sub-county level and connects important government offices and institutions.	2023 Oxford Insights Government AI Readiness Index ranked Kenya 101st worldwide with a 40.19% score. Kenya's data and infrastructure score is 51.58% which is average but categorized as low
Talent	Kenya notes a significant gap between the high demand for AI skills and the limited number of qualified professionals due to low STEM enrolment. Current educational programs in AI at universities and technical institutions are inadequate to meet industry needs.	Only 25% of university graduates complete a STEM course.
Research and Innovation	Kenya's AI landscape underscores the critical need for a unified strategy to advance the field. Current research efforts in AI are disjointed and lack adequate funding, highlighting the necessity for increased investment from both public and private sectors to remain competitive on a global scale.	Kenya scored 48.8% in innovation capacity as per 2023 Oxford Insights AI Readiness Index. Comparatively, Sub-Saharan Africa scored 32.93% in innovation capacity.
Governance and Ethical AI Adoption	Emphasis is made on key readiness aspects such as capacity development and innovation, ethics and responsible AI practices, standardisation and collaboration to promote data interoperability and sharing characterised by the The AI Practitioners' Guide (2023), developed by a multi-stakeholder AI practitioners' group (Community of Practice), Kenya still lack AI specific regulations.	Kenya scored 40.19% in the government pillar of the 2023 Oxford Insights Government AI Readiness, which denotes government readiness to adopt AI in public services.

Partnerships	Collaborative efforts from a multi-stakeholder group are noted towards regulatory readiness	Key observation, no percentage scoring

3.6.   Key findings from primary data collection

This section presents findings from a comprehensive data collection process that engaged a diverse range of stakeholders across Kenya's AI ecosystem. The insights are drawn from government representatives, industry leaders, academia, civil society, and the public through key informant interviews, focus group discussions, expert consultations, town hall sessions, and an online survey. These approaches provided a nuanced understanding of strategic priorities, opportunities, and challenges that can be addressed by the strategy.

Key Informant Interviews

The Key Informant Interviews(KIIs) identified a number of strengths, challenges, limitations and considerations that the strategy should take into account to ensure effective implementation.

Key informant interviews revealed a strong belief in Kenya's potential to become a leader in AI innovation. Participants highlighted the country's vibrant startup ecosystem, growing digital literacy, and access to renewable energy as significant strengths. The nation's pioneering spirit makes it an attractive location for global AI pilot projects and position it as a regional hub. Over 40,000 people have received AI training, entrenching Kenya as a hub of youthful talent ready to harness the power of AI. Furthermore, the availability of green energy sources like geothermal power presents opportunities to build regional data centres that are sustainable.

Kenya has already demonstrated its capability to leverage technology in crisis response, as seen in flood management efforts and the swift transition to remote learning during COVID-19. These successes further position Kenya to potentially lead neighbouring countries in AI development and implementation.

However, a lack of quality and digitised data, infrastructural gaps, and public mistrust in AI systems pose significant barriers to widespread adoption of AI. Participants expressed concerns over the ethical use of AI, particularly regarding data privacy, misinformation, and bias. Many of those interviewed called for clear policy direction and increased efforts in raising citizen awareness to ensure AI delivers tangible benefits to all Kenyans, increased public trust and responsible use of AI. The respondents also noted that currently donors have limited coordination in supporting the AI ecosystem, and there's a notable power imbalance with big tech companies operating in the region unproportionally wielding influence and inequitable opportunities for smaller SMEs in the AI ecosystem. Despite having many Kenyans working in AI, many remain stuck in bottom-of-pyramid and entry level jobs such as data annotation, indicating a need for better career progression pathways. Small tech companies struggle with limited access to capital and financing, and energy poverty and associated costs remain ongoing concerns for scaling a local AI ecosystem.

Access and availability of data presents another significant challenge, with limitations in quality, quantity, and data sharing mechanisms. Outdated record keeping practices, manual processes in government and limited digitization of official records limits the ability of government to tap into to train contextually relevant models. Infrastructure gaps and AI skills gaps of government officials could also limit the government from harnessing the full potential of AIs and maintaining procured systems.

Respondents also noted that while Kenya has ambitious goals for AI, these efforts are often underfunded and lack a unified strategy. They made recommendations that the national AI strategy be inclusive of stakeholder input and ethical safeguards. Additionally, respondents recommended fostering interdisciplinary collaborations between industry, government and academia, building repositories of local datasets for AI applications, and creating transparent financing models to support startups and innovators. There was an emphasis on transparency in AI deployment and decision-making and the efficient utilisation of national resources processes to build public trust in AI-based systems. Stakeholders emphasised the importance of ensuring AI development leaves no one behind, as those left behind may never recover.

On governance, several respondents stated that Kenya needs testing and sandboxing platforms for AI development. It was also necessary to define AI safety in the context of the Global South as well as establish principles for safe, ethical, and inclusive AI implementation in Kenya. Clear lines of responsibility and accountability for AI deployments and decision-making also need to be established.

Focus Group Discussions (FGDs)

The FGDs further contextualised and supported the insights arising from the KIIs, focusing on inclusivity and the socio-economic implications of AI. In several FGD sessions, participants stressed the importance of embedding local contexts into AI systems, including incorporating indigenous knowledge and local languages. The discussions highlighted the importance of incorporating Afrocentric views and values into AI development, with a strong emphasis on local production and civic education. Participants also highlighted that AI systems should be built with representative data that reflects African diversity and contexts. This approach would not only make AI more accessible but also ensure its relevance to Kenya's unique challenges.

Data sovereignty emerged as a critical theme. Participants stressed the need for local data processing capabilities and robust frameworks to secure and manage data effectively. Concerns about the reliance on foreign data centres and their implications for Kenya's digital independence were repeatedly raised in different forums.

Opportunities were identified in sectors like agriculture, education, and health, where AI could enhance service delivery and create jobs. For instance, AI-powered systems could help farmers improve crop yields and enable more efficient healthcare diagnostics. However, participants cautioned against overregulation, which could stifle innovation, particularly for small and medium-sized enterprises (SMEs).

The FGDs also highlighted the urgent need for capacity building. Kenya has a shortage of specialised AI professionals, and academic institutions often lag in aligning their curricula with industry needs. The academic FGD raised concerns about curriculum development and funding challenges, particularly in public universities. Participants advocated for collaborative AI innovation hubs and strong public-private innovation networks.

Recommendations included introducing AI education at earlier levels of schooling, promoting research funding, and fostering international partnerships for knowledge exchange. Infrastructure and investment needs dominated many discussions. Participants called for strategic government investments in data centres, cloud computing, edge nodes, and mobile data businesses. They emphasised the need for market-friendly policies to encourage investment while reducing regulatory uncertainty.

Town Hall Meetings

Town hall meetings provided a platform for diverse stakeholders, including citizens and technology practitioners in different regions of Kenya to voice their perspectives on AI development. The town hall meetings revealed broad public interest in AI's potential across multiple sectors, including health, education, creative industries, media, agriculture, and public services. Participants shared opportunities for AI to improve service delivery, particularly for people with disabilities, and enhancing public sector efficiency.

However, a number of town hall participants were concerned about limited access to AI technology, widening the digital divide and the risk of exacerbating existing inequalities. Participants also raised fears about job displacement, particularly in labour-intensive industries, due to the automation of tasks. Similarly, concerns were raised about the shortage of specialised skills for local AI development. All town hall meetings repeatedly raised the issue that AI use could lead to potential threats to general and personal well-being including risks to critical thinking and creativity, the spread of misinformation, and data privacy issues.

Town hall discussions were centred on ethical considerations with participants, similar to FGD respondents, stressing the importance of aligning AI systems with Kenyan cultural norms and values. Public awareness campaigns were proposed to educate citizens on AI's benefits and risks, fostering trust and inclusivity. Moreover, employing universal design to AI systems built in would increase their utility to everyone including accessibility to individuals with disabilities.

