2026

The Economic Report

DATA CENTRES IN AFRICA

AFRICA
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ASSOCIATION

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FOREWORD

AFRICA DATA CENTRES ASSOCIATION

Faith Waithaka,
Chairperson,
Africa Data Centres Association (ADCA)

Africa's data centre sector is gaining momentum at a time of rapid global expansion in digital infrastructure. Worldwide demand for cloud services, computing power and data storage continues to accelerate, increasingly driven by the deployment of artificial intelligence and data-intensive technologies. Within this global landscape, Africa is emerging as a market of growing strategic importance, supported by a young, digitally engaged population, rising connectivity and improving international and regional networks. While the sector has not yet reached full maturity, its growth trajectory is clearly positive.

Mobile connectivity remains the primary gateway to the digital economy across much of the continent, shaping how data is generated and consumed. As broadband penetration increases and fibre infrastructure extends inland from subsea cable landing points, the case for locally hosted data infrastructure strengthens. Data centre clusters have taken shape in markets such as South Africa, Nigeria and Kenya, yet a significant proportion of African data continues to be hosted abroad. This gap highlights both the scale of the opportunity ahead and the importance of sustained, long-term investment in local capacity.

The progressive adoption of artificial intelligence is beginning to reshape digital infrastructure requirements in Africa. AI workloads demand higher power density, advanced cooling solutions and greater network resilience, reinforcing the need for modern, scalable facilities designed with future demand in mind. At the same time, capacity development in Africa must be approached with a long-term perspective, recognising that infrastructure growth will precede full utilisation as digital ecosystems continue to evolve.

Sustainability is now a central consideration for the sector. Improving energy efficiency and integrating renewable energy sources are essential to the viability of data centre operations. Africa is uniquely positioned in this regard, with vast untapped potential across solar, wind, hydro and geothermal resources. Leveraging these assets can support greener data centres while strengthening energy security and long-term competitiveness.

Our advocacy efforts are rooted in the conviction that an enabling, investment-friendly environment is essential to unlocking the sector's full potential. Africa's demographic profile and growing demand for local content and digital services underscore the need for clear regulatory frameworks, targeted incentives and policy alignment that allow businesses to scale confidently and responsibly.

As Chairperson of the Africa Data Centres Association (ADCA), I remain a strong proponent of data sovereignty, not only as a policy objective, but as a foundation for sustainable business models. Retaining data on the continent enhances performance, security and economic value creation. Equally pressing is the scarcity of skilled professionals, exacerbated by ongoing brain drain, which places renewed emphasis on education and capacity building.

At ADCA, we are committed to convening policymakers, investors, operators and ecosystem partners to help shape Africa's digital future. This report examines the progress achieved, the challenges that remain and the strategic choices required to ensure that Africa's data centre industry realises its long-term promise.

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Data Centres' Role in Digital Infrastructure

Data centres sit at the heart of modern digital economies. Often described as the "factories of the digital age", they are the physical facilities where data is stored, processed and exchanged, enabling everything from cloud computing and digital payments to artificial intelligence (AI), streaming media and government services. While largely invisible to end users, data centres underpin more than 95% of global internet traffic and have become critical national infrastructure alongside power, transport and telecommunications networks.

At their core, data centres bring together three essential components: computing equipment, connectivity and power. Racks of servers perform the processing tasks that allow applications and platforms to function, while high-capacity fibre networks connect these machines to users, businesses and international data routes. Reliable electricity is the most decisive input. Modern facilities operate continuously and require stable, high-quality power, often at industrial scale, supported by backup systems that ensure uninterrupted operation even in the event of grid failure.

Performance is determined not only by scale, but by proximity. The closer a data centre sits to end users, the faster digital services respond. This responsiveness is measured by "latency" — the time it takes for data to travel from a user to a server and back. For basic services, delays may be tolerable; for cloud-based enterprise software, financial transactions or AI-driven applications, even small increases in latency can materially affect productivity and user experience. As a result, data centres are increasingly distributed across regional and national hubs rather than concentrated solely in distant global markets.

How data centres are used has also evolved. Historically, organisations operated their own on-site servers. Today, most enterprises rely on a mix of cloud services and third-party facilities, known as colocation data centres, where companies rent secure space, power and connectivity while retaining control over their data. Large technology firms — "hyperscalers" such as Amazon, Microsoft and Google — operate vast campuses to deliver cloud and AI services at scale, while governments and regulated sectors increasingly require local, sovereign infrastructure to host sensitive data.

Beyond their technical role, data centres have become strategic economic assets. They attract long-term capital, anchor investment in power and fibre networks, and enable higher-value digital activity to take place domestically rather than offshore. For emerging markets, they are not simply storage facilities, but platforms for competitiveness — shaping how economies participate in global digital value chains.

Understanding how data centres function, what they require to perform, and how they are integrated into wider infrastructure systems is therefore essential. As the following analysis shows, these facilities are no longer a niche segment of the technology sector, but a foundational layer of economic development, investment strategy and digital sovereignty in Africa's next growth phase.

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Image Source: *Freepik*

Part 1: A Strategic Sector

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Digital Gold Rush

Data is the lifeblood of the digital economy: a resource as valuable as gold or oil in its ability to drive growth and innovation. But unlike other commodities, data is not finite, and its value lies in how it is processed, analysed, and applied. More than 95% of global internet traffic flows through data centres, making them critical infrastructure. Control over data flows, cloud hubs, and undersea cables has become a geopolitical priority, with nations competing for dominance in this high-stakes arena.

The global data-centre industry is booming as demand for this "digital gold" accelerates. Valued at $243 billion in 2025, the market is projected to double by 2032, according to the World Economic Forum. Moody's and JLL estimate nearly $3 trillion in global data-centre investment over the next five years, while UNCTAD reports that data-centre projects accounted for over one-fifth of all greenfield FDI in 2025. This surge reflects the growing need for AI infrastructure, cloud services, and digital networks, positioning data centres as indispensable assets driving global growth strategies.

Several converging trends are driving this expansion. Cloud adoption continues to shift workloads off-premises, while AI and big data are reshaping infrastructure needs. McKinsey predicts that AI training and inference could triple global data-centre capacity demand by 2030, with 70% of incremental growth tied to AI. Meanwhile, video streaming, e-commerce, and IoT are compounding demand.

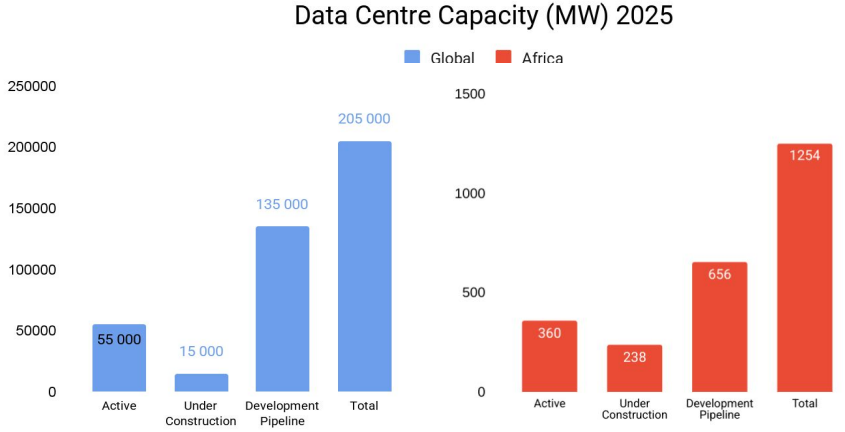
Hyperscale facilities, operated by giants like AWS, Microsoft, Google, and Alibaba, have doubled in number roughly every five years, with hyperscale capital expenditure rising nearly 58% year-on-year in 2024, according to Cushman & Wakefield.

