Carnegie Mellon University Africa

AI and the Workforce in Africa

Realizing the Region's Potential Through Public and Private Sector Collaboration

Contents

Preface

As Africa stands on the cusp of a technology-led renaissance, the transformative potential of artificial intelligence (AI) offers unique opportunities to accelerate economic growth, enhance productivity, and address longstanding developmental challenges. This paper examines the state of AI readiness across the African continent, with a focus on empowering its young and dynamic workforce to harness AI's capabilities through skills development, strategic partnerships, and just and fair government policy. By leveraging public-private partnerships (PPPs) and private sector innovation, Africa can unlock its economic potential, enabling sustainable development and global competitiveness.

1. **Immediate:**
   Digital literacy and skills training
2. **Medium-Term:**
   Curriculum reform, regulatory frameworks
3. **Long-Term:**
   National & regional AI councils, infrastructure investment

The paper explores the current AI landscape in Africa, assessing infrastructure, skills, and regulatory frameworks while identifying gaps and opportunities. Given the critical place of the workforce in national economies, the paper advocates for upskilling programs, digital literacy initiatives, and collaborative ecosystems to ensure AI adoption is equitable. Through case studies and real-world insights, we highlight how PPPs can bridge resource constraints to achieve scalable AI solutions tailored to African needs. The immediate focus may be on agriculture, finance, education, and healthcare with substantial gains expected even in the large informal or gig economy.

Our analysis underscores the need for a human-centric approach to AI adoption, prioritizing workforce readiness to maximize economic impact. Collaboration between governments, businesses, and educational institutions, can help African countries build resilient, AI-ready workforces capable of offering innovation and achieving prosperity.

To realize this possible bump to the continental economy over the next five years through AI adoption, we propose a phased approach with immediate, medium-term, and long-term actions to build an AI-ready workforce and the associated business environment. The suggested initiatives range from forming national and regional councils to guide policy and curricula, to investing in skills development, infrastructure and PPP, and modernizing across all sectors – ultimately positioning Africa as a leader in the global AI-enabled digital value chain.

These actionable recommendations provide a roadmap for policymakers, industry leaders, and local communities to harness AI's potential, while ensuring Africa's workforce drives economic transformation. By joining this endeavor, stakeholders stand to ensure that AI becomes a catalyst for growth and sustainable progress across the continent.

1. AI Readiness in Africa

AI is increasingly reshaping economies, so Africa stands at a defining juncture: can it capture and capitalize on this technological revolution's leapfrogging potential. Much of the developing world – encompassing most countries across Africa, South America, and Asia – contribute less than 5% in AI research outputs and total grants, and thus significantly lag in critical resources for progressing AI adoption.[1] However, signs of progress are evident.

While the continent's adoption of AI is still emerging compared to world leaders, recent years have witnessed remarkable advancement. Countries such as South Africa, Nigeria, Kenya, and Ghana are spearheading AI implementation, leveraging these technologies to address local challenges in healthcare, agriculture, education, and governance. These technological advances, combined with Africa's youthful demographic, where the median age is just 19.3 years, create fertile ground for digital innovation.[2] Urbanization is intensifying, with nearly half the population now living in cities and this proportion expected to rise sharply by 2050, further concentrating both talent and infrastructure.[3]

However, Africa's AI uptake is more targeted, often driven by specific needs rather than broad-based transformation. This focused approach reflects both the continent's resource constraints and its innovative spirit, as African nations tailor AI applications to address pressing social and economic issues.

Yet, significant challenges remain. The digital divide persists, with vast differences in internet access between urban and rural areas and among African regions. While there is a growing pool of innovative youth, there are also evident gaps in education, digital literacy, and

specialized AI skills. Many sectors face shortages of skilled professionals, while others experience a surplus of labor without the requisite expertise for the digital economy. Unemployment and underemployment, particularly among young people, remain pressing concerns, underscoring the need for targeted workforce development and strategic growth strategies.

This paper will provide critical insights benchmarking Africa's progress against global AI trends. It will also outline how a workforce can play a central role in driving development and prosperity across the continent and provide recommendations to help policymakers and businesses prepare for an AI-driven future.

1.1 State of Africa's AI Readiness: Infrastructure as the Foundation

Africa's AI readiness is not merely a matter of digital innovation or economic competitiveness; it is intrinsically tied to the future of its workforce. The ability of African countries to prepare for and benefit from AI will directly influence how they grow jobs, develop skills, and enable innovation in the years ahead. Reliable digital infrastructure, resilient data ecosystems, and effective governance frameworks are not just enabling conditions – they are workforce essentials. Without dependable connectivity, compute capacity, and regulatory clarity, even the most talented individuals cannot access, develop, or benefit from AI tools.

Similarly, policy action can help ensure that AI tools are deployed in a way that supports local job creation and promotes wider economic growth. As countries invest in AI readiness, they can unlock pathways for training, entrepreneurship, and employment in key sectors like agriculture, health, and education – all of which are increasingly infused with AI technologies. Building AI readiness through digital transformation is a prerequisite for effective workforce development, allowing Africa's young and growing population to participate meaningfully in the global digital economy.

1.1.1 Understanding AI readiness across Africa

Currently, Africa accounts for only 2.5% of the global AI market, which was valued at USD16.5 trillion in 2024.[4] Despite this modest share, recent estimates indicate that AI could boost Africa's economy by USD2.9 trillion by 2030, equivalent to an annual Gross Domestic Product (GDP) growth increase of three percent.[5] Such a boost could translate into substantial development gains for the continent, creating employment opportunities and lifting millions out of poverty.

However, the readiness of African countries to embrace and benefit from AI varies. Recent AI readiness indices highlight a widening but actionable gap across the continent:

Table 1: Summary of Latest AI Readiness Rankings for African Countries

Country	Oxford Insights Government AI Readiness Index (2024) - Africa[6]		IMF AI Preparedness Index (2023) - Africa[7]		Oxford Insights (2024) - Global[8]
	Rank	Score	Rank	Score	Rank
Egypt	1	55.63	-	0.39	65
Mauritius	2	53.94	2	0.52	59
South Africa	3	52.92	3	0.49	72
Rwanda	4	51.25	5	0.44	78
Seychelles	6	44.77	1	0.53	-
Tunisia	7	43.68	4	0.47	92
Kenya	8	43.56	-	0.45	93
Nigeria	9	43.33	-	0.34	94
Ghana	10	43.3	8	0.42	95
Morocco	12	41.78	7	0.42	101
Cabo Verde	15	40. 67	6	0.43	-
Algeria	16	39.06	-	0.37	115
Botswana	18	38.16	10	0.41	120
Côte d'Ivoire	21	34.69	-	0.37	-
Namibia	25	33.28	9	0.41	-
Angola	37	26.91	-	0.26	169

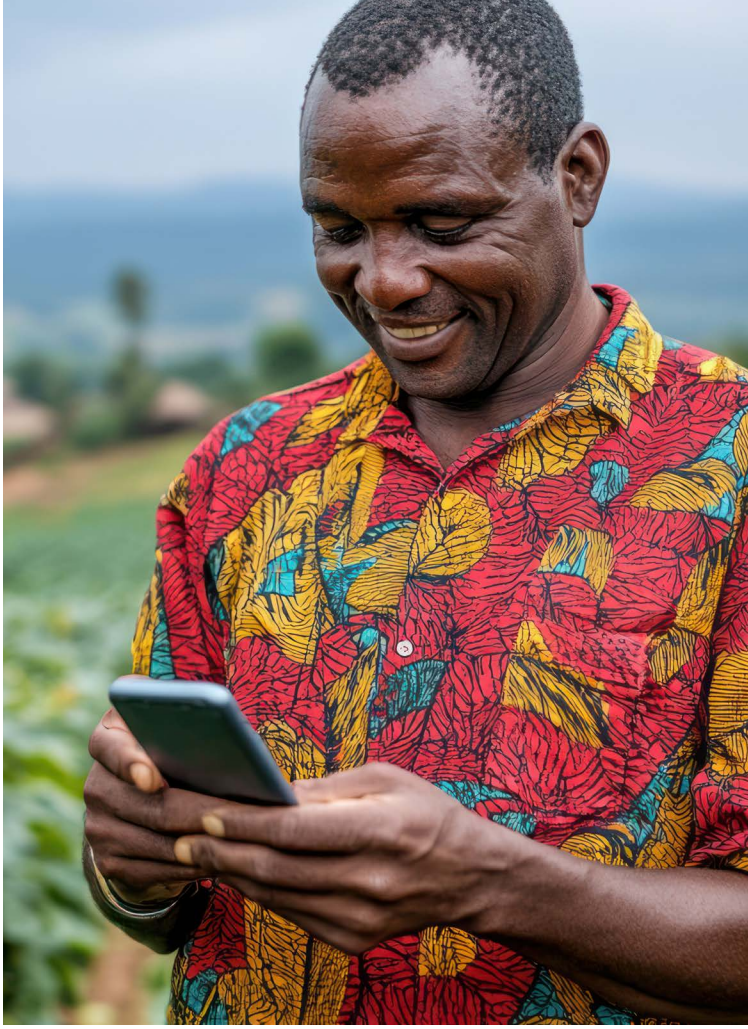
Note: The latest available data from the International Monetary Fund (2023) and Oxford Insights (2024) is presented, based on digital infrastructure, human capital, technological innovation, and legal frameworks.