Despite these concerns, townhall discussions highlighted significant opportunities for economic growth. AI-driven personalization could enhance citizen engagement, while innovations tailored to local needs could address pressing societal challenges such as poverty and health disparities. The town halls also produced several key recommendations.

On infrastructure and access, participants believed that it was imperative that all Kenyans can access AI and that it was necessary to increase access to smartphones and accelerated digitization efforts. There was also an emphasis on prioritising local datasets and including indigenous knowledge in AI development. The townhall discussions also made recommendations to create unified legal frameworks and ethical guidelines to guide AI development and ensure that governance and regulatory frameworks remain agile to accommodate the evolving nature of AI technologies. Participants also called for increased investments in infrastructure, such as data centres and connectivity, to support AI deployment at scale.

Additionally, participants made recommendations for professional upskilling programs and public awareness campaigns. Participants called for consideration of a welfare system for workers displaced by AI automation, highlighting the need to manage AI's social impact thoughtfully and proactively.

All town halls emphasized that it was necessary to develop robust public-private partnerships, international collaborations, and government leadership to drive AI adoption in Kenya. Throughout all discussions, participants emphasized the importance of balancing innovation with responsible development and ensuring that AI advancement benefits all Kenyans.

Online Survey

We received responses from 17 counties across Kenya, with participants representing various sectors. The majority of responses came from academia, civil society, and the for-profit sector, with some input from government, media, and multilateral agency representatives.

Respondents identified key opportunities for AI, particularly in economic growth, education, healthcare improvement, environmental sustainability, and the efficient provision of public services. However, they also expressed significant concerns, mainly focused on ethical considerations, privacy issues, and security risks. Survey participants provided insight into their priorities for an AI strategy. The top priorities, in order of consensus, included: research and development, education and workforce training, ethical guidelines and regulations, healthcare and agriculture, and public awareness and engagement.

There were divergent views among respondents regarding AI regulation. One group emphasized the importance of allowing AI to develop its potential before imposing regulations, with public participation shaping policy. In contrast, another group stressed the need for clear policies, laws, and a national strategy to ensure ethical AI development from the outset. A majority of respondents underscored the necessity of transparency in AI decision-making processes to build public trust. They advocated for AI algorithms to be subject to public scrutiny. Moreover, respondents called for public awareness campaigns to educate citizens about AI, its benefits, risks, and ethical implications. Inclusivity emerged as a crucial consideration, with respondents urging that AI systems be designed to consider diverse populations to ensure equitable outcomes. Additionally, there was a strong demand for independent bodies to oversee AI implementation, evaluate AI projects, and conduct regular impact assessments on the effects of AI deployments.

3.7. Stakeholder Analysis

Background

Stakeholder mapping is a crucial process in developing a national AI strategy, involving identifying and analysing individuals, groups, and organisations that have an interest or stake in the strategy's outcomes. According to Bryson (2004), stakeholder mapping systematically identifies and analyses stakeholders to understand their influence and importance in decision-making processes. This process helps recognise the diverse perspectives, interests, and potential impacts on various sectors of society, ensuring that the strategy is comprehensive and inclusive. The primary purpose of stakeholder mapping is to facilitate effective engagement, foster collaboration, and mitigate risks by understanding the needs and expectations of different stakeholders. Doing so ensures that the AI strategy is aligned with national priorities, ethical standards, and the long-term goals of sustainable development.

Justification

This stakeholder mapping exercise is based on the following theoretical frameworks - the normative stakeholder theory and the evolving theory of property. To contextualise the AI ecosystem, an African lens is applied in the exercise of when mapping stakeholders, which

presents the ideology that the African AI ecosystem can be described by identifying stakeholders categorised based on normative claims. The normative claims derive from the normative stakeholder theory, which is a critical guide in ethical decision-making in the AI ecosystem. This theory centres on prioritising stakeholders and identifying their obligations and responsibilities. The normative claim is based on the evolving theory of property, which posits that property rights are embedded in human rights, necessitating the consideration of the interests of all stakeholders, including non-owner stakeholders. Stakeholders are categorised based on the normative claims they can make on the AI system, focusing on fair economic opportunity, political equality, and authenticity. This approach emphasises the importance of considering ethical and moral considerations in decision-making processes related to AI development, adoption, and policy formulation. The normative stakeholder theory identifies a range of potential obligations that corporations operating in developing countries may take on, focusing on the commitments of groups of stakeholders rather than individual entities in specific situations. Therefore, in bringing this together to define responsible AI, the strategy defines responsible AI within Africa by emphasising the importance of considering diverse perspectives and ensuring equitable outcomes for all stakeholders involved in the AI ecosystem. Responsible AI, in this framework, involves addressing power dynamics, information asymmetries, and intersecting interests among stakeholders to create an AI ecosystem that is fair, inclusive, and beneficial to everyone. The focus is on identifying disparities in power, understanding relationships and power dynamics between different groups, and ensuring that the development and adoption of AI technology consider the needs and perspectives of all stakeholders. By characterising stakeholders' interactions, interests, responsibilities, and accountability, the aim is to promote responsible AI practices, prioritising equity and inclusivity.

Following from this, these are the eight main groups considered during the stakeholder mapping and their indices based on their interest and influence over this strategy document:
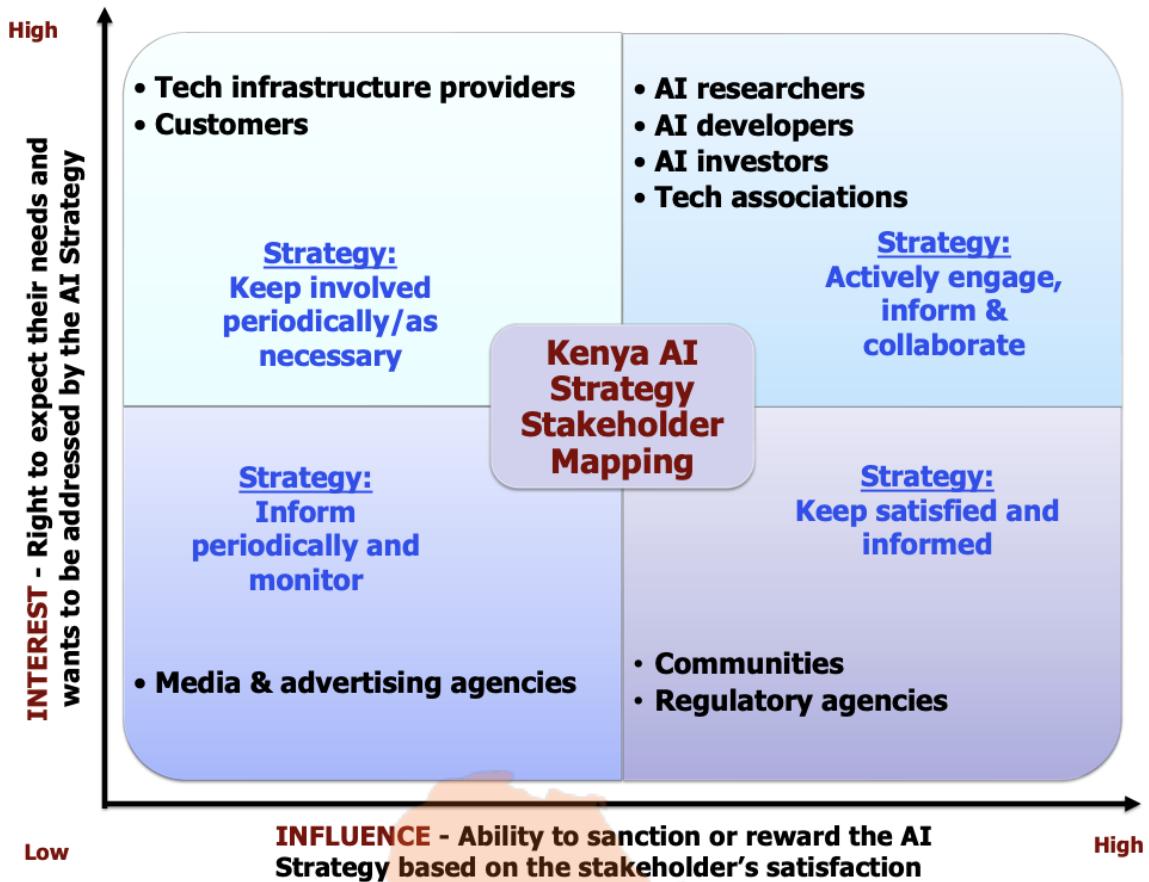
<table>
<tr><th colspan="6">Stakeholder Mapping and Identification of Influence</th></tr>
<tr><th>No.</th><th>Stakeholder</th><th>Actors</th><th>Interest Index: High or Low</th><th>Influence Index: High or Low</th><th>Implication</th></tr>
<tr><td>1</td><td>Developers</td><td>ASSEK, COP, TESPOK, Consultancy firms</td><td>H</td><td>H</td><td>Must be involved</td></tr>
<tr><td>2</td><td>Customers (purchasers)</td><td>Private Sector- KEPSA, KAM, KBA