Governments across Asia, the Middle East, and Africa are offering incentives to attract greenfield projects, recognising data centres as foundations for innovation, skilled employment, and adjacent industries like fintech and AI.

Yet Africa faces a stark challenge. While the US hosts about 45% of the world's data centres, Africa accounts for less than 1% of global capacity. Despite growing investment pipelines, the continent's share is expected to expand only in line with global growth, rather than closing the gap.

This opportunity has not stayed unnoticed, and investors, expecting high returns, have poured funds into increasing the sector's capacity by approximately two-thirds.

Africa currently accounts for 0,6% of global data centre capacity



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Graph Source: *Infrastructure Masons, State of the Infrastructure Industry 2025*

Part 1: A Strategic Sector

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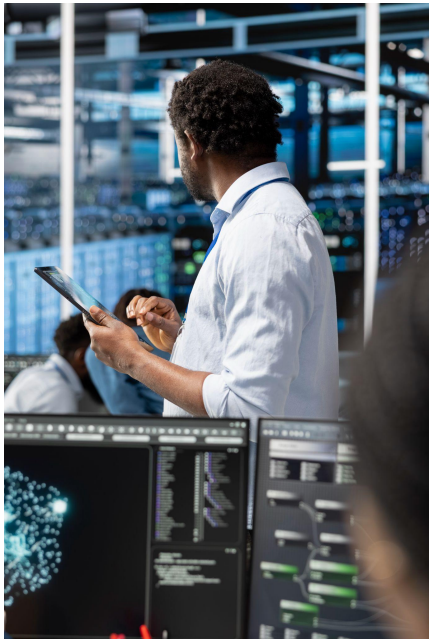
Geostrategic Layers



Data centres are the physical backbone of the digital economy. Their location and ownership influence the legal, economic, and political conditions under which digital activity occurs. With data as an important strategic economic resource, the control of these facilities is increasingly tied to national security, sovereignty, and competitiveness.

Africa's data centre market is still developing, with an estimated 220 to 230 facilities across 38 countries. The market is projected to grow to $9.2 billion by 2029, but capacity is highly concentrated in a few hubs in South Africa, Egypt, Kenya, and Nigeria. Most countries rely on offshore hosting, with the IFC and GSMA estimating that the majority of data generated in Africa is stored outside the continent, mainly in Europe and North America.

This reliance creates interconnected geostrategic challenges that affect governance, sovereignty, and economic independence.

Jurisdictional exposure: Data stored abroad is subject to foreign laws and regulations, limiting the ability of African governments to manage sensitive information. Even when data is processed locally, disaster and redundancy backup systems are often hosted overseas due to limited domestic infrastructure. This creates vulnerabilities in governance and security, as foreign jurisdictions have influence over critical data.

Platform dependency: African governments and businesses depend heavily on the dominant international cloud providers Amazon Web Services, Microsoft Azure, and Google Cloud. These companies have few regional facilities, leaving many countries reliant on infrastructure located outside the continent. This dependence restricts access to advanced services and makes services provided in Africa more expensive.

Ownership and control: While some governments are investing in national data centres, most carrier-neutral facilities and hyperscale campuses are owned by foreign companies and financed by global private equity. As Reuters and S&P global note, the reliance on foreign investment in the digital economy limits the strategic leverage of host nations, even as it expands local capacity. The lack of local ownership also reduces the ability to shape infrastructure to meet domestic priorities.

Supply chain vulnerability: The equipment powering data centres – servers, semiconductors, and networking systems – is almost entirely imported. This dependence exposes African digital infrastructure to global trade tensions, export restrictions, and supply chain disruptions, adding another layer of vulnerability.

The current reliance on offshore hosting has created an extractive economic model, where raw data is exported while high-value digital services are imported. Treating data centres as strategic assets is an important move necessary to reverse this trend. By localising sensitive data and expanding domestic capacity, African nations can strengthen their digital economies, develop technical expertise, and reduce external dependencies.

The challenge is to expand domestic infrastructure while maintaining integration with global networks, ensuring that Africa's digital economy is both competitive and secure.

The **CLOUD Act** obliges any online services provider under U.S. jurisdiction to comply with a U.S. warrant for data disclosure *regardless of where the data is physically stored*, provided the data is in the company's possession, custody, or control. This means global cloud platforms - particularly the largest U.S.-headquartered providers - must respond to U.S. demands for data stored overseas.

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Source: *Image by DC Studio on Freepik*

Part 1: A Strategic Sector

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Data Sovereignty

As Africa's digital economies expand, the rules governing "where" and "how" data is stored, processed and transferred are becoming central to economic competitiveness and state capacity. Data sovereignty - the principle that data generated within a country should be governed by that country's laws - has evolved from a legal aspiration into a strategic policy lever, shaping investment patterns, infrastructure deployment and the localisation of digital value chains.

Nationally, more than 40 African countries have enacted data protection legislation and established data protection authorities. These frameworks aim to protect citizens' rights while providing legal certainty for investors and digital service providers.

In practice, enforcement capacity often lags legislative ambition. World Bank and GSMA assessments highlight constraints linked to staffing, funding and technical expertise. Yet this enforcement gap also represents a growth opportunity: stronger, more predictable regulation is increasingly seen by investors as a prerequisite for scaling local digital infrastructure. And well-functioning regulation is increasingly functioning as a demand signal. Clear localisation and data-protection requirements create predictable demand for compliant, in-country infrastructure, improving bankability for data-centre projects and attracting long-term capital. Reuters and S&P Global note that regulatory clarity is becoming a decisive factor in site selection by cloud and colocation operators.

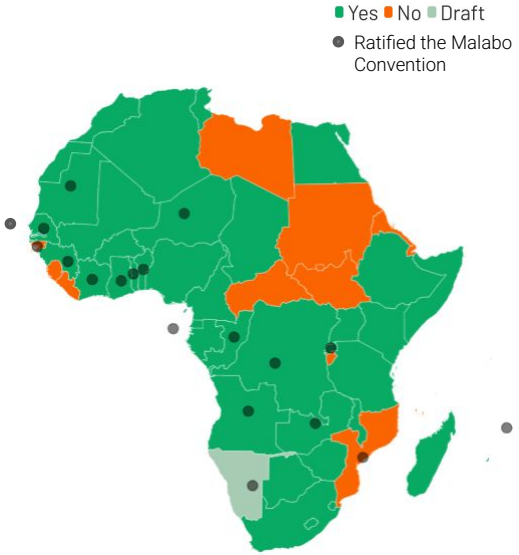
Data localisation policies are emerging as part of this broader regulatory maturation. When aligned with market realities, localisation can strengthen oversight, improve accountability and support the development of domestic data centre ecosystems. Critics note that poorly sequenced or overly rigid localisation can raise costs or constrain innovation, particularly where local, international-standard data centre capacity is still scaling. However, this capacity gap is narrowing. Investment pipelines tracked by DC Byte and development finance institutions show steady expansion of carrier-neutral and compliant facilities across key African markets.