The indices measure the ability to adopt and benefit from AI by assessing over 40 indicators across three pillars: Government, Technology Sector, and Data & Infrastructure. They consider the strength of national AI strategies, regulatory and ethical governance, the maturity of the tech sector, and the availability of quality data and digital infrastructure such as broadband and compute capacity. High-performing countries tend to combine strategic vision with strong R&D ecosystems, digital skills, and data systems. A higher index score can signal readiness not just to scale AI, but to use it responsibly to support innovation, service delivery, and workforce transformation.

As the above indices indicate, within the region countries such as Egypt, Mauritius, South Africa, and Rwanda stand out as front-runners, thanks to stronger digital infrastructure and proactive policy environments. Others, such as Botswana, Morrocco, and Seychelles are beginning to close the gap: highlighting emerging opportunities for growth. This growth can be achieved if Sub-Saharan Africa continues to demonstrate progress in, according to Oxford Insights, the region's greatest strength - the "Data & Infrastructure" pillar; and especially in areas such as data availability and digital infrastructure.

Moreover, in 2024, twelve new national AI strategies were published or announced globally. Notably, more than half of these came from lower-middle-income and low-income countries such as Ethiopia, Zambia, Nigeria, Sri Lanka, Uzbekistan, and Cuba.[9] This trend reflects growing momentum among economies that have historically lagged in AI governance. In July, the African Union released its own continental AI strategy, aiming to "harness AI for Africa's development and prosperity."[10] These developments signal that Africa is on an upward trajectory, advancing in AI strategy and governance.

Lower scores in the "Government" and "Technology Sector" pillars point to areas needing further investment. This is supported by Cisco's organizational AI Readiness Index, which revealed that, for example, only 18% of organizations in South Africa are fully prepared to deploy and leverage AI-powered technologies.[11] Africa's data center power capacity is just over 400 MW for a population of 1.4 billion,[12] with South Africa alone accounting for nearly half.[13] To meet rising demand, the region will require an estimated 1,000 MW in capacity and more than 700 additional data center facilities in the coming decade, alongside broadband and energy grid upgrades.[14]



Crucially, these investments won't just enable AI, they will also create jobs in construction, energy, and digital services – offering governments and the private sector a dual opportunity to boost both AI readiness and economic growth.

Connectivity gaps persist as well. Although mobile coverage has expanded significantly, 62% of Africa's population, about 860 million people, remain offline.[15] Additionally, only 0.02% of internet content is available in African languages, severely limiting local relevance and representativeness in global datasets.[16] This digital exclusion can leave entire communities underserved by widely available AI models.

Strengthening legal and governance frameworks is equally critical. The African Union's Continental Data Policy Framework lays out a unified vision for data use across the continent, forming a cornerstone of the broader AI Strategy.[17] The framework emphasizes the importance of national data governance, with a focus on privacy, cybersecurity, and high-quality datasets to support AI development. Initiatives promoting cross-border data flows and open data ecosystems are especially important for regional integration. Momentum is building, with active support for the Network of African Data Protection Authorities (NADPA),[18] and countries like Mauritius, Nigeria, and the Dubai International Financial Centre (DIFC) planning to join the Global Cross Border Privacy Rules (CBPR) Forum.[19] These developments suggest Africa is not only investing in the technical infrastructure for AI, but also laying the legal foundations to ensure it is trustworthy and interoperable.

62%

of Africa's population (around 860 million people) remain offline.

Mobile coverage is expanding but internet access is still limited.

0.02%

of internet content is available in African languages

This creates a major barrier to inclusion and local relevance.

1.2 Africa's Leapfrogging Potential

Overcoming these infrastructure challenges can have a real impact. A recent study from Access Partnership estimates that AI could unlock up to USD 136 billion in economic value by 2030 across just four Sub-Saharan countries – Ghana, Kenya, Nigeria, and South Africa.[20] These gains, explored in more depth in further sections, are expected to be concentrated in high-impact sectors:

- Agriculture, through precision farming and AI-based advisory tools;
- Financial services, via AI-enabled credit scoring, risk modeling, and fraud detection;
- Healthcare, with diagnostic support, telemedicine, and supply chain optimization;
- Consumer-facing industries, including retail and hospitality, through personalized marketing, inventory optimization, and e-commerce.

These benefits will be driven by a mix of productivity improvements, cost reductions, and the creation of new digital markets and revenue streams. However, they will only materialize if supported by coordinated investment in an AI-ready workforce, digital infrastructure, and policies that incentivize innovation.

Africa's demographic trends can help catalyze an AI leapfrogging opportunity. With Africans accounting for 42% of the world's youth and 75% of the continent's population under the age of 35 by 2030, the region holds the world's largest potential AI workforce.[21] The continent is projected to host one-quarter of the world's working-age population by 2050.[22] Young Africans already demonstrate strong tech engagement: 78% report using AI tools weekly, higher than in Europe or the United States.[23] But much of Africa's workforce is still rooted in agriculture, informal trade, and service sectors that have not yet seen deep automation. By laying the right foundations, Africa can leapfrog directly into a future of AI-enabled employment, capitalizing on the region's digital enthusiasm and wave of youth-led entrepreneurship.

Young Africans are entrepreneurial and eager to tap into emerging global economic opportunities through technology. Surveys show over 75% of African youth plan to start a business in the next five years.[24] Nearly 80% of new startups are digital-first, and women in Africa are twice as likely to be new business owners compared to the global average.[25] AI can help these entrepreneurs automate tasks, analyze data, develop new products, and reach new markets – if the right digital infrastructure and skills systems are in place.

Success Box: Africa's Leapfrogging Capability Evident in Fintech

Africa also has a successful precedent to emulate: the sharp rise of fintech has fundamentally reshaped the continent's financial sector and catalyzed economic growth. Over the past decade, fintech companies have bridged gaps left by limited traditional banking infrastructure, connecting millions of people and businesses to essential financial services through secure, innovative platforms.[26] It has driven financial inclusion, enabled digital payments, expanded access to credit, and empowered small businesses to participate in the formal economy. Today, Africa's fintech sector is one of the world's fastest-growing, with revenues projected to increase thirteenfold by 2030 and nearly half of all African fintech companies founded in just the past six years.[27] The sector's rapid growth has translated into real employment gains: in 2022, externally funded African tech startups, many of them fintechs, created over 34,000 jobs, nearly double the figure from the previous year.[28] This transformation has not only improved financial access and efficiency but also laid the groundwork for broader digital innovation, supporting efforts towards the secure infrastructure needed to enable advanced technologies such as AI across the continent.

1.2.1 AI Innovation Hubs: Beyond the Big Four

While South Africa, Nigeria, Kenya, and Egypt remain the primary digital powerhouses on the continent due to their more established tech ecosystems, other nations are emerging with specialized AI strengths, as aforementioned AI readiness indices show. For instance:

- Rwanda has gained international recognition for its governance-led approach to AI. The establishment of the Centre for the Fourth Industrial Revolution (C4IR) in Kigali and the hosting of the 2025 Global AI Summit on Africa reflect a commitment to AI innovation.[29]
- Mauritius, consistently ranked as Africa's most AI-ready nation, leverages its digital economy for sector-specific applications in tourism and financial services.[30]
- Ghana is making its mark through the presence of the Google AI Lab in Accra and through public-private collaborations that span education, agriculture, and service delivery.[31]
- In North Africa, Tunisia's vibrant startup ecosystem is thriving with ventures like InstaDeep, which has garnered global recognition for its work in deep learning.[32] Morocco is investing strategically in compute infrastructure, including supercomputers and developing a national AI strategy to anchor its digital transformation agenda.[33]
- Senegal, Côte d'Ivoire, and other West African nations are following suit with growing investments in AI for education, climate resilience, and robotics.

These developments represent a welcome diversification of Africa's AI landscape. Through localized strengths in governance, academic excellence, and entrepreneurial energy, these countries are well on their way to broadening the continent's innovation base and supporting new market entrants.

1.2.2 Reversing the Brain Drain: Budgeting Toward Knowledge Economies

Africa's long-standing challenge of brain drain, where an estimated 70,000 skilled professionals leave the continent annually, may find a turning point through AI and the digital economy.[34] With the rise of remote work, African talent can now access global markets without relocating, enabling them to earn foreign income while contributing locally.