Government: Ministries, Departments and Agencies

Citizens</td><td>H</td><td>L</td><td>Involved periodically</td></tr>
</table>

3	Communities	KICTANet, COP AI, COP DPI, EAC, EALA, AU, National Assembly, LSK	L	H	Keep informed
4	Regulatory Agencies	Office of the Data Protection Commissioner The Competition Authority of Kenya Commission on Administrative Justice KEBS National Computer and Cybercrimes Coordination Committee (NC4) Kenya Industrial Property Institute (KIPI) Kenya Copyright Board Central Bank of Kenya	L	H	Keep informed
5	Researchers	**Academia** University of Nairobi USIU JKUAT Strathmore University K-AIST Other universities ACTS **Non-academic/commercial** MARI Moringa AI Kenya LDRI	H	H	Must be involved

6	Investors (Financiers/Development Partners)	**Development Partners** FCDO IDRC GIZ EU USAID **Government** **Private Sector** Venture Capital and Private Equity firms	H	H	Must be involved
7	Infrastructure providers	Liquid Telecom Google Microsoft NVIDIA Ministry of ICTDE	H	L	Involved periodically
8	Media and Advertising Agencies	Media Council Editors Guild Marketing Society of Kenya	L	L	Inform periodically

This mapping prioritizes the stakeholder groupings that 'must be involved' and should be kept informed. These are AI Developers, Communities, Regulatory Agencies, Researchers, and Investors as shown in figure 3.x for high influence and high interest

Figure 3.x: Stakeholder Map: Influence Interest Matrix

INTEREST - Right to expect their needs and wants to be addressed by the AI Strategy

High

- Tech infrastructure providers
- Customers

Strategy:
Keep involved periodically/as necessary

- AI researchers
- AI developers
- AI investors
- Tech associations

Strategy:
Actively engage, inform & collaborate

Kenya AI Strategy Stakeholder Mapping

Strategy:
Inform periodically and monitor

Strategy:
Keep satisfied and informed

- Media & advertising agencies

- Communities
- Regulatory agencies

Low

INFLUENCE - Ability to sanction or reward the AI Strategy based on the stakeholder's satisfaction

High

3.8.   SLOC Summary

Tables 3.x1 to 3.x4 show a summary of the synthesis of the information obtained from the various analyses reported in this chapter in the form of strengths, limitations, opportunities and limitations (SLOC). The key evidence behind its selection of each of the SLOC elements is also provided.

Strengths

Strengths	Key Evidence

Existing diverse and vibrant local innovation ecosystem	There is a vibrant ecosystem of local start-ups in creating AI solutions tailored to Kenyan needs. The stakeholder mapping shows diverse input and actors in AI development and innovation in Kenya. The innovation ecosystem is developing home-grown and localised solutions that are contextually relevant in sectors such as health, agriculture and fintech. Major international technology companies including Microsoft, Google, Meta, Huawei and NVIDIA have made significant investments into the local ecosystem through the establishment of data centres and AI labs, which bolster the local AI ecosystem, enhance Kenya's AI capabilities, provide access to global best practices while facilitating technology transfer and improving competitiveness.
Young digital-ready AI workforce	Kenya has a large, young workforce already actively engaging in technology and now, AI. This workforce has basic training and high digital literacy, which provide a base for developing advanced AI capabilities and fostering innovation as AI workforce demand increases both domestically and internationally. Some of these workers are already supporting international companies such as Sama in the development of AI through outsourced data processing and labelling.
Foundational legal framework for ethical AI development and use	Kenya has robust existing legal frameworks including the Data Protection Act, The Computer Misuse and Cybercrimes Act that provide direction on aspects of AI development and use. These regulatory frameworks enable initial trust in AI systems and some redress mechanisms for misuse and AI harms. Kenya also has conducive policies that create an enabling environment for AI development and prioritising emerging technologies including the National Digital Economy Blueprint, where AI is referenced as a tool for driving innovation-driven entrepreneurship and the Kenya National Digital Master Plan (2022-2032).

Existing digital infrastructure	Kenya has a robust digital infrastructure set up including a number of private and government data centres, fibre infrastructure and high levels of mobile infrastructure and internet penetration that supports small scale AI development and deployment. Kenya also has access to clean and green energy, particularly geothermal, which provides a strategic advantage in developing AI infrastructure, such as green data centres with minimal environmental impact.
Political will and strong government support for the adoption of AI	The government has provided political backing for the development of AI in Kenya through participation and ratification of global events and issues on AI and; prioritisation of AI through the set up of the 2019 Distributed Ledgers (Blockchain) and Artificial Intelligence Taskforce, the set up of the Sectoral Working Group as well as the development of a national AI strategy. The government has mobilised financing and resources for local AI development by facilitating strategic investments from international partners e.g. the commitment by Microsoft and G42 for a $1 billion digital ecosystem initiative to set up green infrastructure and local language models. There are also existing initiatives in the public sector including the set up of the AI-powered Konza smart city, the use of AI in healthcare resource allocation and deployment of chatbots that support digital service delivery and citizen engagement.
Kenya is a regional hub/gateway to the East & Central Africa region	The presence of homegrown companies and tech startups building AI tools as well as global tech companies setting up research centers provides evidence of Kenya's status as a regional leader. Kenya's existing digital infrastructure, such as the National Optic Fibre Backbone Network Initiative, aim to enhance connectivity across all counties, making it an attractive destination for technology companies interested in expanding to the region to set base in Kenya. Kenya's commitments to building smart cities, like Konza Technopolis, and existing partnerships for AI training and innovation also demonstrate its capacity as a regional leader.

Limitations

Limitations	Key Evidence
AI-Skills Gap	Kenya faces a huge shortage of advanced-level AI experts with the skills to design and train contextually relevant models for AI. This skills gap can slow down AI development, limit innovation, and force reliance on foreign expertise, thereby reducing Kenya's competitiveness in AI. Primary data collection also indicates existing mismatches between academic training and practical industry needs that limit the ability to further homegrown innovation and effective adoption and maintenance of AI technologies. (Expand this definition to include different types of skills to include non tech professionals)
Regulatory gaps and regulatory conflicts	Kenya does not have a comprehensive and specific regulatory framework for AI. While existing legal frameworks such as the Data Protection, Computer Misuse and Cybercrime, Intellectual Property and Consumers Acts provide some guidance, they are insufficient to address the complexities of AI. There is no specific policy on AI. These fragmented policy and regulatory gaps create governance challenges in managing ethical concerns, data privacy, and the safe deployment of AI technologies.It may hinder the responsible development and deployment of AI, potentially increasing the risk of misuse, harm to the citizen or unintended consequences from the deployment of AI. In addition, this creates uncertainty which is deterring investment, innovation and adoption of AI by certain industries including the public sector. Kenya's current regulatory environment for AI is fragmented, with multiple bodies working independently without a unified approach. This fragmentation leads to inconsistencies and inefficiencies in AI governance, making it challenging to create a cohesive strategy for AI development and deployment. The absence of robust AI-specific governance frameworks also limits public sector adoption of AI as well as adoption of AI in regulated sectors where errors and harms from AI deployment could diminish public trust, inequality and quality of service provision.