Innovative governance concepts such as "**digital embassies**" are also taking hold on the continent. By combining jurisdictional control with infrastructure resilience, they reflect a shift away from binary localisation debates toward flexible sovereignty models.

As enforcement strengthens and capacity expands, data sovereignty regulation has the potential to anchor robust local data centre markets.

At the continental level, adopted in 2014 and entering into force in 2023, the **Malabo Convention** establishes Africa's first continent-wide framework on cybersecurity, personal data protection and electronic transactions, aiming to harmonise national regulations and strengthen trust in the digital economy. More than a decade on, ratification and implementation remain uneven, with the convention functioning primarily as a reference framework despite growing relevance as data localisation, cloud adoption and cross-border digital services accelerate.

Data Protection Law In Place



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Map Source: UNCTAD, 02/07/2025

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40+ African countries with enacted **data protection legislation**

19 countries have ratified the **Malabo Convention**

2025: the year of the **Africa Declaration on Artificial Intelligence**

$60 Billion committed to **continental AI ambitions**

Viewpoint

Dr. Ayotunde Coker, CEO, Open Access Data Centres (OADC)

As Africa's digital transformation accelerates, the continent faces an urgent question: how can it achieve true continental data sovereignty while fostering inclusive, sustainable growth? The answer lies in developing the local capacity to process, store and govern African data within Africa itself.

Data sovereignty is not only about regulation; it is about value creation and strategic management. When data generated in Africa is processed abroad, the continent loses economic value and the opportunity to build its own digital intelligence. By localising data infrastructure and promoting Africa context sensitive sovereign AI - artificial intelligence built and trained for Africa - countries can ensure that innovation reflects their realities and priorities.

The scale and opportunity of AI is such that it would be more economically and effectively addressed at continental and regional scale.

A key concept in this evolution is ***capacity substitution***: replacing imported data centre capacity with locally built and managed alternatives, freeing up scarce constrained space abroad. Instead of routing computation and storage through foreign clouds, Africa can develop its own capacity to deliver lower latency performance at competitive cost. This shift retains value within local economies, enhances resilience, and creates new high-skill employment opportunities.

The transition will also depend on the availability of advanced processing power, and AI hyperscale grade data centres. The emergence of ***GPU as a service*** - offering shared access to high-performance computing infrastructure for sovereign AI - can democratise AI development across sectors such as health, finance, education and agriculture. By providing GPU resources within Africa, developers and researchers can train models locally, reduce latency and comply with emerging data governance standards.

Energy is another advantage Africa can leverage. Many countries, including Ghana, Nigeria, Mozambique and Kenya, possess abundant hydro, gas and renewable resources. Harnessing these for digital infrastructure can turn sustainability into a competitive strength, aligning the continent's growth with global climate goals.

The coming years offer a critical window to align infrastructure, regulation / supervision and skills development. Regional harmonisation of data policies under the African Union framework will be essential to facilitate secure, cross-border digital collaboration.

Africa has the talent, energy resources and market scale to establish itself as a centre for sovereign digital innovation. By prioritising local capacity, sustainable power and AI-ready infrastructure, the continent can move beyond dependence on external systems and define a truly autonomous digital future.

> "Africa's path to data sovereignty depends on building local processing power, sustainable energy use, and AI capacity that reflects the continent's own priorities and realities."

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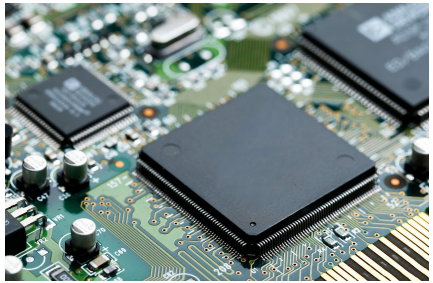
Africa's AI Vision

The **Africa AI Council** was launched alongside the broader Africa Declaration on Artificial Intelligence framework. Its core mandate covers strategic guidance, policy harmonisation, capacity building, and ethical governance of AI across Africa.

Following the Continental AI Strategy released by the African Union (AU) in 2024, the **Africa Declaration on Artificial Intelligence**, adopted in Kigali on 4 April 2025, articulates a continental vision for AI that aligns technological progress with Africa's socio-economic and developmental priorities. Grounded in the AU's Agenda 2063 and the UN Sustainable Development Goals, the Declaration acknowledges the transformative potential of AI while emphasising the unique opportunities, risks, and contextual imperatives facing the African continent. It establishes a set of guiding principles - notably sovereignty, inclusivity, and diversity in AI design and deployment - to ensure that AI technologies benefit all African communities and reflect the continent's shared values and cultural contexts.



The Declaration also underscores the importance of ethical safeguards that protect privacy, human dignity, transparency, and environmental sustainability, alongside collaboration across regional, global, public, and private sectors to build resilient AI ecosystems that are sustainable and equitable.

The Declaration further outlines strategic objectives and operational commitments toward tangible action for innovation and competitiveness to position the continent as a global leader in ethical and trustworthy AI adoption.

Institutional and infrastructure priorities include expanding AI education and research capacity, developing open data frameworks, deploying sovereign and distributed high-performance computing resources, and establishing regional AI hubs and governance mechanisms such as an Africa AI Council. There are also proposals for significant investment vehicles, including multi-billion-dollar funds, to catalyse African-led innovation and strengthen cross-border markets under frameworks like the African Continental Free Trade Area (AfCFTA).

15 African countries have adopted a national AI strategy or policy

The Africa AI Council is composed of **7 ICT Ministers** and **8 Independent** members

$60 billion allocated to the Africa AI Fund

The **Africa AI Fund** is a proposed pan-African investment vehicle intended to aggregate public, private and philanthropic capital at scale to accelerate the development and deployment of AI across the continent. It was formally endorsed by African states as part of the Africa Declaration on Artificial Intelligence, along with commitments of $60 billion for continental AI ambitions.

The Africa AI Fund is designed as a blended finance mechanism and strategic capital pool with a broad mandate. It is aimed at unlocking investment flows into sectors critical to AI readiness and innovation across Africa, in ways that conventional private-sector funds have struggled to achieve given perceived risk and scale barriers.

The fund's mandate covers financing of infrastructure and scaling of African AI ventures by investing in talent and research capacity, de-risking, and risk-sharing.

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Image Source: *DC Studio on Freepik*

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Part 2: Connectivity & Infrastructure

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Installed Digital Infrastructure

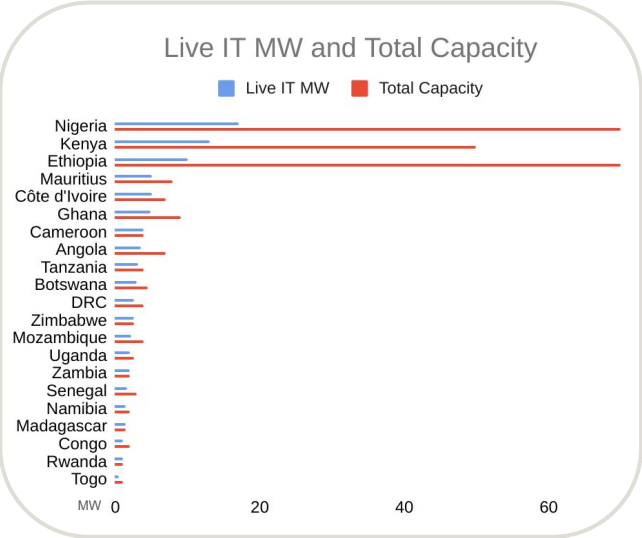
While the global conversation around data infrastructure is dominated by the rapid build-out in mature markets, the African market is characterised by high-volume investment alongside a temporary lag in utilisation. According to the Infrastructure Masons (iMasons) and recent industry forecasts, Africa's data centre capacity is projected to triple by 2030, reaching approximately 1.2 GW of total IT load. In contrast, the global market is expected to quadruple in size over the same period, driven by the massive scale of AI-dedicated campuses in the US and Asia.