Remote work platforms are facilitating this shift, allowing skilled Africans to secure high-paying roles abroad and reinvest in their home economies. Diaspora engagement initiatives such as the African Union's talent forums are mobilizing mentorship, capital, and knowledge sharing from African professionals abroad.[35]

By investing in infrastructure, offering meaningful opportunities, and building purpose driven AI agendas, Africa can move from brain drain to brain circulation, turning a long-standing challenge into a strategic advantage. Governments can amplify these efforts by recognizing foreign qualifications, streamlining visa procedures for diaspora-led enterprises, and offering tax incentives for investments in local tech ecosystems. As infrastructure improves, more African talent may choose to stay, return, or engage remotely, turning a long-standing challenge into a strategic asset.

Current public investment in research and development is inadequate across the African continent. Many countries allocate less than 0.5% of GDP to R&D, limiting their ability to generate homegrown AI innovations and talent.[36] These budgets are geared to increase in the next few cycles, as bridging the skills gap will require strategic reforms. Put into perspective, AI upskilling is gaining traction in policy forums, including national digital strategies and institutional agendas, and will thus increasingly make its way to a more substantial national budget on the continent. Governments can also allocate budgets to tap diaspora expertise through talent return incentives and remote mentorship programs. What is clear is that transparent monitoring and evaluation frameworks of government spending will be crucial to ensure accountability and impact.

AI readiness is not simply a technology benchmark; it is a foundational workforce imperative. As countries race to align with technological shifts, assessing readiness across domains like infrastructure, data, governance, and skills has become essential for identifying where strategic budgeting and investment is most needed. For Africa, this means translating its youth advantage, growing entrepreneurship, and early sectoral progress into coordinated action that builds capacity. Done right, these investments will not only generate jobs, particularly through AI infrastructure and services, but also equip African workers to lead in shaping the future of work. That is the true test and leapfrogging opportunity of AI readiness in Africa.

70,000

Skilled professionals leave Africa every year

Brain drain continues, but AI and remote work are creating new opportunities to reverse the trend.

1 Active Diaspora

African Union talent forums mobilize diaspora expertise

Mentorship, capital, and knowledge sharing are powering local innovation.

<0.5% of GDP

Current R&D investment in most African countries

Insufficient funding limits AI innovation and talent development.

3 Policy Levers

Governments can boost brain circulation by

Recognizing foreign qualifications

Streamlining diaspora business visas

Offering tech investment tax incentives

2. Workforce Evolution

Globally, AI is expected to result in a net increase of 78 million jobs by 2030, as new roles emerge to replace those rendered obsolete.[37] In Africa, sectors such as healthcare, agriculture, finance, logistics, and education are already experiencing the early effects of AI augmentation. Startups are using AI to optimize crop yields, detect medical conditions, streamline government services, and provide remote education.

But realizing these benefits at scale depends on the continent's ability to upskill and reskill its labor force quickly and effectively. Africa must transition from passive adoption to active participation in the AI economy by developing a workforce capable not only of using AI tools but of building, adapting, and governing them.

The promise of AI is constrained by a multidimensional skills gap. This includes a shortage of advanced technical talent, limited digital literacy across much of the population, and a scarcity of hybrid professionals who combine sectoral expertise with technological fluency.[38] While a growing number of African countries have launched national AI strategies, their success depends on effective implementation, cross-sectoral collaboration, and policies that bridge gender, geographic, and socio-economic divides.

2.1 Emerging Roles and Sectoral Opportunities

AI is not simply changing how work is done; it is also creating entirely new job categories across a spectrum of African industries, as exemplified below:

Table 2: Evolving AI-Driven Job Roles Across African Sectors

Sector	Evolving Roles	Examples
Agriculture	• Precision farming experts • AI-based crop advisors	Startups such as UjuziKilimo[39] in Kenya and Farmcrowdy[40] in Nigeria use AI to deliver tailored, data-driven insights to smallholder farmers.
Cybersecurity	• AI-assisted threat intelligence analysts • Cyber forensics specialists	Safaricom has deployed AI to enhance customer verification and fraud detection.[41]
Healthcare	• Health data analysts • Medical image processors • Telehealth integration specialists	AI-powered diagnostic tools, like those used in Zimbabwe and Ghana, are helping to identify diseases such as breast cancer and tuberculosis early, improving survival rates and health system resilience.[42]
Financial	• AI-enabled fraud analysts • Alternative credit scoring modelers • Financial chatbot developers	Mobile money platforms like M-Shwari[43] and Branch[44] are already leveraging AI to offer low-cost credit services to previously unbanked populations.
Business Management	• Automated campaign managers • AI product strategists	mPharma uses AI to manage pharmaceutical supply chains, optimizing health logistics and operations.[45]
Quality Assurance	• Automated QA testers • AI model validators	South Africa's Entersekt applies AI in digital banking security, through its context-aware authentication technology.[46]
Education	• AI-driven curriculum design • Virtual tutoring • Education data analysts	Initiatives like RobotsMali[47] are helping local educators co-create digital learning experiences suited to Mali learners.
Creative and Governance	• AI ethics officers • AI governance analysts	African governments are incorporating AI into public administration, requiring talent to ensure ethical compliance and technical effectiveness.

These developments underscore the need for hybrid competencies that blend technical understanding with domain-specific knowledge, ethical reasoning, and local cultural fluency. They reflect a uniquely African application of AI: responsive to local needs, grounded in impact, and focused on inclusion and resilience.

These competencies have relevance in Africa's informal sector as well. The informal sector is not just the region's largest employer, representing up to 85% of all employment on the continent,[48] it is also a formidable opportunity for widespread AI adoption. From traders and farmers to transport providers and artisans, informal workers are already engaging with digital platforms that embed AI functionalities. AI-enhanced inventory management platforms like Wasoko[49] and Shopa[50], route optimization tools such as Ma3Route[51], and mobile-based credit scoring systems like Twiga Foods[52] are enabling new efficiencies and access to capital. Even low-tech entrepreneurs are using chatbots in local languages, AI-assisted business planning, and mobile outreach tools to grow their customer base.

Despite this progress, barriers remain. Many informal workers lack digital tools, connectivity, or the digital skills needed to engage effectively with AI. There are also risks of exploitation on gig platforms, data misuse, and exclusion.[53] Governments and ecosystem partners must design AI tools and training programs with affordability, language accessibility, and cultural relevance in mind. AI adoption in the informal economy should support dignity, opportunity, and upward mobility. An enabled and upskilled workforce will be able to identify local needs and competitively build scalable solutions – thereby increasing the capabilities of marginalized citizens to earn a living.

2.2 Prioritizing AI Learning and Skills

Africa's AI talent base, estimated at 5,000 professionals, remains small but is growing – expanding by 40% in 2023 alone.[54] Despite its vast potential, Africa faces an AI skills gap that spans technical expertise, foundational knowledge, and hybrid competencies. To reap the rewards of AI, the continent must cultivate a workforce capable not only of using AI tools but also of building, adapting, and governing them. On the technical side, demand is increasing for professionals skilled in machine learning, natural language processing, cloud computing, cybersecurity, and data analytics.

However, the skills challenge extends well beyond the need for high-level technical talent. Millions of workers across diverse sectors require basic AI literacy with the ability to understand, interact with, and derive value from AI-powered systems. For instance, farmers need to interpret AI-generated crop forecasts, community health workers must engage with diagnostic chatbots, and logistics professionals rely on predictive analytics to improve efficiency. According to the World Economic Forum, competencies such as analytical thinking, adaptability, and collaboration will be central to the future of work.[55] In addition, soft skills including ethical reasoning, cultural awareness, and a mindset of continuous learning are fundamental to ensure AI technologies are deployed in ways that support workers and contribute to economic growth.

The shift in job roles described above brings with it a reordering of which digital and technical skills matter most in the AI economy. In cybersecurity, for instance, generative AI is changing how tasks are performed. Workers can now configure firewalls using natural language instead of traditional command-line prompts, reducing both complexity and the risk of service disruption. This not only accelerates workflows but also makes it possible to place advanced security tools in the hands of staff with less technical training, widening the talent pool and making cybersecurity more accessible in resource-constrained environments.