Data quality, availability and accessibility concerns	Despite the presence of digital infrastructure, Kenya struggles with data availability and quality, which are critical for training effective AI models. The country ranks low on data availability indices, reflecting challenges in accessing and utilising data for AI development.
	Where data exists e.g. in government ministries and departments, it is not fully digitalised and exists in silos. It is also underutilised due to gaps in data governance policies that enable data sharing and collaboration, limiting the potential for data-driven innovation and comprehensive AI solutions.
Primary and supporting infrastructure constraints	While Kenya has made progress in developing its digital infrastructure, challenges remain in terms of data accessibility and the availability of computing power needed for AI applications. These infrastructure limitations could slow down AI adoption and limit the scalability of AI-driven solutions across the country.
	Kenya faces challenges related to insufficient computing power, broadband connectivity, and energy efficiency, which hinder large-scale AI deployment including the deployment of large language models. These infrastructure constraints limit the scalability and effectiveness of AI initiatives and impede Kenya's ability to implement AI solutions effectively across sectors.
	Inadequate infrastructure and unreliable infrastructure such as network reliability and consistent electricity and water supply, poses a significant barrier to the effective deployment and scalability of AI technologies across the country.
	Additionally, the slow progress in digitising documents and records from government and other key sectors will delay the adoption of AI technologies. This challenge has hampered the efficient delivery of public services and will limit the ability to leverage AI for data-driven decision-making and innovation within the public sector.

Limited investments in local AI, research and development	The AI readiness assessments note under-investments in local AI research and development (R&D). Additionally, startups and universities face funding constraints and limited access to venture capital and development financing to scale AI projects. AI projects are inherently expensive. This curtails growth of local innovations, diminishes competitiveness, and hinders the creation of contextually relevant AI solutions. The Kenyan AI ecosystem heavily relies on funding and support from international organizations and private companies, which may limit the sustainability and autonomy of local AI initiatives. The lack of government-funded AI research highlights a critical gap that could undermine the long-term development and independence of the national AI ecosystem.
Ensuring equity and inclusion in AI development and gaps in public AI/digital literacy	Despite efforts by the government and private sector players, there remains significant gaps in digital and AI literacy among the general population. This limits public engagement with AI technologies, reducing the adoption of AI-driven solutions and the potential to widen socio-economic inequalities. The digital divide in Kenya, particularly between urban and rural areas and among marginalised communities, poses a significant challenge to the inclusive adoption of AI technologies. Without targeted efforts to bridge this divide, AI adoption could exacerbate existing social and economic inequalities, limiting the benefits of AI to a small segment of the population. Additionally, there will be a challenge in building public trust and awareness, an important element for the successful adoption of AI, as it ensures that citizens are informed, engaged, and confident in using AI technologies Kenya also faces a challenge from the existing gender imbalances and the underrepresentation of marginalized groups in the development and deployment of AI technologies who are necessary to ensure diversity in development of AI and that the benefits of AI are shared broadly across all segments of society. There is significant underrepresentation of women and minorities in the AI sector, limiting the diversity of perspectives and innovation in AI development. This underrepresentation may exacerbate existing social inequalities and hinder the creation of inclusive AI solutions that address the needs of all segments of society.

| Fragmented/uncoordinated prioritisation of development and application of AI | There is a potential for unbalanced prioritisation of AI initiatives with certain sectors receiving more attention and resources than others based on political considerations rather than strategic needs. This concern was raised by both government representatives and innovators.

This could stifle innovation, create disparities in AI development across sectors, and undermine the effectiveness of AI initiatives |
|---|---|

Opportunities

Opportunities	Key Evidence
Job creation and economic growth potential	AI has shown the potential to significantly boost global GDPs by improving efficiency and productivity in sectors and creating new jobs. The Kenyan economy is undergoing significant challenges and fraught with reduced incomes and increased job losses.

The adoption of AI in critical sectors like agriculture, healthcare, and finance has led to significant improvements in operational efficiency and service delivery. For example, AI-driven platforms like Apollo Agriculture enhance agricultural productivity, while AI in healthcare supports disease diagnosis and patient management. These innovations not only boost sectoral performance but also contribute to the broader socio-economic development of Kenya.

Sector-specific AI implementations can address unique challenges in these areas, driving improvements in efficiency, productivity, and service delivery.

AI-driven economic growth can enhance Kenya's global competitiveness, create a new industry and job opportunities, and drive inclusive economic development. These new jobs created by an AI sector can address unemployment, especially among the youth, and contribute to economic stability and growth. |

AI role in enhancing public sector efficiency	AI presents an opportunity to significantly improve public sector efficiency in Kenya by automating processes, enhancing decision-making, and reducing bureaucratic inefficiencies. This could lead to more transparent, accountable, and responsive public services, thereby increasing citizen trust and engagement. Various primary interviews have identified the government as an anchor of demand for AI solutions. The government's role as a primary AI adopter can stimulate the market, drive innovation, and create a sustainable demand for AI solutions across various sectors.
Strengthening existing policy and regulations	Kenya has the opportunity to develop and implement ethical AI frameworks that address concerns related to bias, discrimination, and data privacy. By leading in the creation of responsible AI practices, Kenya can set an example for other countries in the region and establish itself as a hub for ethical AI innovation. Given that AI is still an evolving technology there are opportunities to set up agile environments such as regulatory sandboxes for safe AI development and testing. These environments support innovation by providing a controlled environment for developing and testing AI technologies, therefore, accelerating their safe and effective deployment. An example includes the Draft Information Technology Artificial Intelligence Code of Practice.
AI-Specific Education Programs	There is an opportunity to develop AI-specific curricula and training programs. Building a skilled workforce through rapid upskilling, reskilling and AI-specific education ensures Kenya can meet the future demands of the AI industry, fostering sustainable growth and innovation. The development of AI-specific curricula and training programs can also help address the existing skills gap, leading to job creation and a more skilled workforce. Kenyan universities and institutions, such as Jomo Kenyatta University of Agriculture and Technology and Strathmore University already offer specialized AI programs. Additionally, initiatives like Huawei's AI Certification and the Jitume Digital Hub contribute to building a skilled workforce, ensuring that Kenya has the talent needed to sustain and grow its AI sector. These programs can be further enhanced by leveraging international partnerships that allow Kenya to bridge the skills gap through targeted capacity-building programs and aligned training to industry needs.

Public-Private Partnerships	Expanding public-private partnerships and collaborative projects between government, private sector, and academia can accelerate AI development by leveraging resources and expertise from each sector. Public-private partnerships can pool resources and expertise, accelerating AI development and ensuring that innovations are aligned with national priorities.
Investments into the Local AI innovation ecosystem.	By positioning itself as a leader in AI innovation in Africa, Kenya can attract international investments into the existing technology community and innovation ecosystem. This could lead to the development of home-grown AI solutions that leverage local data and talent. There are already a number of open data repositories including from the National Bureau of Statistics. Streamlined development of this data infrastructure and existing repositories can enhance AI research, enable the development of high-quality AI solutions, and improve decision-making processes across sectors. There is also an opportunity to develop local language models which can democratise access to AI, making it more inclusive and relevant to the Kenyan population, while preserving linguistic diversity. Kenya has the opportunity to harness local industry and capital to support AI research and academia. By encouraging collaboration between businesses, investors, and educational institutions, Kenya can foster homegrown innovation, drive AI advancements, and strengthen its research capacity. This approach can reduce reliance on external funding, empower local talent, and accelerate the development of AI solutions tailored to Kenya's needs.