Despite this aggressive growth, current data suggests a notable "occupancy gap." According to Xalam Analytics, in African markets outside of South Africa, live IT capacity represents only about 1/3 of the total built market potential. Even in South Africa, the continent's most mature hub, only roughly 74% of market capacity is fully fitted out and utilised.

Several structural factors contribute to this temporary under-utilisation. First, the infrastructure is being built "ahead of the curve" to accommodate the imminent arrival of global hyperscalers and the operational requirements of the African Continental Free Trade Area (AfCFTA). Large-scale facilities are often commissioned with a 10-to-20-year horizon, meaning initial low occupancy is a strategic choice to ensure future scalability.

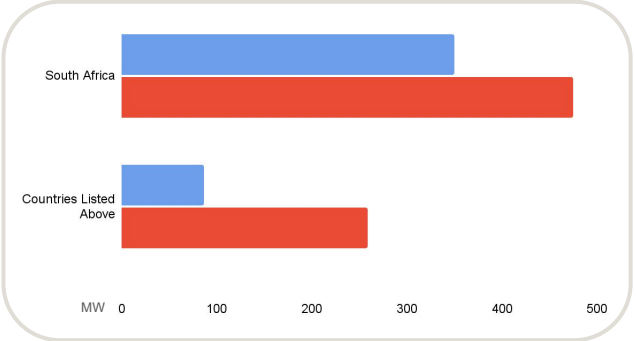
Second, the usage gap remains a primary hurdle.

While 4G/5G coverage is expanding, the high cost of mobile data relative to income - reaching up to 26% of household expenditure in some regions - prevents the massive volumes of consumer data traffic from hitting local servers.



However, the market is approaching a critical tipping point. The emergence of Artificial Intelligence (AI) is fundamentally shifting the requirement from "storage" to "processing speed." AI applications are highly sensitive to latency, making it unsustainable for African data to be processed in European or North American hubs. To deliver real-time AI services locally, the streams of demand - ranging from international content providers to local organisations - will inevitably flow into this vacant capacity.

As faster access increasingly creates a competitive advantage, and the usage gap reduces thanks to dropping bandwidth costs, the economic case for localised hosting becomes irrefutable, positioning current excess capacity as the vital reserve for Africa's next digital boom.



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Graphs Source: *Xalam Analytics*

Part 2: Connectivity & Infrastructure

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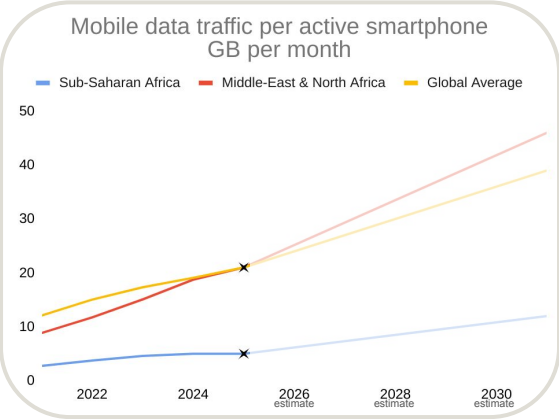
Streams of Demand: Data Consumption, Content Providers & Government

As the continent moves beyond basic connectivity, the shift from a "coverage gap" to a "usage gap" is redefining the requirements for localised infrastructure.

Despite a proliferation of subsea cables, a significant disparity remains between internet access and internet adoption. According to a July 2025 IFC study, in low-income African nations, up to 26.4% of average monthly income is spent on internet usage. While the physical "coverage gap" - those living outside a network signal - has narrowed to just 9%, the "usage gap" - people who do not use mobile internet, even though a service is available - remains a formidable 64%, according to June 2025 GSMA data.



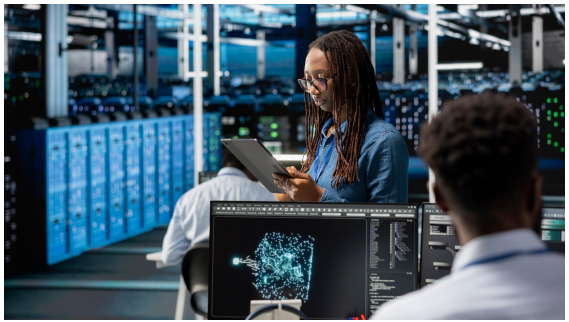
The underlying metrics tell a story of untapped volume. While 47% of the population in Africa are mobile subscribers, only 28% are mobile internet users. Ericsson's Mobility Report from late 2025 highlights that while global mobile data usage per active smartphone sits at 21.6 GB, Sub-Saharan Africa lags at roughly 6.7 GB. However, with the IFC estimating that doubling undersea capacity can slash prices by 30-50%, the market is at a "coiled spring" stage: even a marginal price reduction is projected to cause data consumption to surge toward the global mean, necessitating a massive expansion in edge and core data centre facilities.

On the supply side, content providers and hyperscalers are the primary catalysts for institutional-grade infrastructure. To minimise latency and optimise user experience, these giants are shifting from distant hosting to "in-country" presence. While AWS was the early pioneer with its own dedicated facility in South Africa, the landscape in 2026 is increasingly characterised by a "hybrid-hub" model, with both in-country and remote presence.

Other hyperscalers, including Microsoft Azure, Google Cloud, and Oracle, are leveraging high-tier colocation facilities in markets like Kenya, Nigeria, and Morocco to deploy their cloud regions. The emergence of Artificial Intelligence (AI) has accelerated this trend; training and inferencing AI models requires a proximity to the end-user that only local data centres can provide. In this ecosystem, the data centre is no longer just a storage unit but an essential engine for real-time digital interaction.

Perhaps the most complex stream of demand originates from the public sector. African governments are increasingly viewing data as a strategic national asset. Many countries have included as part of their digitalisation process the construction of government-owned or "national" facilities designed to host civil registries and financial data.

A burgeoning trend in this space is the concept of "digital embassies." Recognising that maintaining high-tier physical security and 100% uptime can be capital-intensive, some nations are exploring hosting critical data backups in foreign jurisdictions - under binding international treaties that grant the data the same legal immunity as a physical embassy. This allows for data sovereignty without the immediate burden of building new capital-intensive data centre infrastructure.