Table 3: Skill relevance in the age of AI

Top 10 technical skills expected to **increase in relevance (% job roles)**	
100%	AI ethics and responsible AI
100%	AI learning
66%	Prompt engineering
20%	Large Language Models (LLM) architecture
20%	Agile methodologies
20%	Data analytics
11%	Machine learning
11%	Retrieval augmented generation
11%	TensorFlow
9%	Natural language processing

Top 10 technical skills expected to become **less relevant (% job roles)**	
31%	Basic programming and languages
18%	Content creation
18%	Data management
16%	Research information
13%	Documentation maintenance
13%	SQL
7%	Manual XML handling
7%	Manual Perl scripting
7%	Integration software
4%	Manual malware analysis

Top 10 technical skills expected to increase in relevance and top 10 technical skills expected to become less relevant (% job roles)

According to the AI-Enabled ICT Workforce Consortium, the top technical skills expected to grow in relevance, as showcased above, include AI learning and data fundamentals, each reflecting core enablers of human-AI collaboration across sectors:[56]

AI Learning

As AI evolves the workforce, it becomes urgent for organizations and individuals to prioritize AI learning to meet the in-demand AI skills. By embedding a culture of continuous AI learning in everything we do, it unlocks people's potential to use and innovate with AI systems. Nearly every role will soon involve interacting with AI tools – whether selecting models, interpreting outputs, or overseeing algorithmic decisions. Workers must understand not only how these tools function, but also their ethical implications and limitations. In Africa, where trust and cultural context are critical to adoption, this skill is especially important to prevent misuse and build legitimacy. AI learning is a direct path for people, organizations and communities to participate in the AI economy. A future shaped by AI must be one where the learning opportunity is for everyone, so no one is left behind in an AI-powered future.

Data Fundamentals

Data fundamentals are rising in importance because AI systems are only as effective as the data they're trained on. African professionals will need skills in data cleaning, labeling, visualization, and analytics – not just for developing AI, but for managing local datasets that represent their communities. Given the scarcity of annotated African-language corpora and geospatial data, local data stewardship will be a high-value capability.

Prompt Engineering

A relatively new but fast-growing discipline, which involves crafting inputs that guide generative AI systems to produce useful, ethical, and accurate outputs. As generative tools are deployed in African education, media, and customer service, workers who can communicate effectively with these systems will be in high demand. This includes roles like language localization specialists, especially important in multilingual contexts.

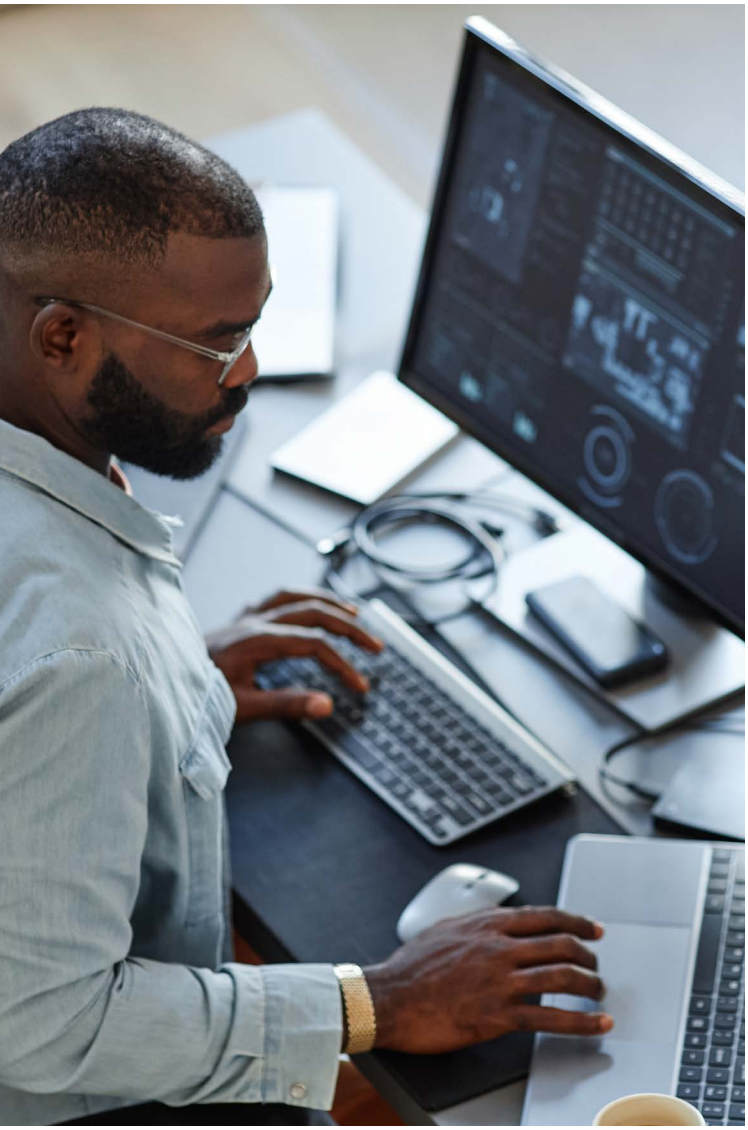
This evolution has clear implications for African training institutions. Curricula must move beyond basic coding courses toward applied, domain-specific AI use cases and ethics. There is opportunity for schools and governments to partner more closely with private sector – such as Cisco's Networking Academy – to align curricula and talent development with in-demand skills.[57]

Ultimately, the African AI skills agenda must focus not just on teaching technology, but on enabling workers to shape, critique, and govern that technology in ways that reflect African priorities and values. That is where the long-term competitive advantage lies.

2.3 Rethinking Education for an AI-Driven Future

In response to these challenges, several African governments have begun to take decisive action. Nigeria has committed to training 70% of its youth in AI by 2030,[58] Rwanda's National Skills Development and Employment Promotion Program is investing in technical education and apprenticeship opportunities,[59] and Kenya is embedding AI education within its national curricula.[60] While these initiatives mark important progress, they must be expanded, through tailored public-private partnerships, to reach underserved populations and updated regularly to keep pace with the evolving AI landscape.

A future-ready AI workforce in Africa begins with education reform. Yet current systems, especially at the primary and secondary levels, often lack the responsiveness and resources needed to prepare students for digital futures.



Education reforms should focus on curriculum innovation that introduces AI, coding, robotics, and data ethics across all levels of education. AI must be framed not just as a technical field, but as a tool that touches every discipline, from agriculture to art. Technical and Vocational Education and Training (TVET) institutions should embed AI-related training in their core offerings. These institutions are well-suited to equip learners with practical, job-ready skills in data labeling, chatbot support, and smart agriculture technologies.

Governments must also build lifelong learning ecosystems, through a cross-disciplinary and multistakeholder approach that encourages reskilling throughout life. This includes partnerships that support bootcamps, online learning, and micro-credentialing. Educators must be empowered through professional development to teach AI-related content, and schools must be equipped with adequate infrastructure. Crucially, education must be accessible to all. Programs should be designed for offline access, available in local languages, and specifically reach rural, low-income, and marginalized learners, including girls and persons with disabilities.

STEM (Science, Technology, Engineering, and Mathematics) enrollment in African tertiary institutions remains low in many countries. According to the World Bank, less than 25% of higher education students in Africa pursue STEM fields, with women constituting less than 30% of this group.[61] Accordingly, there is a need for increased investment in STEM education to support the continent's growing workforce and broader technological development. Given that 230 million jobs in Africa will require digital skills by 2030,[62] investment in STEM education must anticipate AI demand – especially as AI workloads require significant bandwidth, edge computing capacity, and power stability.

Put into perspective, across the continent, fixed and mobile network operators are licensed by national regulators, who often impose universal service obligations requiring them to connect schools, clinics, and public institutions. This framework creates a strategic opportunity for public-private collaboration, where companies like Cisco can align digital skills and infrastructure initiatives with national licensing requirements.

Beyond supporting curriculum reform through the Networking Academy, Cisco can aid in the benchmarking and adoption of several global best practices to Africa's context by:

- Partnering with regulators and licensed operators to deploy "digital learning packages" that bundle school connectivity with routers, classroom Wi-Fi, and secure access tools – similar to Cisco's Country Digital Acceleration Digital Village initiatives in India, which enabled remote and live teaching for students and entrepreneur training in the same facilities – committing to 50,000 man-hours across 12 institutes.[63]

- Developing model "Connected School" projects that combine infrastructure, educator training, and AI/STEM curricula as scalable national showcases, supported by Universal Service Funds or tied to telecom licensing incentives.

- Establishing regional teacher training hubs at existing teacher colleges to build educator capacity in AI and digital tools.

- Providing policy advisory support to telecom regulators, aligning digital inclusion mandates with measurable education outcomes and advocating licensing terms that explicitly support STEM skills development.

By embedding digital education and training into existing licensing obligations, such partnerships can help ensure that connectivity is not just delivered but meaningfully translated into future-ready skills and employment.

And the commercial incentives are there. The World Bank estimates a USD 11.1 billion market opportunity for digital skills training in just five African countries by 2030.[64] This highlights both the urgency and the opportunity for aligning education with labor market needs. Education is not just a pipeline to employment but an integral component of Africa's long-term AI competitiveness.