Leadership in AI development (models, responsible AI, policy)	Emerging applications in agriculture (e.g., crop disease detection), healthcare (e.g., medical imaging analysis), and financial inclusion have exhibited Kenya's ability to develop AI solutions tailored to African contexts. Several global tech companies have also established research centers in Kenya, focusing on local AI model development. Stakeholders interviewed in the primary data collection exercise advocated for embedding Afrocentric values and indigenous knowledge into AI systems to ensure relevance and inclusivity, showcasing Kenya's leadership potential in contextual AI development. Additionally, Kenya has foundational legal frameworks, like the Data Protection Act demonstrating Kenya's potential to lead in crafting AI policy for emerging markets. Kenya has access to renewable energy (e.g., geothermal) create a unique opportunity for leadership in sustainable AI development.

Challenges

Challenges	Key Evidence
Data Governance and Data Sovereignty	Kenya relies heavily on foreign data centres to process and store datasets produced in the country and about Kenyans, raising concerns about data sovereignty and the potential for external entities to control or influence key AI data.
	This dependence on external entities for data storage and management raises concerns about the potential loss of control over critical AI data, which could expose the country to data exploitation, external manipulation, privacy breaches, dependency on external AI solutions, and national security threats. Without strong data governance, Kenya may struggle to protect its citizens' data rights and maintain trust in AI systems. Strengthening these frameworks is essential to safeguard national interests and ensure the integrity of AI initiatives.

| Labour market disruption and job displacement | The adoption of AI technologies in Kenya creates the potential for widespread job displacement, particularly in sectors such as manufacturing, agriculture, and services, where a large portion of the population is currently employed. This creates the need for reskilling and upskilling initiatives to mitigate the risk of exacerbating unemployment and deepening social inequalities.

Additionally, the risk of brain drain among skilled AI professionals further exacerbates this challenge, as top talent may seek opportunities abroad for better pay, leaving gaps in the local AI workforce.If not managed effectively, the brain drain of skilled AI professionals could limit Kenya's ability to build and sustain a competitive AI ecosystem. |
|---|---|
| Global regulatory pressure | There is a lag in defining comprehensive ethical and legal frameworks both locally and internationally. As AI rapidly advances, there are challenges understanding and scoping evolving AI risks including the risks of bias, discrimination, and potential misuse for surveillance and other invasive purposes.

Different regions are therefore adopting varied approaches to AI regulation from AI legislation to sector specific regulation. These diverse approaches create pressure for Kenya to decide which models to follow or how to develop its own unique approach while at the same time remaining globally competitive. Particularly, it presents a challenge of balancing an enabling environment for innovation to address Kenya's unique socio-economic context, creating a framework that aligns with international best practice for regulating risks associated with AI technologies, and preserving citizens' rights. |

Cap on competitiveness in AI technology (Global) - supply chain on AI technology	The concentration of AI investments and research in advanced economies like the US, China, Japan, India, and Germany is accelerating the pace of global AI innovation. The rapid advancement of AI capabilities in these leading nations outpaces local development in Kenya, potentially widening the technological gap and making it increasingly difficult for the country to compete on the global AI stage. Global supply chains for acquiring essential AI components such as high-performance GPUs and specialised AI chips are often dominated by a few key players in developed economies. Limited access to these resources, due to factors like export controls, high costs, or supply shortages, can significantly hinder Kenya's ability to develop and deploy state-of-the-art AI systems and increase operational costs. This dependence on external resources for core AI infrastructure could slow down local innovation and make it more challenging for Kenya to develop a self-reliant AI ecosystem.
Cybersecurity and misinformation/disinformation	From the global environmental analysis where AI technologies are exploited for cyber-attacks, such as automated phishing and enhanced hacking techniques. Kenya faces similar risks due to its expanding digital and AI ecosystems The reliance on external data centers can compromise data sovereignty and expose Kenya to cross-border cyber risks. The rise of generative AI technologies, such as deep fakes, poses risks for creating and spreading false narratives, undermining trust in media and institutions Kenya's regulatory frameworks for addressing cybersecurity and misinformation are still evolving, leaving gaps in mitigating these challenges

4. AI Strategy Foundations

4.1 Vision

The vision of the national AI strategy is to be:

An African leader in AI R&D, innovation and commercialization for inclusive socio-economic development

This strategy envisages Kenya:

a) Being at the forefront of quality AI research and development and creating innovative and ethical solutions that address the needs of our local but diverse communities.

b) Leveraging local talent, datasets, and creativity to transform priority sectors and create inclusive economic growth.

c) Upholding ethical and responsible AI by setting clear guidelines that balance innovation with ethical considerations, ensuring AI is developed and deployed safely, responsibly, and inclusively.

d) Prioritising data sovereignty and ethical AI practices to build a technological future that is safe, accountable, and beneficial for all Kenyans.

4.2 Value Proposition

The following is the value proposition for the national AI strategy:

- **Driving Economic Growth**: AI is poised to boost GDP, create digital jobs, increase productivity, generate revenue, optimise costs, and enhance government service delivery. Potential job displacement will be proactively addressed.
- **Elevating Competitiveness**: Kenya aims to become a frontrunner in AI research and development, cultivate a thriving AI startup ecosystem, and become a net exporter of high-quality AI technology and services.
- **Establishing Robust Data Governance**: The strategy will implement a data governance framework that ensures ethical AI use and responsible data accessibility.
- **Ensuring Agile AI Governance**: An adaptive AI governance framework will be established to respond to the rapid pace of technological advancements effectively.
- **Fostering Public Trust**: The strategy is committed to promoting public trust in AI technologies by providing a roadmap for AI awareness, literacy, and ethical use.
- **Creating Social Impact**: AI will be leveraged to improve access to essential services, reduce poverty, and empower local communities and individuals. This includes making AI accessible in local languages.

4.3 Guiding Principles

The following are the principles that will guide the implementation of the national AI strategy:

a) **Inclusivity and non-discrimination:** Promoting inclusivity, equity, and non-discrimination in the development and deployment of AI, ensuring fair and equal access to AI benefits for all Kenyans, regardless of their background or circumstances.

b) **Participation and co-creation:** Encouraging multi-stakeholder engagement and involving diverse perspectives from government, industry, academia, and citizens.

c) **Transparency and accountability:** Ensuring transparency, equity, explainability, and accountability in AI systems, promoting public trust, and enabling oversight, auditing, and redress mechanisms.

d) **Ethical and responsible AI:** Privacy protection, fairness, safety, security, and respect for human autonomy and decision-making.

e) **Cultural preservation and contextualization:** Developing AI systems enriched with Kenyan cultural values, preserving and promoting the nation's cultural heritage, and ensuring contextual relevance to local needs and contexts.

f) **Environmental sustainability:** Promoting the development and deployment of AI systems that are environmentally sustainable and energy-efficient.

g) **Economic benefit and self-sufficiency:** Leveraging AI to drive economic growth, create new opportunities, and foster self-sufficiency, positioning Kenya as a net exporter of AI technologies and services.

h) **Local first approach:** Prioritising local talent, resources, and solutions in developing and deploying AI while fostering local, regional and international collaborations and partnerships.

5. Strategic Decisions

5.1. Strategic Options

The summary of SLOC was used to generate strategic options that could be pursued using the framework below.

	Strengths	Limitations
Opportunities	Q1: How will we use our strengths to take advantage of the opportunities?	Q3: How will we tackle our limitations to prevent ourselves from missing opportunities?
Challenges	Q2: How will we use our strengths to reduce probability and impact of the challenges?	Q4: How will we act on our limitations to mitigate the challenges?

The following table shows the number of options that were generated with each of the above questions.