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Graph Source: *Ericsson, Mobile data traffic outlook, Mobility Report November 2025*
Image Source: *Freepik*

Part 2: Connectivity & Infrastructure

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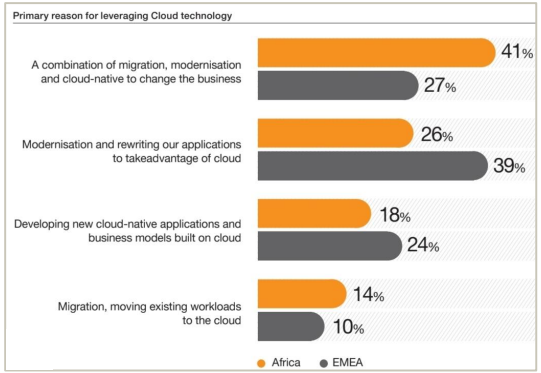
Streams of Demand: Enterprise

Historically, large firms maintained "basement servers," but recent years saw a decisive pivot toward cloud migration and colocation. Current estimates suggest that 55% of African enterprises now run at least half of their workloads in the cloud.

However, the last step of this transition is consultative rather than purely technical. PwC's 2023 survey found that for 41% of African businesses, the main goal of using the cloud is total business change. They achieve this by moving old systems to the cloud and building new, modern digital tools from scratch. This multiplicity of goals into one process is representative of the ongoing digitalisation process and the strong demand for IT infrastructure expertise. As Ange Kacou Diagou, founder and CEO of New Digital Africa, noted "There is a robust appetite for digital infrastructure and ICT services across the continent. This upward trajectory extends beyond coastal hubs to include landlocked frontier markets in the Sahel, where local demand for connectivity is increasingly strong." If the expertise is available in hub markets like South Africa, Kenya and Nigeria, most other markets lack IT infrastructure consultants, and operators pointed out that their commercialisation process includes direct contact to local businesses.

Research indicates it can take up to 24 months to convince a local enterprise to migrate, even when the financial logic is irrefutable. This resistance is often rooted in a lack of local IT integrators that can act as a neutral advisor, and concerns over control. This is why data centre operators that target the local enterprise segment tend to go beyond storing data and offer digitalisations services, including cloud.

Interestingly, Africa is also witnessing a nuanced version of the global "cloud repatriation" trend. According to Flexara data from 2025, while 67% of global enterprises have moved some workloads back from public clouds to private or hybrid environments to manage costs, African firms are adopting a "sovereign-first" hybrid approach from the outset - keeping sensitive data in local colocation facilities while using public clouds for elastic workloads.



Viewpoint

Didier Hung Wan Luk, CEO, STELLARIX

Local hosting is not just a technical adjustment, it fundamentally reshapes Africa's digital economy by anchoring control, performance and trust where the data is generated. For much of the past decade, reliance on offshore infrastructure enabled early digital adoption but also introduced latency, regulatory complexity and cost uncertainty. These constraints are becoming more visible as African markets move toward more data-intensive and real-time services.

The steady expansion of local data centre and cloud capacity is beginning to rebalance this equation. Hosting data and compute closer to users **reduces latency and improves reliability**, delivering practical gains for sectors such as financial services, healthcare and government platforms. In many cases, this proximity determines whether digital services can **scale** sustainably beyond pilot phases. Local hosting also brings economic advantages. By **limiting exposure** to foreign exchange risk and unpredictable data egress fees, organisations gain greater cost transparency and planning certainty. As regional providers mature, enterprises increasingly have viable choices alongside global hyperscalers, strengthening operational resilience. From a governance standpoint, keeping data within national or regional jurisdictions **simplifies compliance** with evolving data protection frameworks. This supports institutional confidence and reinforces public trust in digital systems handling sensitive information.

Finally, local hosting underpins **more relevant AI development**. Models trained on locally governed data better reflect African languages, behaviours and environments. As capacity deepens, local hosting is emerging as a practical foundation for digital sovereignty and long-term innovation across the continent.

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Graphs Source: *PWC Africa Cloud Business Survey 2023*

Part 2: Connectivity & Infrastructure

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Connectivity

Africa's digital landscape is shifting from one defined by connectivity gaps, to a dynamic, but challenging, frontier for data infrastructure.

Subsea cable systems have historically served as the backbone of international connectivity. As data centre ecosystem has started to take off, land-based cables are proliferating and gaining importance.

According to the Broadband Commission for Sustainable Development, international internet bandwidth in Africa has seen exponential growth; however, the challenge remains bridging the "last mile" to landlocked nations. The scale of this terrestrial expansion is increasingly reflected in the continent's operational metrics.

Africa's terrestrial fibre optic network reached approximately 1.3 million kilometres by 2025, a significant leap from the 1 million kilometres recorded in 2019.

This expansion is underpinned by substantial capital commitments. In late 2025,the World Bank approved $500 million to deploy 90,000 kilometres of fibre. These terrestrial arteries are becoming the primary competitive "moat," ensuring data centres can service inland markets beyond traditional coastal gateways.

Intra-African connectivity is also gaining momentum, aligned with the objectives of the African Continental Free Trade Area (AfCFTA). New cross-border fibre projects are linking previously isolated markets, reducing the reliance on "tromboning" data through European exchange points.

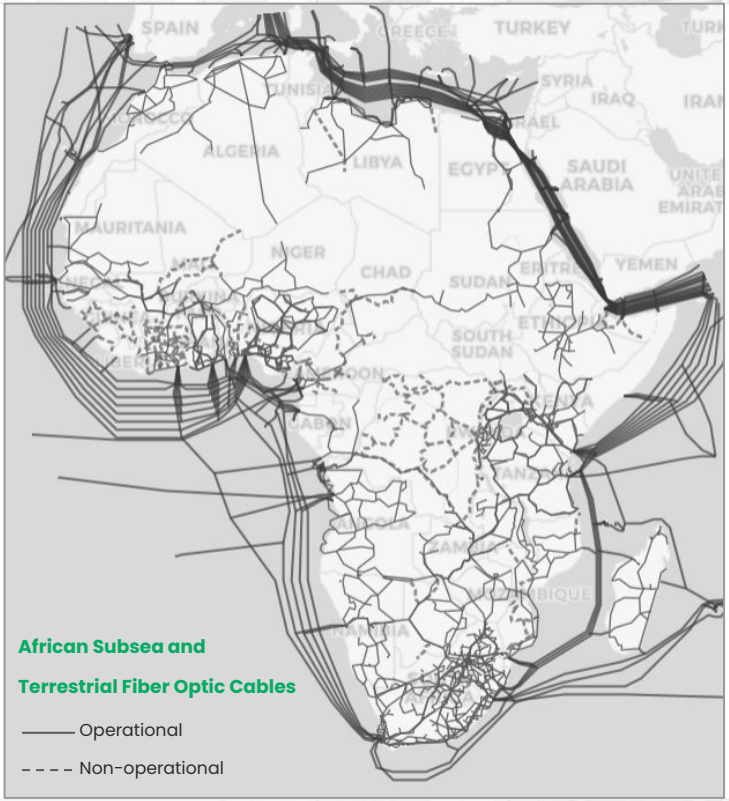
In the current infrastructure mix, a multi-modal approach is essential: while fibre supports areas with a critical mass of data traffic, tower-based microwave links continue to provide essential regional coverage.

For remote areas where fibre deployment is too expensive, satellite technology has emerged as a disruptive alternative. Traditionally sidelined due to high costs, the entrance of Low Earth Orbit (LEO) providers has driven prices down to competitive levels. This shift is so pronounced that satellite solutions are now being adopted even in major metro areas like Lagos and Nairobi as redundant links. As the continent scales, the synergy between subsea resilience, terrestrial fibre, and satellite agility are expected to be the primary driver of fully closing Africa's remaining 9% internet access gap.