3. Building an AI Ecosystem: Shared Responsibilities for Public and Private Sector Actors

Strong partnerships across the public and private sectors are critical to successful AI adoption and workforce development in Africa. Governments and private actors have complementary roles:

governments provide regulatory oversight, strategic direction, and public investment in infrastructure and education, while private firms contribute technical expertise, capital, and scalable models. Already, companies from local startups to multinationals are heavily invested in Africa's digital capabilities. They are actively engaged in constructing digital infrastructure, promoting capacity-building initiatives, supporting the burgeoning AI ecosystem, and forging strategic partnerships with national governments and other stakeholders to deploy AI solutions across critical economic sectors.

These concerted efforts are in alignment with the Continental AI Strategy[65] endorsed by the African Union (AU) in July 2024, which emphasizes five key areas: harnessing AI's benefits, building capabilities, minimizing risks, fostering cooperation, and stimulating investment. Importantly, the Strategy calls for a multi-stakeholder approach involving national governments, the private sector, academia, and civil society. National policies should create enabling environments that mobilize each sector's strengths. The following subsections illustrate how these sectors contribute, independently and jointly, across four pillars: capacity building, infrastructure, innovation ecosystems, and cross-sector partnerships.

3.1 Building a Skilled Talent Pipeline

Investments in education and training are essential in ensuring that young Africans have the skills and resources needed to thrive in a digital world, including maximizing the benefits of AI. Governments play a central role in setting national education priorities, reforming curricula, funding teacher development, and ensuring equal access – particularly in rural and underserved communities. The private sector complements these efforts by offering targeted upskilling programs, technological tools, and scalable platforms that accelerate skills development and job readiness.

At the same time, AI itself can act as a powerful enabler of education transformation. The pace of technological change is outstripping the speed at which traditional education systems can adapt. As the longevity of individual skills shortens, AI can be used to update learning modules and curricula to reflect real-time labor market needs. AI-powered platforms can also act as personalized tutors, recommending courses based on a learner's ability or desired career path, making it easier for individuals to learn at their own pace. In technical fields such as cybersecurity or software engineering, AI is lowering barriers by automating routine functions and enabling learners with modest backgrounds to engage with complex systems. By embedding AI tools in education systems, governments and institutions can dramatically improve the reach, efficiency, and adaptability of skills development.

This approach is already taking shape. The Africa Development Bank (ADB) reports that private investment in education has increased significantly, with the private sector contributing to over 50% of new school constructions across the continent.[66] Efforts to build AI capacity in African countries like Ghana have similarly garnered significant attention from private sector companies. Google AI's establishment of a research lab in the region underscores this, with the center dedicated to advancing AI research and development, offering training and resources to local researchers and developers.[67]

To ensure these efforts scale equitably, governments must work closely with private actors to align skills initiatives with national qualifications frameworks, integrate industry certifications into formal systems, and expand successful pilots across broader public platforms. Additionally, governments can lead by example in adopting skills-based hiring, offering fiscal incentives to companies that provide AI training or retraining programs, and allocating financial assistance to short-term credentials and micro-courses so that workforce development keeps pace with the speed of technological change.

Ultimately, building an AI-ready workforce will require a deliberate, multi-stakeholder effort. Governments, educators, the private sector, and learners themselves must work together to build human capital pipelines that serve both national development goals and emerging global opportunities. Establishing national AI education and workforce strategies will be critical. These strategies can help governments align public investment, private sector contributions, and academic programs – ensuring that education systems are not only equipped for today's digital economy but are adaptable enough to evolve with tomorrow's technologies.

Cisco Leading Training Initiatives in Africa

Cisco's Networking Academy and Country Digital Acceleration (CDA) program demonstrates private sector commitment to empowering Africans with technology, skills, and innovation. The Networking Academy builds capacity by providing essential IT, AI, cybersecurity, and networking skills. It engages students through hands-on learning and partnerships with local educators, ensuring high-quality, localized support. Since the Academy's inception, Cisco has trained over 1.6 million students across Africa. Notably, almost 500,000 of those students are women.[68]

Beyond its renowned Networking Academy, Cisco collaborates with several organizations to support African students from the primary level, providing essential skills in reading, math, and digital creation. This foundational education paves the way for students to pursue STEM careers, thereby helping to bridge the digital divide and fostering a future-ready workforce.

Cisco's partnership with the Raspberry Pi Foundation's Code Club empowers young people as early as 9 years old by enhancing their digital skills for free. Engaging three million students annually, this collaboration places a strong emphasis on female participation in Kenya and South Africa. By nurturing these skills early on, Cisco is contributing to the development of a diverse and skilled AI workforce.[69]

3.2 Investing in Infrastructure

Investing in digital infrastructure, such as reliable internet, data centers, and energy supplies, is key to AI deployment. This entails every element, from data storage and cloud computing to strong communication networks and secure power connections supporting systems that connect businesses and enable scalable digital solutions. These components form the backbone of AI infrastructure and help expand access to AI tools to learners, workers and entrepreneurs.

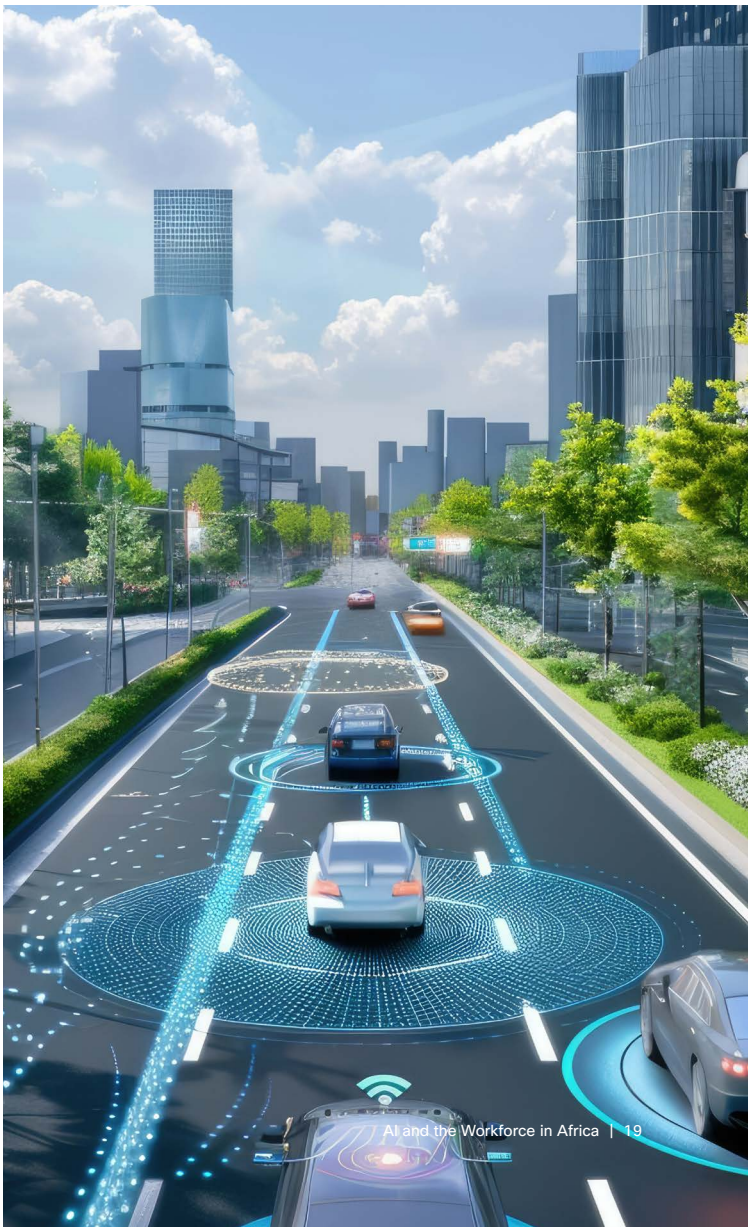
The African data center market is projected to grow from USD 3.49 billion in 2024 to USD 6.81 billion by 2030, reflecting a remarkable compound annual growth rate (CAGR) of 11.79%.[72] This surge is driven by government support for digital infrastructure deployed through Universal Service Funds (USFs), improved connectivity, and the emergence of smart city initiatives. At the same time, the private sector has played a significant supporting role by fueling demand for digital services and AI applications, and by investing in data centers to expand the continent's hosting capacity.

To further accelerate this momentum, African governments should explore the use of "Data Embassies": an emerging model where one country hosts another's sovereign data on its soil through secure, treaty-based agreements. Beyond strengthening cross-border digital cooperation, Data Embassies can attract foreign direct investment, enhance cybersecurity, and build trust in digital governance.[73] Regional and national policymakers should actively encourage bilateral frameworks for data embassies, providing the legal clarity and infrastructure incentives necessary to attract sovereign investments.