Question	No. of options
Q1 - Strengths/Opportunities	202
Q2 - Strengths/Challenges	156
Q3 - Limitations/Opportunities	98
Q4 - Limitations/Challenges	137
Total	**593**

These options were then evaluated using the ABCD method. This method assigns priority to each option as shown below:

- A: Options that are vital to survival as Kenya

- B: Options that are not critical to survival but appear to be important for success

- C: Options that have some but not primary importance

- D: Options that have unknown or no importance

The highest priority (A) options were selected. The selected options were grouped into strategic themes. The themes and sub-themes that emerged are shown in table 5.x:

Table 5.x: Strategic themes and sub-themes

Themes	Sub-themes
1. AI Digital Infrastructure	· AI-ready national digital infrastructure · Compute infrastructure (data centres) · Green energy sources to power AI infrastructure · Domestic manufacturing facilities for AI-specific hardware · Cybersecurity infrastructure · Partnerships and collaborations
2. Data	· Data governance framework · Secure data sharing · Quality AI training datasets
3. AI R&D and Innovation	· AI R&D capabilities · AI innovation · Scaling local AI enterprises · Market for local AI solutions
4. Talent Development	· Foundational AI skills in schools · Specialised AI skills in tertiary institutions and industry · Partnerships for AI talent development and placement

	· Acquisition of quality foreign AI talent
5. Governance	· Policy framework for AI and emerging technologies
	· Agile AI legal and regulatory frameworks
	· AI risk and safety frameworks
	· Stakeholder collaborations
6. Investments	· Private sector investments in AI
	· Public sector investments in AI
	· Kenya as an investment destination for AI
7. Ethics, Equity and Inclusion	· Ethical, responsible and inclusive AI development and deployment
	· Inclusivity and national values in AI development and deployment
	· Public AI literacy

AI Digital Infrastructure

The development of a robust AI-ready national digital infrastructure is critical to supporting Kenya's aspirations in artificial intelligence. This involves establishing advanced connectivity systems, including 5G networks and cloud computing services, to create a seamless and reliable digital environment. Additionally, the establishment of compute infrastructure, particularly the expansion of local data centers to facilitate high-performance computing and secure data storage is necessary for AI applications. Moreover, the adoption of green energy sources to power AI infrastructure ensures sustainability and aligns with global efforts to reduce carbon footprints in technology sectors. To complement this, Kenya will explore the establishment of domestic manufacturing facilities for AI-specific hardware to reduce dependency on imports and build local expertise. Equally essential is a strong cybersecurity infrastructure to safeguard digital systems, AI models, and sensitive data from malicious threats. These initiatives can be accelerated through strategic partnerships and collaborations with international tech firms, research institutions, and regional organizations.

Data

A robust data governance framework is the cornerstone of Kenya's AI ecosystem, enabling effective management and ethical use of data. This framework will ensure transparency, accountability, and security in data handling while fostering secure data sharing among stakeholders, including the public and private sectors. Access to quality AI training datasets is vital for the development of reliable and contextually relevant AI systems. This requires investment in the collection, annotation, and curation of diverse datasets that reflect Kenya's unique demographics, environments, and economic contexts. These efforts will enable Kenya to position itself as a hub for data-driven innovation while addressing issues of data privacy and sovereignty.

AI R&D and Innovation

Building AI R&D capabilities is crucial for fostering innovation and positioning Kenya as a leader in artificial intelligence. This involves establishing research hubs, funding academic and industry collaborations, and promoting open research practices. AI innovation will be driven by policies and incentives that encourage the development of novel solutions tailored to local challenges, such as agriculture, healthcare, and education. Scaling local AI enterprises requires targeted support for startups and SMEs, including access to funding, mentorship, and incubation programs. Creating a vibrant market for local AI solutions will further stimulate innovation and scale Kenyan AI solutions, increasing Kenya's competitiveness and contributing to the achievement of Kenya's economic growth goals.

Talent Development

The foundation for AI excellence lies in cultivating foundational AI skills in schools, integrating basic programming, computational thinking, and ethics into national curricula. Specialized AI skills in tertiary institutions and industry will be critical for producing experts in machine learning, data science, and AI policy. Partnerships with tech firms and international institutions can accelerate AI talent development and placement, providing real-world experience and job opportunities. Additionally, facilitating the acquisition of quality foreign AI talent through simplified immigration policies and attractive working conditions can help bridge the skills gap while fostering knowledge transfer to local professionals.

Governance

A comprehensive policy framework for AI and emerging technologies is necessary to provide direction and coherence in Kenya's AI strategy. This framework must include agile AI legal and regulatory structures that evolve with the rapidly changing technology landscape. The development of AI risk and safety frameworks will ensure that Kenya develops trustworthy AI systems that operate securely and ethically, minimizing potential harms. Effective stakeholder collaborations between government, academia, civil society, and industry are essential to align

AI initiatives with national priorities and ensure accountability in the governance of AI technologies.

Investments

Both private sector investments in AI and public sector investments in AI are crucial to drive innovation and scale solutions. Incentives such as tax breaks, grants, and innovation funds can attract private capital, while government funding can support foundational research and infrastructure development. Positioning Kenya as an investment destination for AI involves enhancing the ease of doing business, promoting the local AI ecosystem, and showcasing success stories to international audiences. These efforts will help establish Kenya as a regional hub for AI innovation and entrepreneurship.

Ethics, Equity, and Inclusion

Promoting ethical, responsible, and inclusive AI development and deployment ensures that Kenya's AI systems align with national values and global standards. Inclusivity in AI development and deployment focuses on addressing disparities, enabling participation from underrepresented groups, and ensuring equitable benefits across all communities. Enhancing public AI literacy is key to fostering trust and informed engagement, empowering citizens to understand and influence AI systems that impact their lives. By embedding ethical principles and inclusivity at every stage, Kenya can develop an AI ecosystem that reflects its diversity and supports sustainable, equitable growth.

For each of the strategic themes, an overall goal was developed. The selected high priority options for each theme were organised into objectives and flagship projects to be pursued to achieve the overall goal as outlined in the next section.

5.2. Goals, Objectives, Flagship Projects, Outcomes and KPIs

The following tables show the goals, objectives and flagship projects for each strategic theme. The tables also show the intermediate outcomes and KPIs for each of the themes. The ultimate outcomes are shown together with the overall goal.

1. AI Digital Infrastructure

Goal 1: Modernise the national digital infrastructure for AI access and development

Ultimate Outcome 1: High-capacity digital infrastructure for AI access and development

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
1.1 Invest in the setup and expansion of AI-ready digital infrastructure across the country	1.1.1 Implement a National Broadband Expansion Program (high-speed internet, 5G networks, etc.)	1. Increased and uninterrupted access and coverage of broadband connectivity	● % national broadband connectivity coverage
	1.1.2 Build robust edge computing capabilities to support AI research, development, and deployment	2. Increased penetration of Edge AI contextualised devices	● No. of devices that can run AI models on the edge infrastructure

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
1.2 Enhance High Performance Computing (HPC) clusters	1.2.1 Build three TIA 942 (ANSI standard) AI-capable data centres within 5 years	3. Increased local compute power 4. Enhance capacity for training models at a local infrastructure level	● No. of local data centres meeting the TIA 942s standard (ANSI standard) / (GPUs) ● % of public sector data centre compute capacity integrated into the AI HPC cluster
1.3 Increase the supply and use of green energy sources to power AI infrastructure, ensuring sustainability and reducing environmental impact	1.3.1 Review power supply to digital infrastructure and enhance the ratio of green energy	5. Increased % contribution of green energy powering AI infrastructure.	● % of green energy powering data centres
1.4 Develop domestic manufacturing facilities for AI-specific hardware, such as specialised chips and semiconductors, to reduce reliance on foreign technology providers	1.4.1 Establish more local device assembly centres	6. Reduced cost of smart devices utilised in the AI lifecycle	● Decrease in average cost of a computing device
	1.4.2 Establish a national semiconductor manufacturing facility to produce AI-specific chips domestically within five years	7. Increased availability of semiconductors for use locally	● Number of semiconductors manufactured
	1.4.3 Leverage on AfCTA and regional regulatory frameworks and incentives for regional trade to support the manufacturing sector	8. Export semiconductors regionally and continentally	● Number of semiconductors exported
		9. New jobs from technology assembly and manufacturing	● No. of new jobs in technology assembly and manufacturing