Egypt is connected to the most subsea cables with 19+ Cable Systems

Djibouti comes second with 12 Cable Systems

South Africa is third with 11 Cable Systems



Map Source: [Afterfiber, Network Startup Resource Center (NSRC)]

RISING ADVISORY

Part 2: Connectivity & Infrastructure

AFRICA DATA CENTRES ASSOCIATION

Latency & Compute Divide

Over the past decade, Africa's digital development agenda has focused primarily on connectivity: expanding broadband coverage, lowering data costs and increasing international bandwidth. While these efforts have delivered tangible gains, a new and less visible constraint is emerging: access to computing capacity and, critically, how close that capacity sits to end users and businesses.

This emerging "compute divide" extends beyond the availability of fibre or mobile networks. It reflects where data centres and cloud platforms are located, how quickly digital services can respond, and how efficiently firms can operate digital tools. As cloud computing, artificial intelligence (AI) and real-time applications become core inputs for modern economies, these factors are increasingly shaping competitiveness across countries, cities and sectors.

A central metric in this shift is latency - the time it takes for data to travel from a user to a computing facility and back. For basic services, such as email or static websites, higher latency is generally tolerable. However, for interactive applications – including digital financial services, enterprise software, video conferencing, online gaming and AI-enabled tools – delays quickly translate into slower performance, reduced reliability and lost productivity.

Measurement studies using RIPE Atlas probes and academic network analysis show that African users typically experience higher and more variable latency when accessing cloud services than users in Europe or North America. Median response times from African locations to major cloud regions frequently exceed 70-100 milliseconds when workloads are hosted outside the continent, compared to sub-20 milliseconds in mature markets with dense local infrastructure. Research suggests that once latency rises above roughly 40–50 milliseconds, user experience for interactive services begins to degrade noticeably.

Even within Africa, performance outcomes vary widely. Markets with local data centres or cloud regions consistently record materially lower and more stable latency. Independent benchmarking indicates that countries hosting local cloud infrastructure, such as South Africa, benefit from median latencies in the range of 35-45 milliseconds, compared to significantly higher figures when traffic is routed via other continents. This has created a clear performance gradient that mirrors the uneven distribution of compute infrastructure.

The rapid emergence of AI is adding a further layer to this divide. According to UNDP research, only a small share of Africa's AI developers and researchers currently have access to adequate computing resources, with most relying on limited or remote capacity. This constrains innovation speed, increases costs and limits the ability to scale AI-driven solutions locally. In practical terms, latency challenges are compounded by shortages in high-performance compute capacity.

Recent investment trends point to a gradual rebalancing. New carrier-neutral data centres, GPU-enabled facilities and cloud edge deployments are expanding compute access in selected hubs, particularly in Southern, East and parts of West Africa. These developments underline a broader shift: future digital competitiveness will be shaped not only by connectivity, but by where compute resides, how quickly it can be accessed and how effectively it integrates with energy and network infrastructure.

As Africa's digital economy matures, the focus is moving from basic access to performance, resilience and scalability. The compute divide represents both a new frontier in digital inequality and a clear investment signal. Markets that succeed in reducing latency and expanding local compute capacity are likely to capture disproportionate value from cloud adoption, AI deployment and enterprise digitalisation, positioning compute proximity as an asset in Africa's next phase of digital growth.

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Image Source: *Freepik*

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AFRICA DATA CENTRES ASSOCIATION

Part 3: Investment

AFRICA DATA CENTRES ASSOCIATION

Investment Dynamics

The rapid expansion of artificial intelligence (AI), cloud computing and digital services is reshaping global capital flows, with data centres emerging as one of the most strategic infrastructure assets of the decade. Driven by hyperscalers whose combined market capitalisation now runs into the tens of trillions of dollars, global data centre capacity has expanded at unprecedented speed. Within this landscape, Africa remains structurally underrepresented, accounting for less than 1% of installed capacity, despite hosting nearly a fifth of the world's population. Yet this gap has become a focal point for investors rather than a deterrent, triggering an influx of capital from hyperscalers, development finance institutions (DFIs), private equity, commercial banks and telecom-linked platforms.

Rather than a single investment narrative, African data infrastructure is increasingly shaped by overlapping capital strategies, each responding to distinct risk profiles, time horizons and policy priorities.

A notable shift since the early 2020s has been the evolution of hyperscalers from long-term tenants into direct infrastructure investors. While leasing remains the dominant model, selective ownership and co-development have gained momentum in markets where power availability, regulatory clarity and regional connectivity align.

Microsoft's partnership with Abu-Dhabi-based AI and cloud computing technology company G42 in Kenya, anchored by a geothermal-powered campus in Olkaria, exemplifies this trend. So does Google's continued expansion of its Johannesburg cloud region alongside investments in subsea and terrestrial connectivity. Amazon Web Services has made similar moves in South Africa, reinforcing Cape Town as a hyperscale node, while Oracle continues to scale cloud availability zones through a mix of owned and partner-operated facilities.

These investments have broader systemic effects: hyperscale projects often trigger upgrades to national power grids, fibre backbones and landing stations, embedding data centres within wider industrial and energy planning frameworks.

DFIs have played a foundational role in enabling this ecosystem, particularly outside established hubs such as Johannesburg, Lagos and Nairobi. Institutions including the IFC, U.S. International Development Finance Corporation (DFC), British International Investment (BII), Proparco, DEG, FMO and Afreximbank have provided long-tenor loans, equity stakes and blended finance structures to crowd in private capital.

Global data-centre investment is estimated to reach $3 trillion over the next five years

The DFC has supported platforms such as Africa Data Centres and Raxio Group, while IFC has backed multiple regional operators and fibre-linked facilities, often alongside Proparco and FMO. BII's investments in Liquid Intelligent Technologies and its associated data centre arm illustrate the preference for vertically integrated digital infrastructure. Afreximbank, meanwhile, has increasingly positioned data centres within its digital trade and industrialisation agenda, including support for regional hubs and national facilities.

For DFIs, data centres are no longer viewed as purely commercial real estate but as sovereign-enabling assets linked to data localisation, cybersecurity and public service digitisation.

Part 3: Investment

AFRICA DATA CENTRES ASSOCIATION

Investment Dynamics

Private equity has been instrumental in transforming African data centres from bespoke projects into scalable platforms. Drawing lessons from the telecom tower sector, PE-backed operators have prioritised carrier neutrality, regional standardisation and modular expansion.

Roha Group's Raxio portfolio, spanning Uganda, Ethiopia, Mozambique, Côte d'Ivoire and the DRC, exemplifies this approach. AIIM has pursued a similar strategy through investments in West and North Africa, including Morocco and Ghana, while Actis-backed Digital Realty (via Teraco) remains the continent's largest hyperscale platform by capacity. Helios Investment Partners, following its tower-sector playbook, has also targeted digital infrastructure separation and consolidation opportunities..

Smaller regional funds and family offices — often partnering with DFIs — have backed operators such as Wingu Africa, IXAfrica and Medallion Data Centres, reinforcing Nairobi's role as an East African interconnection hub.