By doing so, African countries can simultaneously address cybersecurity risks, gain access to world-class digital infrastructure, and raise their profile as indispensable nodes in the global data economy. This approach will not only strengthen Africa's digital resilience but will also create a virtuous cycle of trust, investment, and innovation that benefits all stakeholders.

South Africa: Africa's Growing Data Center Hub

South Africa is the largest data center market in Africa, driven by significant investments from global cloud providers such as AWS, Microsoft, and Oracle. For instance, Microsoft has pledged USD 290 million to enhance AI and cloud infrastructure in South Africa. This includes building data centers in Johannesburg and Cape Town and providing digital skills training and certification for young South Africans.[70] One of the largest investments in Africa's data center market was Vantage Data Centres' USD820 million Waterfall City facility (South Africa), on which construction was completed in July 2022.[71] Cisco also plays an active role with a Secure Access data center region in Cape Town launched in January 2025, expanding local low-latency and secure access capabilities while its Umbrella edge data centers further enhance regional resilience for cloud security and VPN services. These large-scale investments are helping to close infrastructure gaps that could otherwise slow AI development and application on the continent.



3.3 Supporting Startups and Young Entrepreneurs

As Africa continues to build its AI capacity, it is equally important to support startups and entrepreneurs, who play a crucial role in driving innovation and economic growth. Startups often bring fresh perspectives and solutions tailored to local needs, such as optimizing supply chains in agriculture or enhancing financial inclusion.

To this end, private sector funding has already proven integral to the growth and sustainability of AI startups in Africa, as it provides the capital and resources needed to drive innovation and address local challenges. AI startups require significant investment to cover costs related to research and development, infrastructure, and talent acquisition. Private sector funders provide strategic advice to assist startups in optimizing their business models and expanding their operations.

Governments also have an important role in nurturing the startup ecosystem, through national innovation policies, startup acts, favorable tax regimes, and direct public funding or procurement opportunities. Investment in public digital infrastructure (like open data platforms and regulatory sandboxes) further helps reduce barriers to market entry and scale. Equally vital is the role of education ministries and technical agencies in building a pipeline of entrepreneurial talent through tertiary institutions and incubators.

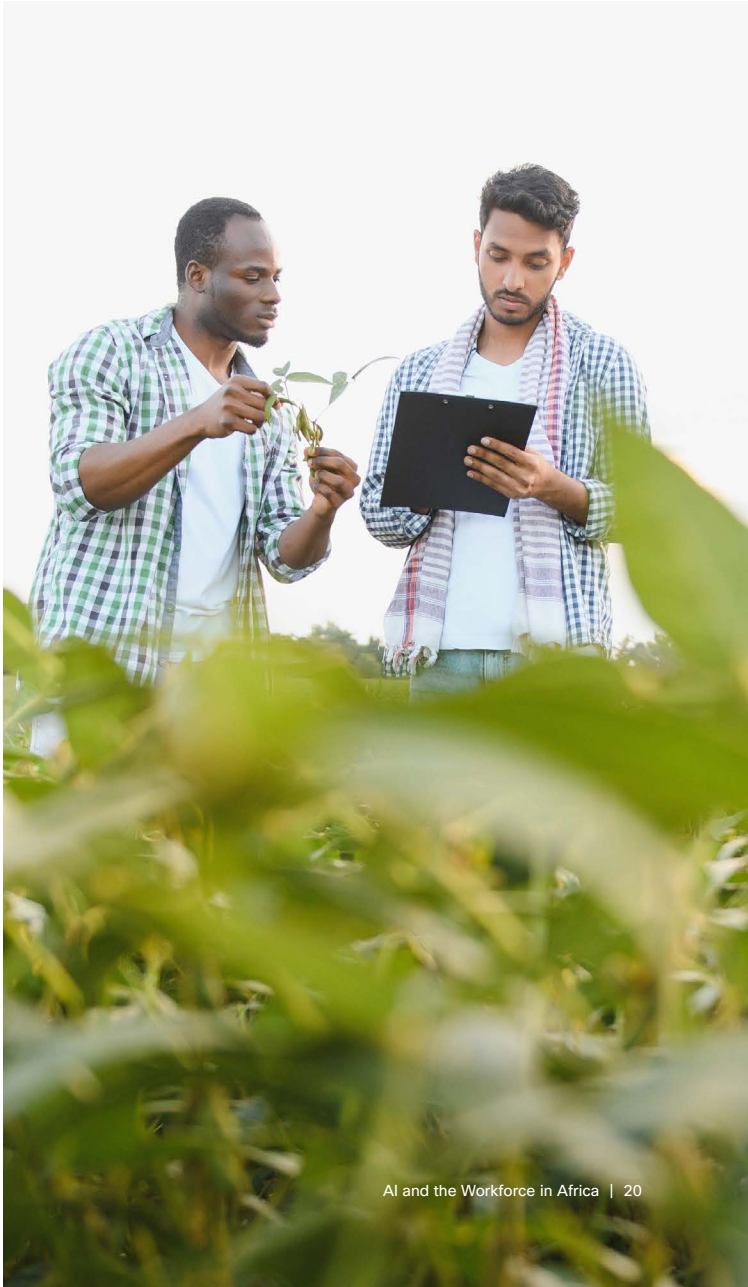
3.4 Encouraging Strategic Partnerships

Through partnerships with governments, academia, and non-profits, the private sector can help create a conducive environment for AI innovation and adoption. These collaborations enable private companies to contribute to the development of essential digital infrastructure, fund innovative research, and offer valuable mentorship and technical support to local startups. For example, Cisco co-hosts the ITU Digital Transformation Centres (DTCs) initiative, which includes eight centers across Africa – in Côte d'Ivoire, Ghana, Rwanda, Senegal, Sierra Leone, Uganda, the DRC, and Zambia.[74] Collectively, these DTCs have trained thousands of Africans in basic and intermediate digital skills, empowering youth and underserved communities with tools for employability, digital entrepreneurship, and future AI readiness.

Investing in Africa's Future

Cisco promotes entrepreneurship through initiatives such as the Harambe Entrepreneur Alliance. Harambe, a Cisco Foundation Economic Empowerment Portfolio grantee, identifies promising young African entrepreneurs and provides them with training, mentors, capital, markets, and a network of advisors to foster entrepreneurship.[80] Additionally, in 2024, Cisco launched a USD1 billion global AI investment fund aimed at expanding and developing secure, reliable, and trustworthy AI solutions.[81] This fund supports startups across various sectors, including healthcare, finance, and energy, by providing financial support, technical expertise, and access to Cisco's global network.

In a similar vein, Google partnered with Nigeria's National Centre for Artificial Intelligence and Robotics (NCAIR) to support AI-powered startups and provide them with funding to help scale their solutions.[82]



One tangible example of multistakeholder collaboration to drive AI adoption in Africa is the Africa AI Accelerator (AAIA) program. This initiative aims to develop AI skills among entrepreneurs and foster innovation across the continent. Managed by the Ghana Tech Lab (GTL) in collaboration with the World Bank and Mastercard, AAIA provides technical training, business development support, and seed funding to selected AI startups from Ghana, Rwanda, Uganda, and South Africa.[75] By combining the expertise of a startup, an international development organization, and a private sector company, this program helps develop a workforce capable of creating, deploying, and governing AI products and systems.

Similarly, private-to-private partnerships can accelerate AI adoption across societies. When companies collaborate, they can pool their resources, expertise, and technologies to create more advanced AI solutions while also reducing costs associated with infrastructure investment.