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
1.5 Establish robust national cybersecurity infrastructure	1.5.1 Establish a multistakeholder taskforce within the proposed NSOC framework to respond to AI-specific emerging threats 1.5.2 Implement advanced AI- specific threat detection and response systems across critical sectors	10. Enhanced national information security through advanced AI-specific threat detection and response systems across critical sectors	● 100% pass rate on cyber security audits and effective resolutions of detected threats
1.6 Forge partnerships and collaborations to develop and improve AI hardware and software	1.6.1 Create partnerships with other countries and global tech companies for knowledge transfer and development of digital infrastructure development for AI 1.6.2 Create collaborations between the government and the private sector to ensure that AI technology supply chains remain robust and innovative 1.6.3 Create partnerships with global tech companies to combat AI threats emerging from misinformation and disinformation	11. Implemented PPP projects	● 2 PPP projects in the next 5 years

2. Data

Goal 2: Establish a robust and sustainable data ecosystem for AI and innovation

Ultimate Outcome 2: Enhanced dataset quality, useability, shareability and sovereignty

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
2.1 Create a robust and responsive data governance framework	2.1.1 Develop a national data policy and strategy informed by best practices 2.1.2 Create a legal sharing framework for all stakeholders to share data with appropriate incentives 2.1.3 Establish an AI-task force within the proposed Data Governance Office Coordination Committee with representation from key data actors in selected in MCDAs, counties (CoG), private sector and civil society representatives, a Data Governance Office in the Ministry, and Data Officers 2.1.4 Enhance data residency requirements and ensure compliance with national data laws and regulations regarding data handling and storage 2.1.5 Classify, categorise and regulate access to data collected within Kenya and from Kenyans	1. Enhanced assessment of data sovereignty	● Comprehensive national data policy and strategy adopted ● % reduction in data silos in the public sector ● % of locally produced data meeting the standards of sovereignty ● % compliance with national data laws and regulations
2.2 Develop and implement secure data sharing, data access and data interoperability protocols	2.2.1 Create comprehensive national standards and protocols for data and metadata to ensure consistency and facilitate seamless data integration and exchange across government ministries, departments, and agencies (MDAs) as well as the private sector 2.2.2 In compliance with relevant laws, incentivize data sharing and collaboration among stakeholders, including private sector, research institutions, government agencies, and civil society organisations 2.2.3 Implement data initiatives (within guardrails/frameworks to prevent misuse and restricted national access and controlled cross border	2. Increased data sharing and access	● No. of local datasets openly shared in compliance with national laws and policies ● No. of formal data sharing agreements between institutions

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
		data flows)		
	2.2.4	Develop and implement secure data access frameworks that use encryption and authentication to safeguard sensitive data while allowing for wider accessibility		
2.3 Incentivize the creation of open high quality AI training datasets	2.3.1	Design and implement national data quality standards and protocols for data collection, cleaning, validation, and integration across sectors	3. Enhanced quality datasets for AI training	● % of usable datasets for AI models training
	2.3.2	Create local data labs with clean, validated, and integrated datasets for access by researchers and AI model developers		● Number of local data labs for AI training datasets

3. AI R&D and Innovation

Goal 3: Drive the development of cutting-edge localised AI models and solutions through a thriving local R&D and innovation

Ultimate Outcome 3: Increased contribution of AI businesses to GDP in priority sectors

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
3.1 Enhance and expand AI research capabilities at universities, TVETs, research centres, and innovation hubs across Kenya	3.1.1	Nurture R&D for public sector innovation	1. Accelerated local AI R&D and innovation capacity	● No. of published AI journal papers from local authors
	3.1.2	Establish AI research centres of excellence and innovation clusters across different regions		
	3.1.3	Engage the young workforce to advance research and development through research programs with more local innovation		● Number of patents, trademarks and copyrights registered for AI
	3.1.4	Establish partnerships between academia, industry, and government to facilitate AI R&D, innovation and evaluation		
3.2 Launch and implement an AI Innovators Program that fosters a robust innovation ecosystem for cutting-edge AI model	3.2.1	Position Kenya as a regional hub for localised AI model development	2. Increased AI entrepreneurs in the AI innovation ecosystem	● No. of AI entrepreneurs
	3.2.2	Enhance science parks and innovation districts to attract and support tech and AI companies and startups		

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
development and experimentation	3.2.3 Upgrade tech hubs to provide mentorship and incubation services 3.2.4 Develop and use local data sources for AI development ultimately building AI models tailored to priority local problems 3.2.5 Prioritise the development of AI models that solve pressing social problems and are inclusive, focusing on edge and small AI models	3. Increased local AI models	● % of AI models addressing local challenges
3.3 Develop the market for local AI solutions	3.3.1 Promote adoption and commercialization of locally developed AI solutions by creating regional and global market access opportunities 3.3.2 Incentivize local and regional markets to purchase locally manufactured AI products 3.3.3 Review Public Procurement Regulations to ensure that the Government prioritises the procurement of locally developed AI products 3.3.4 Incentivize edge AI model development and innovations	4. Expanded markets for local AI solutions	● % of market penetration for local AI solutions in Kenya ● No. of new regional markets for local AI solutions
3.4 Create an enabling environment for local AI companies to start and scale	3.4.1 Create collaborative AI innovation hubs 3.4.2 Create incubation and acceleration opportunities for new AI startups 3.4.3 Develop an AI resource toolkit for startups to provide resources on online platforms (e.g. access to data centres, access to public data, free cloud credits and development tools to 500 AI startups)	5. Enhanced commercialization of local AI models 6. New AI jobs in model development	● No. of local AI models commercially deployed in priority sectors ● No. of jobs created with AI models

4. Talent Development

Goal 4: Build a robust pipeline of competent and agile AI workforce for Kenya

Ultimate Outcome 4: Robust pipeline of competent and agile AI workforce

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
4.1 Integrate AI and data science education into school curricula at all levels	4.1.1 Develop an AI awareness and foundational skills awareness for schools 4.1.2 Roll out the AI awareness and foundational skills curricula in schools 4.1.3 Develop and implement as Training program for AI trainers program across different levels	1. Enhanced awareness of AI skills 2. Enhanced foundational AI skills	● No. of primary schools running AI and data awareness courses ● No. of secondary school with foundational AI and data skills training
4.2 Develop AI talent to meet emerging demands of the AI ecosystem	4.2.1 Develop and implement common courses on AI in tertiary education 4.2.2 Design and implement industry-driven quality specialised training programs that nurture local AI/data talent to meet industry needs (includes cybersecurity) 4.2.3 Develop and implement an AI training of trainers (AI TOT) program 4.2.4 Incentivize the development of AI talent 4.2.5 Create partnerships for AI talent development and placement	3. Enhanced deep AI and data skills	● % of workforce who achieve advanced AI and data certifications ● No. of universities with common courses on AI and data ● No. of TVET institutions with common courses on AI and data

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
	4.2.6	Create a policy for knowledge and skills transfer for specialised skills in implementing complex AI projects		
	4.2.7	Map AI talent for relevance and gaps		
4.3 Create partnerships for AI talent development and placement	4.3.1	Create a mentorship, apprenticeship and career development program to ensure desired growth		
	4.3.2	Enhance the Presidential Digital Talent Program (PDTP) and the Public Service Internship Program (PSIP) to allow for specialisation in AI and Data Analytics		
	4.3.3	Partner with existing innovation hubs and research centres regionally and globally to enhance access to postgraduate opportunities in AI		
	4.3.4	Implement PPPs in talent development		
4.4 Acquire quality foreign AI talent	4.4.1	Develop and implement a national AI talent acquisition program to fill gaps	4. Increased AI capacity in Kenya	● No. of foreign AI professionals acquired
	4.4.2	Review foreign policy regarding work visas to prioritise AI talent acquisition		