Types of Investors

Development Finance Institutions (DFI)
estimated ~$1.5bn – $2.0bn from 2016 to 2025

Private Equity
estimated ~$900m – $1.4bn

Banks
estimated ~$1.0bn – $1.5bn

Hyperscalers & Tech Investors
estimated ~$2.5bn – $4.0bn

Private Operator & Reinvested Capital
estimated ~$500m – $800m

Sovereign Public Investment
estimated ~$300m – $700m

Case Study

D4D HUB — DATA GOVERNANCE IN AFRICA — Global Gateway

The **Digital Investment Facility (DIF)** is a technical assistance programme funded by the European Commission and EU member states, established to help close Africa's digital infrastructure investment gap. Rather than providing capital, DIF focuses on a critical but often overlooked constraint in the market: ensuring that data centre and connectivity projects are structured, de-risked and prepared to attract long-term financing. Its mandate reflects the growing recognition that demand for digital infrastructure alone is insufficient without investable project fundamentals.

DIF supports data centres, internet exchange points (IXPs) and related sustainable digital infrastructure across Africa from early concept through to financial close. Its activities span feasibility studies, independent project reviews, commercial and financial structuring, ESG and regulatory support, and investor-readiness preparation. By addressing technical, commercial and governance challenges at the development stage, DIF helps project sponsors align proposals with the requirements of development finance institutions, commercial lenders and infrastructure investors.

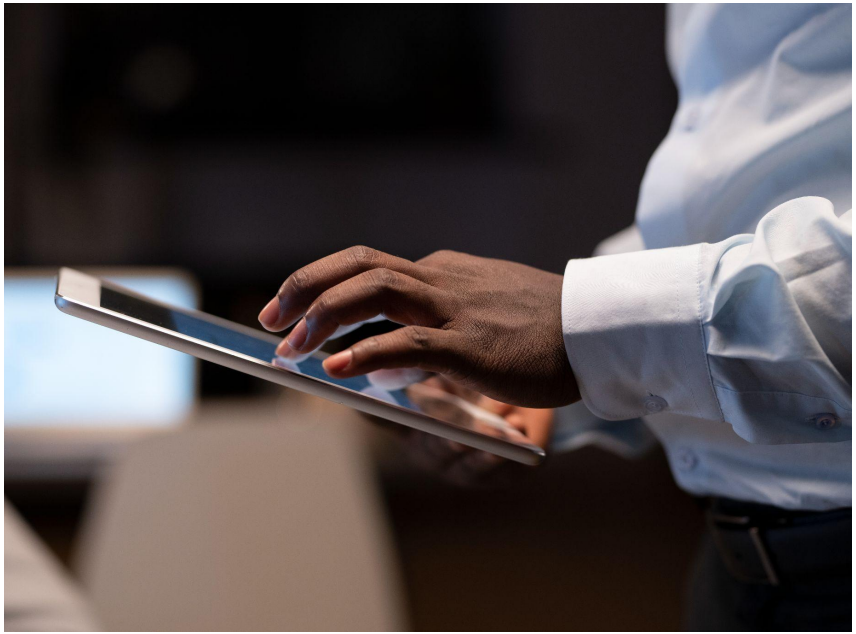
Alongside project-level support, DIF plays a broader market-shaping role. The facility publishes market briefs analysing investment conditions in Africa's data centre sector, hosts the Why Should We Care About African Data Centers? podcast, and convenes industry roundtables and closed-door discussions. These platforms are designed to improve information flows, share operational and financial lessons, and connect policymakers, operators and investors around a more transparent understanding of market realities.

Recent DIF market briefs point to a sector in transition. In several African markets, capacity has expanded faster than utilisation, with many facilities still in the ramp-up phase and demand converting more gradually than initially projected. Enterprise migration remains uneven, while hyperscaler commitments vary significantly by geography. However, the underlying fundamentals continue to strengthen. Broadband usage is rising, cloud adoption is accelerating from a low base, and new drivers - including data localisation requirements, emerging AI workloads and increased regional interconnection - are beginning to support more resilient, long-term demand.

The near-term outlook favours disciplined execution, realistic phasing and capital structures aligned with market absorption. Over the medium term, projects which are well located, well connected and anchored in clearly identified customer demand are positioned to benefit from Africa's expanding digital economy, provided they are built on sound, investable foundations.

AFRICA DATA CENTRES ASSOCIATION

Investment Dynamics



The growing involvement of commercial banks marks a maturation of the sector. Institutions such as Rand Merchant Bank (RMB), Absa, Standard Bank, Nedbank and international lenders including Standard Chartered and Citi have structured facilities for both construction and expansion phases.

RMB's financing of Wingu Africa and IXAfrica, alongside syndicated lending to South African and Nigerian facilities, highlights increasing comfort with data centre cash-flow profiles, particularly where revenues are underpinned by long-term contracts with multinational clients. Local currency lending, though still limited, is also beginning to emerge in markets with deeper capital pools.

Telecom groups remain central to the ecosystem, either as infrastructure providers or through carved-out data centre subsidiaries. Africa Data Centres (Liquid), Nxtra by Airtel, Orange's regional facilities, STELLARIX (part of Axian Telecom) and Maroc Telecom-backed platforms illustrate how operators are monetising legacy assets while adopting carrier-neutral positioning.

This model has proven attractive to investors, as telco-affiliated data centres often benefit from embedded fibre, enterprise clients and strong balance sheets, while operating independently enough to host competitors.

Alongside commercial investment, governments are increasingly sponsoring national data centre projects as part of digital sovereignty agendas. Nigeria's Galaxy Backbone, Ghana's National Data Centre, Togo's PNDN, Benin's Sèmè City-linked facilities, Rwanda's National Data Centre and Ethiopia's state-backed hubs typically rely on mixed funding structures combining public budgets, DFIs, export credit agencies and technology partners.

These facilities prioritise government cloud, health, tax and identity systems, and are becoming anchors for broader domestic ecosystems.

With Africa's data centre investment needs projected to exceed $5bn by the late 2020s, attention is turning to financial innovation. REIT-style structures, green bonds and infrastructure funds tailored to pension capital are increasingly discussed, particularly in South Africa, Morocco and Kenya. ESG-linked financing, tied to renewable energy integration, is also gaining traction.

Taken together, African data centres are no longer defined by capital scarcity but by capital diversity. The convergence of hyperscalers, DFIs, private equity, banks, telcos and sovereign actors suggests that the sector has entered a structurally different phase — one where scale, resilience and geopolitical relevance are as important as returns.

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Image Source: *Freepik*

Part 3: Investment

AFRICA DATA CENTRES ASSOCIATION

Business Model

The business model for African data centres is transitioning from basic colocation to the high-density requirements of the AI era. This evolution is characterised by an escalating capital intensity. Globally, the cost of constructing a standard Tier III data centre has risen to an average of $11.3m per MW, according to JLL's 2026 Global Data Center Outlook. However, for facilities equipped with specialised AI GPUs, this figure can more than double; tenants often spend an additional $15m to $25m per MW on the technical fit-out alone.

In the African context, these high upfront costs are compounded by uniquely elevated Operational Expenditure (OpEx). Operators must navigate a "redundancy premium," investing heavily in sophisticated power management, onsite renewable integration, and AI-powered monitoring systems to optimise cooling and energy efficiency. With AI workloads requiring significantly more power - often jumping from 5 MW to 50 MW for a single high-density facility - monitoring and design performance have become primary drivers of the bottom line.