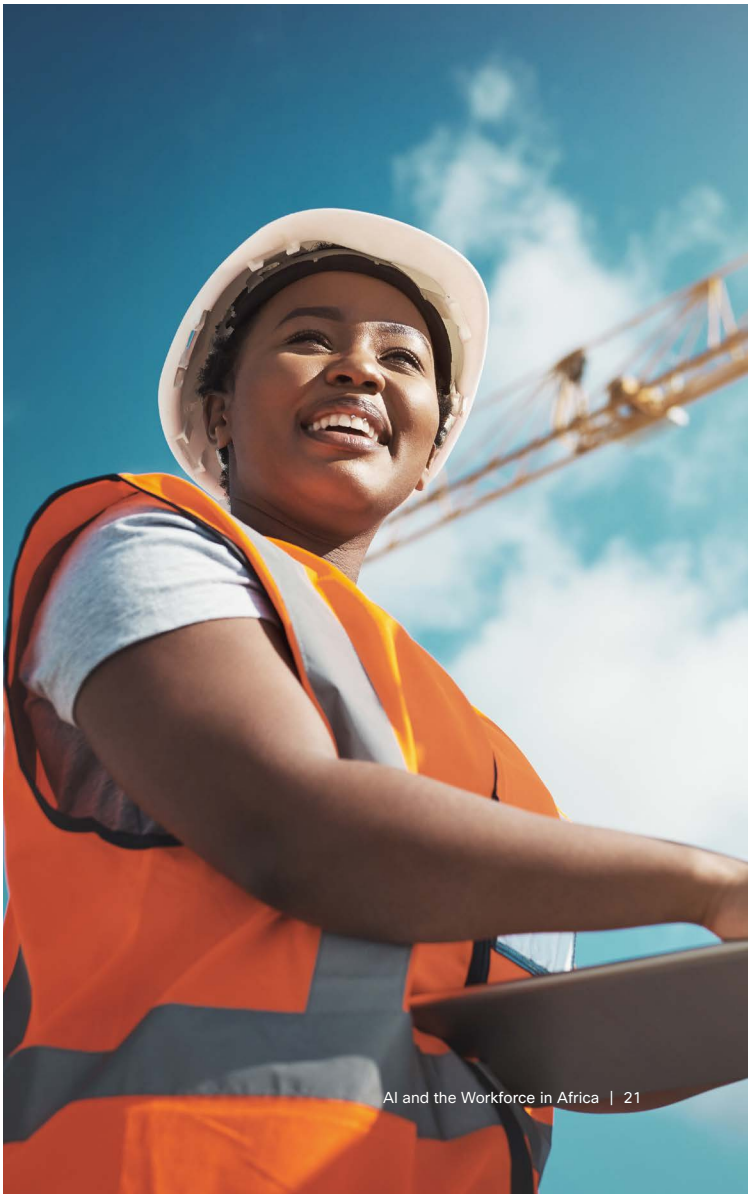
To advance AI research and innovation in Africa, private companies are also partnering with African universities. Intel has collaborated with South Africa's Tshwane University of Technology to evaluate growth potential of the AI sector in Africa and support the development of AI programs across various countries.[76] Additionally, universities in Ghana, Uganda, and South Africa have already established AI labs focused on social impact.[77] These labs are not only enabling innovation but also addressing local challenges, thereby demonstrating the potential of AI to drive social and economic development across the continent.

Looking forward, Smart Africa Alliance's newly established Africa AI Council underscores the value of a collaborative framework to accelerate AI initiatives that close infrastructure and AI skills gaps in Africa.[78] Complementing this, the African Union Development Agency - New Partnership for Africa's Development (AUDA-NEPAD) AI roadmap, unveiled in April 2025, reaffirms the agency's mandate to convene multi-sector stakeholders around a Continental AI Strategy.[79] It outlines plans to support governments, universities, and industry in coordinating AI policy, human capital development, and infrastructure. Initiatives like this offer an opportunity for organizations such as Cisco to contribute meaningfully by aligning AI curriculum modules through its academies, scaling instructor training via regional hubs, and partnering with public institutions to ensure widespread reach. In doing so, Cisco can amplify its impact within an African Union-led, cross-stakeholder framework.

Partnerships Accelerating AI Adoption

In 2024, nine leading companies – including Accenture, Cisco, Google, IBM, Indeed, Microsoft, and SAP – launched the AI-Enabled ICT Workforce Consortium. This consortium aims to assess AI's impact on technology jobs and identify pathways for reskilling and upskilling workers. Consortium members aim to positively impact over 95 million people globally in the next decade through innovative skills development and training initiatives. For instance, Cisco has the goal of training 25 million people with cybersecurity and digital skills by 2032. IBM aims to skill 30 million people in digital skills by 2030, including 2 million in AI by 2026, while Intel plans to empower over 30 million individuals with AI skills for current and future jobs by 2030.[83]

The initiative involves collaboration with various advisors and organizations. The Consortium has now expanded to G7 countries and plans to introduce an AI Workforce Playbook, designed to empower SMBs and large companies to upskill their workforce.



Key Recommendations

To realize the promise of AI-driven growth, African governments, industry, and civil society must pursue a coordinated, phased strategy that builds foundational AI capacity while enabling innovation and responsible governance. This approach should begin with immediate actions that lay the groundwork for sustainable transformation, progress through medium-term scaling initiatives, and culminate in long-term continental leadership in AI.

Immediate Actions (0–12 Months)

1 Establish National AI Skills Councils with a Skills Based Hiring Mandate

While the launch of Smart Africa Alliance's Africa AI Council is a positive development, it is broadly scoped so the continent will greatly benefit from the formation of specialized national multi-stakeholder skills councils to drive AI workforce readiness. These councils should include ministries of education, ICT, labor, and economic planning as well as private sector and civil society stakeholders.

Their primary responsibility must extend beyond defining skills taxonomies and mapping gaps, also mandating skills-based hiring practices in the public sector, drawing from countries like Rwanda and various U.S. states where open and competency-based recruitment increases talent pool diversity and fill rates. This means that at least half of new government and parastatal openings should be filled through validated skills pathways, with civil service hiring managers trained in competency assessment and recognition of non-traditional credentials. The councils should lead the way in certifying high-quality training providers and ensuring alignment between program

offerings and real labor market demand, taking inspiration from industry examples such as Cisco Networking Academy. This program, which achieved a 95% post-completion employment rate for certification-aligned students, offers a model of how industry-led content and badging can create pathways from training to meaningful employment across socio-economic groups and geographies.[84]

2 Launch Infrastructure Investment Partnerships

Governments should emulate Cisco's Country Digital Acceleration model by initiating national public-private investment partnerships geared to deliver affordable, high-quality infrastructure that unlocks both access and innovation. By streamlining regulatory approvals, offering targeted incentives, and coordinating investment, governments can attract private capital and technical expertise to close Africa's digital divide. The partnerships would co-finance AI-enabling infrastructure, including last-mile broadband, energy grids, cloud platforms, and smart city nodes. This approach not only reduces deployment timelines and costs but also ensures that infrastructure is resilient, secure, and future-ready – key principles echoed in Cisco's Ten Tech Policies for the Future aimed at building digital foundations and advancing connectivity through multi-technology networks.[85]

3 Implement Regulatory Sandboxes for AI Innovation with On-the-Job Learning Incentives

To safely enable AI experimentation while safeguarding society, policymakers should implement regulatory sandboxes for AI.[86] These sandboxes would provide controlled environments for piloting AI solutions in critical sectors such as healthcare and financial services, allowing innovators to test new technologies under real-world conditions while regulators monitor for transparency, fairness, privacy, and security. Early evidence from African fintech sandboxes shows that such environments can significantly increase the survival and scaling rates of startups, while also building public trust in new technologies.[87]

The regulatory sandboxes should pair participating startups with "learning while earning" fellowships. These fellowships embed trainees within sandbox projects – earning stipends while gaining hands on expertise – much like Germany's dual vocational system, which retains approximately 60% of apprentices in their training firms upon completion,[88] with 95.3 % of all vocational training graduates in employment shortly after finishing their program.[89] This strong link between training and work helps keep Germany's youth unemployment rate among 15–24 year olds at just 6.6%.[90] By coupling experimentation zones with structured on the job training, African governments can accelerate both responsible innovation and workforce readiness.

4 Consider How to Deliver AI Skilling Outside of the Classroom

A holistic African AI skills strategy recognizes that upskilling cannot be confined to schools and universities. By partnering with community organizations, faith groups, women's associations, and local industry clusters, governments can ensure AI learning is accessible, relevant, and trusted – reaching the estimated 55% of Africans who will still live outside of major cities in 2025.[91]

This approach takes advantage of the continent's strengths in community-led delivery, low-cost adaptation, and social capital. Localized training has been shown to significantly improve participation among women and marginalized youth, as demonstrated by pilot programs across West and East Africa. In Uganda, the Community-Led Learning model reached over 360,000 children during the COVID-19 pandemic, offering accessible, homegrown education solutions.[92] Kenya's Eneza Education, which provides personalized teaching has been reported to increase literacy rates by up to 30% in pilot programs targeting rural communities,[93] highlighting the power of context-aware, tech-enabled learning to close equity gaps.

5 Coordinate Regionally on Standards and Strategy Alignment

At the regional level, AU member states should create regional coordination clusters for AI strategy alignment, such as under the Economic Community of West African States, Southern African Development Community, and East African Community. These platforms should align with the AU Continental AI Strategy and integrate proven frameworks such as OECD AI Principles and UNESCO's AI curricula guidelines.[94] By embedding officers and sharing best practices across regions, Africa can lower the chances of policy fragmentation, accelerate the adoption of innovation-friendly regulations, and maximize the benefits of initiatives such as the African Continental Free Trade Area, which depend on strong national coordination.