5. Governance

Goal 5: Establish an agile governance and adaptable legal framework for AI

Ultimate Outcome 5: Agile governance and adaptable legal framework for AI

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
5.1 Develop a harmonised national policy framework for AI and emerging technologies	5.1.1	Develop a national AI and emerging technologies policy that aligns with the AI strategy	1. Smooth implementation of AI and emerging technology projects	No. of policies implemented that form a harmonised framework for AI and emerging technology.
	5.1.2	Develop a national cybersecurity policy		
5.2 Develop risk and safety frameworks to govern AI development and deployment (technical)	5.2.1	Develop local ethical and safety standards in AI development and deployment	2. Enhanced risk and safety standards for trustworthy AI development and employment.	No. of ethical and safety standard policies and regulations adopted.
	5.2.2	Implement AI ethical and safety standards through conformity assessment schemes and technical specifications/regulations		
	5.2.3	Develop a national AI risk and safety institute		
5.3 Revise and develop agile legal and regulatory frameworks to meet the demands of AI	5.3.1	Review relevant legislations (employment and labor relations, IP, computer misuse and crimes, etc.) to reflect the demands of the AI and emerging technology	3. Enhanced conformity of legislation and regulations to meet dynamic development of AI and emerging technology.	No. of laws reviewed and enacted to meet the context of AI and emerging technology.
	5.3.2	Harmonize East and Central Africa data laws, tax laws, cyber security laws for secure and compliant cross-border data transfer and to enhance competitiveness in AI		

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
	5.3.3	Proactively implement a soft regulatory framework for AI		
	5.3.4	As AI matures in Kenya, develop an AI and Emerging Technology Act and regulations		
	5.3.5	Develop a flexible regulatory environment through the use of regulatory sandboxes to inform the development of AI regulatory framework and standards		
5.4 Pursue collaborative intra- and inter-government, non-governmental, and private sector AI governance approaches	5.4.1	Develop and implement an AI and emerging tech diplomacy program	2. Enhanced partnerships and collaborations in AI and emerging tech	No. of value-adding partnerships and collaborations with regional and global AI/emerging tech entities
	5.4.2	Promote regional and international cooperation to share knowledge, align AI standards and collaborate on AI challenges ensuring Kenya's active participation in regional and global AI and emerging tech ecosystem		
	5.4.3	Enhance participation in AI policy making and programming processes to include the public, developers and consumers	3. Enhanced public support and buy-in of AI policies and programs	No. of government led AI programs that target public buy-in of policies and programs.

6. Investments

Goal 6: Strategically accelerate public and private investments in AI

Ultimate Outcome 6: Increased investments in AI

Objectives	Flagship Projects		Intermediate Outcomes	KPIs
6.1 Incentivize investments in AI from both local and foreign private investors	6.1.1	Leverage on PPPs to advance investment in localised AI and tech solutions (e.g. public and private sector partnering with Venture Capital firms)	1. Increased investments in the AI ecosystem	● Amount of investments flowing into the 100 promising AI-related ventures (US$ m)
	6.1.2	Review and update AI policy and regulatory frameworks to create a favourable investment environment for AI development		● Amount of private sector investments in government-led AI initiatives (US$ m)
	6.1.3	Incentivize pension funds, public capital markets, and local and international private sector to invest in the local AI R&D and innovation ecosystem		
	6.1.4	Implement through PPPs an investor education program to train at least 1,000 potential investors on evaluating and investing in AI solutions		
6.2 Re-orient public resource allocation to prioritise investments in AI	6.2.1	Create a national AI and emerging tech innovation fund (from the R&D 2% of GDP in NRF) to provide grants and financial support in AI development	Growth in the local tech/AI ecosystem	● No. of AI startups in SEZs
	6.2.2	Create AI Special Economic Zones (SEZs)		● No. of AI startups funded with at least $10m in 5 years

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
6.3 Position Kenya as an investment destination for AI	6.3.1 Market Kenya as an investment destination for AI 6.3.2 Promote success stories to showcase at least 50 successful tech startups, inspiring investment in the AI sector	2. Increased foreign direct investment (FDI) for AI	● Amount of FDI into AI SEZs ● No. of success stories of AI investment

7. Ethics, Equity and Inclusion

Goal 7: Foster a culture of ethical, equitable, and inclusive AI development and deployment

Ultimate Outcome 7: Enhanced ethicalness, equity and inclusiveness of AI solutions

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
7.1 Promote ethical, responsible and inclusive AI development and deployment	7.1.1 Establish a mandatory ethical impact assessment process for AI technologies for public sector 7.1.2 Update and develop guidelines for accountable public sector AI procurement and deployment 7.1.3 Develop sector-specific standards and requirements on ethical AI development and deployment that are aligned to the national values and includes vulnerable groups 7.1.4 Develop a complaints and redress mechanisms for citizens to report AI-related concerns (e.g. CAJ/Ombudsman)	1. More humancentric, safer and inclusive AI solutions	Reduction in reported No. of incidents involving unsafe or harmful AI behaviours (such as data breaches, privacy violations, etc.)
7.2 Promote inclusivity and national values in AI development and deployment	7.2.1 Implement data labelling and classification policies that address bias 7.2.2 Develop an ethical framework and define ethical principles and considerations 7.2.3 Sponsor and spearhead inclusivity in the data value chain	2. Demonstrated tangible benefits of AI solutions for all Kenyans	Increased % of representative datasets

Objectives	Flagship Projects	Intermediate Outcomes	KPIs
	7.2.4 Maintain a public repository of ethical AI use-cases and best practices to guide development and deployment of AI in the country		No. of ethical AI use-cases
7.3 Enhance public AI literacy	7.3.1 Launch a public awareness campaign on AI rights, disinformation, misinformation, protection and safe development 7.3.2 Educate policymakers and civil servants on ethical, equitable and inclusive AI		Increase in Number of public awareness campaigns and training workshops on inclusive AI

5.3 Priority Use Cases

The Kenyan Government and ecosystem stakeholders have identified several high-priority use cases across key sectors aligned with Kenya's Bottom-up Economic Transformation Agenda (BETA) and corresponding pillars in Kenya's Vision 2030. The key sectors prioritized for this strategy include Healthcare, Education, Agriculture, Public Service Delivery, Security, Micro, Small and Medium Sized Enterprises (MSMEs) and the Creative Sector. Use cases for these sectors will be prioritized based on their feasibility, potential impact, and alignment with existing data availability and the strategic goals and objectives.

In this vein, the government has already identified use-cases within the AI ecosystem in the realm of natural language processing regarding large language models: In healthcare, two critical use cases are under consideration: a maternal health chatbot in local dialects to provide accurate pregnancy and childbirth information, and an expanded disease advisory system building on the existing platforms. The education sector has prioritized intelligent tutoring systems and multilingual teacher training modules to improve access and quality of education. For agriculture, emerging use cases include translating existing data into farmer-friendly formats through audio in local languages and developing AI-powered fertilizer recommendation systems. Public sector use-cases include multilingual chatbots and virtual assistants to improve service delivery, while the creative sector could benefit from an AI-powered national digital creative platform to enhance market access and support local content creators.

5.4 Summary of Strategy

The AI strategy can be summarised in the following strategy house.

Vision: A regional leader in AI R&D, innovation and commercialization for inclusive socio-economic development.

Ultimate Outcomes

1. High-capacity digital infrastructure for AI access and development
2. Enhanced dataset quality, useability, shareability and sovereignty
3. Increased contribution of AI to GDP in priority sectors
4. Robust pipeline of competent and agile AI workforce
5. Agile governance and adaptable legal framework for AI
6. Increased investments in AI
7. Enhanced ethicalness, equity and inclusiveness of AI solutions

Priority Sector Use Cases (Agriculture, Healthcare, Education, Security, MSME, Public Service Delivery, Creative Industry)

Pillars

AI Digital Infrastructure: Modernise the national digital infrastructure for AI access and development	**Data:** Establish a robust and sustainable data ecosystem for AI and innovation	**AI R&D and Innovation:** Drive the development of cutting-edge localised AI models and solutions through a thriving local R&D and innovation

Enablers

Talent Development: Build a robust pipeline of competent and agile AI workforce for Kenya

Governance: Establish an agile governance and adaptable legal framework for AI

Investments: Strategically accelerate public and private investments in AI

Ethics, Equity and Inclusion: Foster a culture of ethical, equitable, and inclusive AI development and deployment