Medium-Term Initiatives (1–3 Years)

1 Scale Inclusive Skills Training Nationwide

Governments should work with partners like Cisco to integrate digital and AI skills training into national education and vocational systems, expanding beyond the 1.8 million Africans already reached by Cisco's programs.[95] Partnerships like this have been proven to deepen expertise and reach. A successful example of this is the DigiEmpower Workforce Training initiative – a joint effort by Cisco, Cybastion, the Ivorian government, and the TECH Academy in Abidjan, aimed at training hundreds of thousands of youth and women in AI, cybersecurity, IT infrastructure, and digital transformation across Côte d'Ivoire, Gabon, and expanding to Burkina Faso by 2030.[96] These efforts can be extended by mobile learning programs that can help provide access to remote and marginalized communities, particularly girls, through low-bandwidth mobile platforms.[97] Similarly, micro-credentialing pilots in East and Southern Africa are showing promise in reaching underrepresented learners.[98]

2 Expand Edge and Core Data Center Infrastructure

To meet the projected demand for 700 new data centers across Africa, referred to previously, countries should develop data center networks through strategic hub-and-spoke models and deploying smart infrastructure solutions. This will be critical to meet the continent's surging demand for digital services, while also lowering energy costs and supporting sustainability. By clustering data hubs in regions with stable power and high connectivity and linking them to localized edge facilities, countries can balance load, reduce latency, and avoid duplicative infrastructure. Moreover, smart grid integration and clean energy adoption in these designs can alleviate pressure on unreliable national grids, making data infrastructure both more resilient and cost-effective.

3 Integrate AI into Curricula at All Education Levels

Embedding AI curricula in schools and universities is another key step. By co-developing content with industry experts and training teachers, African countries can close the gap where only half currently include computer skills in their curricula.[99] Drawing on scalable initiatives, such as Cisco's partnerships with the Raspberry Pi Foundation and digital learning kits, innovation must remain teacher-centric.[100]

UNESCO's AI Competency Framework for Teachers should be adopted as a national standard,[101] and national crash programs should be financed to train lead teachers in both GenAI instructional design and use of AI-powered, multilingual educational resources. Ghana's national "Teacher-in-the-Loop AI" upskilling initiative[102] and Nigeria's emerging digital pedagogy partnerships[103] offer promising models for educator capacity-building. While systematic evaluations remain limited, early reports and pilot programs suggest improved teacher engagement and confidence, particularly when training includes content development strategies rooted in local linguistic and cultural contexts. Teacher secondments to tech companies for curriculum co-creation, supported by incentive stipends and professional advancement credits, will accelerate the flow of practice-based learning resources – helping ensure curricula, policy, and pedagogy evolve together.

4 Establish Innovation Hubs in Secondary Cities

The creation of innovation hubs in secondary cities, drawing on successful examples like Ghana's AI Lab and Rwanda's Centre for the Fourth Industrial Revolution, can help expand research and entrepreneurial activity beyond capital cities, catalyzing local solutions and supporting a diverse ecosystem of startups. Governments should replicate this model using EDGE Centers and incubation partnerships to democratize access to AI resources. Building on these, student-powered Security Operation Centers (SOCs), such as those developed by Cisco, can then provide real world problem-solving skills that bridge the gap between training, certification, and the experience that is increasingly required even for entry level jobs.[104]

5 Integrate AI Skills Into Informal Sector and Community-Based Endeavors

Recognizing the scale and importance of Africa's informal sector, micro-credentialing, skills validation, and AI-focused cooperative programs must be made eligible for national and regional incentives. Policy should enable formal recognition and accreditation of skills gained outside traditional education avenues, thereby moving millions of workers into higher-value roles and formal sector participation.

Long-Term Transformations (3–10 Years)

1 Complete Infrastructure Modernization and Accelerate Digital Sovereignty Through Data Embassy Partnerships

Africa's infrastructure modernization must continue until all regions have equitable access to high-speed fiber, edge computing, and secure, interoperable cloud services. This will unlock upwards of USD2.9 trillion in new digital and AI economic activity by 2030, as real-time applications in healthcare, finance, agriculture, education, and industry scale across the continent.[105] Cisco's architecture, security, and connectivity technologies can enable interoperable and resilient networks across sectors.

African governments should also establish bilateral frameworks to host data embassies – sovereign data centers governed by diplomatic agreements – as a means to attract high-trust digital investment, bolster infrastructure development, and advance data sovereignty. These agreements should include legal guarantees, data protection alignment, and infrastructure incentives such as secure land access, energy reliability provisions, and high-speed connectivity. A proven model is Estonia's data embassy in Luxembourg, which backs up critical government systems under diplomatic protections.[106] This setup ensures operational continuity in the face of cyberattacks or disasters while reinforcing international trust in the host country's digital maturity.

For African nations, data embassies offer a strategic triple win: they signal global confidence, drive investment in secure cloud and data center infrastructure, and accelerate domestic regulatory frameworks. By enabling continuity for global partners and anchoring compliance with international standards, these embassies position African states as resilient, sovereign digital allies in the evolving global data economy.

2 Position Africa as a Global AI Solutions Hub

Africa can lead in designing scalable AI tools for healthcare, agriculture, and education in emerging markets. By establishing an African AI Research Network, the continent can capture a significant share of the global AI market while developing solutions tailored to local contexts. Already African governments can now leverage the newly launched AI Hub for Sustainable Development in Rome, a G7-endorsed initiative backed by Italy's Ministry of Enterprises and Made in Italy and implemented by the United Nations Development Programme (UNDP).[107] Designed as a collaborative platform, the AI Hub aims to accelerate Africa's AI-driven growth by connecting local African innovators with G7 and EU companies, development institutions, and advanced digital tools. It is through these initiatives that Africa can pursue its regional branding, export-oriented incentives, and diaspora engagement in establishing itself as a global hub.

3 Develop Government Guarantee for Lifelong Learning and Reskilling

Governments must codify national Living Learning Charters guaranteeing every citizen a learning entitlement at the core of their AI workforce readiness agendas, drawing from innovations such as skills savings accounts, career transition vouchers, and regionally portable credentials. The Charter should be pursued to establish skills accounts, topped up every 3–5 years, building African analogues to models similarly seen in the European Commission's Upskilling Pathways initiative.[108]

Rwanda's National Skills Development & Employment Promotion Strategy already frames workforce upskilling as a shared employer-state responsibility.[109] South Africa's Skills Development Levy (SDL), which collects close to R20 billion annually (approximately USD1 billion) through a 1% payroll contribution, is one of the continent's most ambitious employer-funded training schemes and thus serves as a good use-case.[110] While the SDL itself funds public skills bodies and grants, additional tax incentives – such as Section 12H deductions of up to R120,000 (USD 6,700) per registered learner[111] – further encourage businesses to invest in accredited reskilling and learnership programs.

Such learning guarantees and programs will ensure workers at all career stages have the means and financial incentives to reskill, creating a labor market that is both agile and resilient, as jobs continue to evolve through AI adoption.

4 Develop Resilient Workforce Transition Plans

No African should be left behind in the AI transition. National transition and reskilling trust funds, skills guarantee mechanisms, and transparent placement and re-integration pathways will be key in supporting those displaced or needing to switch industries. Public-private cooperation will remain essential, with civil society and grassroots organizations given formal roles in oversight and delivery.

By rigorously embedding these recommendations into the existing phased strategy, African governments, companies, civil society actors, and development partners can collectively ensure that the continent's vast talent pool is equipped and empowered for an AI-driven future – one in which opportunity and innovation are the guiding principles backed by measurable progress and locally grounded success stories.

Conclusion

Africa's leapfrogging potential in the AI era is not merely a theoretical proposition, it is a tangible opportunity rooted in the continent's youthful demographic, entrepreneurial energy, and its historical ability to adopt transformative technologies in innovative ways. From mobile connectivity to AI-powered platforms across sectors like agriculture, finance, education, and healthcare, Africa is already laying the groundwork for a digitally enabled future.

Yet, for this promise to translate into high-quality jobs and robust economic growth, decisive and coordinated action is required. The path forward must prioritize investments in foundational digital infrastructure, such as data centers and reliable energy, while addressing persistent usage gaps and data deficits that risk excluding millions from AI's benefits. Equally critical is the need for coordinated AI skills and workforce development strategies. Policy frameworks that ensure ethical AI deployment, protect data rights, and promote linguistic and cultural representation can also help ensure workers are prepared for the future AI economy.

The African workforce stands at the heart of this transformation. With the right support, Africa can shift from being a passive consumer of AI to becoming a global contributor – developing new, innovative solutions and talent that align with national economic objectives. As highlighted, this will require education reform, targeted skills development, and deeper public-private collaboration to unlock AI's potential at scale.

In short, AI will transform economies and workforces everywhere. Turning Africa's potential into performance will require visionary leadership, sustained investments that bridge digital divide, and targeted, adaptable skilling programs to empower Africa's greatest asset – its people.

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