Supply-chain constraints are also to be considered as heavy reliance on imported equipment, combined with long lead times for critical assets such as generators, which operators report can take up to 18 months to deliver, and minimal local manufacturing capacity outside a handful of facilities in South Africa and Kenya, can add cost or delay project delivery and reinforces the central role of procurement resilience in the sector's business model.

Consequently, the Return on Investment (ROI) for African data centres follows a longer, more industrial horizon compared to traditional commercial real estate. While mature global markets may see rapid absorption, our consultative research indicates that in Africa, it can take up to eight years to reach 85% occupancy.

To mitigate the risks of lagging occupancy, operators are adopting diverse strategies:

- **Wholesale and Hyperscale**: Targeting global cloud providers with large-scale, long-term capacity leases.
- **Sector-Specific Niches**: Focusing on a specific type of user, such as government, or the financial sector which demands ultra-secure, sovereign-compliant infrastructure.
- **Digital Enablers**: Shifting from "landlords" to "IT integrators" by offering B2B managed services and cloud migration support.
- **Connectivity Hubs**: Prioritising the hosting of Internet Exchange Points (IXPs) and subsea cable landing stations to become central nodes in the regional network.

While a small amount of MW can meet the needs of specific niches, scale is ultimately needed to unlock the sector. As Yashnath Issur, CEO of Nxtra by Airtel Africa pointed out "Developing large-scale infrastructure—such as a 40-MW data center—fundamentally transforms the economic model of the industry. Beyond unlocking significant economies of scale in both construction and operations, this level of capacity also strengthens our position when negotiating long-term power purchase agreements. The result is greater cost predictability, improved energy security, and a more resilient foundation for sustainable growth."

The African market is not a "gold rush" characterised by easy wins; rather, it is akin to a refined jewelry-making business. The complexity of local deployment - where convincing a local enterprise to migrate from on-premise servers to a data centre can take between six months and two years - requires high precision and expert local knowledge. However, for those with well-calibrated investments and the patience to navigate the sales cycle, the rewards are significant. As the backbone of a digital economy projected to reach $1.5trn by 2030, these facilities are producing the most highly desired end-product of the modern era: reliable, localised digital capacity.

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Image Source: *Freepik*

AFRICA DATA CENTRES ASSOCIATION

Building International Talents

In the specialised field of data centre operations, Africa is rapidly emerging as an incubator for a new class of "ultra-resilient" technical professionals. As the global industry grapples with a talent deficit - projected by the Uptime Institute to require 2.5 million full-time staff by the end of 2025 - the focus is shifting toward markets that produce engineers capable of managing infrastructure under high-pressure conditions. Because of the global desirability of skills in the data centre field, Africa's talent gap combines a lack of initial training, local head-hunting and international "brain drain".

The operational reality for African data centre staff is fundamentally more complex than in mature markets. Maintaining "five-nines" uptime (99.999%) in hubs like Lagos or Nairobi requires navigating systemic grid volatility and climate extremes. This environment has cultivated a workforce with a unique aptitude for resilient systems management, making African engineers high-value candidates on the global stage.

Rather than viewing the external head-hunting of these professionals solely as a loss, industry leaders are beginning to frame it as a validation of local training standards. African professionals are becoming a global benchmark for adaptability; however, the economics of this talent pipeline remain delicate.

Despite the strategic value of these professionals, the financial burden of training falls almost exclusively on local industry. As Jan Hnizdo, CEO of Teraco explained "we have structured our in-house academy to assist in uplifting the skills base in South African more generally; while we may require 10 or so new technicians annually, we enroll 20, knowing that the remaining 50% will be absorbed by the broader industry."

Sector research indicates that local staff cannot be expected to fund the high cost of specialised certifications, and traditional "work commitment" contracts - which attempt to lock employees in for a set period post-training - have proven challenging to fully rely on in practice. In a "hot" market where global demand outstrips supply, these legal deterrents cannot compete with the aggressive signing bonuses offered by international hyperscalers.

According to the ADCA Insider Survey (June 2025), 39% of operators cite the retention of skilled staff as their primary HR challenge, and this proportion goes up to 67% when focusing on operators present in Nigeria. With 61.3% of companies still relying on fragmented in-house training to stay operational, the industry has reached a consensus: the only viable solution is a collective, non-proprietary talent engine

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Image Source: *IBTC*

AFRICA DATA CENTRES ASSOCIATION

Building International Talents

To address this, the Data Centre Talent Project for Africa was launched in mid-2025. This initiative represents a collaborative "source-train-place" model, designed to move beyond the reactive hiring of the past.

The Curriculum: A three-month foundational program developed with global partners like Lee Perrin, MEA DC Director from CBRE and Africa Data Centre Exco Member, and Nikki Maritz, CEO of IBTC. It bridges the gap between general electrical engineering and the specificities of concurrently maintainable high industry standard (Tier III/IV) environments. As Lee Perrin noted, "the Academy marks the transition from conceptual planning to institutional impact. By integrating global benchmarks with local operational requirements, we are creating a standardised talent pipeline that will serve as a fundamental competitive advantage for African operators within a global market."

Starting with a pilot in Tier 1 markets Nigeria, Kenya, and South Africa before being extended to Tier 2 markets, the program aims to enroll over 100 fresh engineer graduates. With the support of partner operators, it will ensure 30 job placements in its first cycle. Crucially, the program is free for these initial intake students, to close the immediate gap. The resulting expanded talent pool reduces the cost of "poaching" from one company by another. As Nikki Martz highlighted "While data centres are often perceived as collections of hardware, their operational success is fundamentally rooted in human expertise."

While the primary objective is to secure the workforce needed for Africa's own digital sovereignty, the program acknowledges the global context. By producing engineers who are job-ready for both local and international employers, the academy is positioning Africa not just as a consumer of technology, but as a premier provider of the specialised human capital that keeps the global internet running.

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Image Source: *Freepik*

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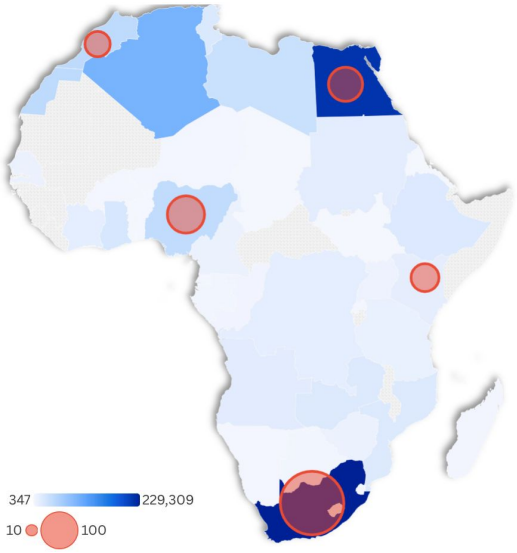
AFRICA DATA CENTRES ASSOCIATION

Part 4: Innovation & Sustainability

AFRICA DATA CENTRES ASSOCIATION

Power: Electric Grid

Total electricity production (GWh) and Data Centre Hubs (MW), 2023



In the burgeoning African data centre market, electrical infrastructure has emerged as the definitive arbiter of scale. While connectivity can be established through permanent subsea and terrestrial fiber infrastructure, power remains subject to the limitations of the national grid. Data centre operators assess the viability of a market based on a "tri-factor" analysis of grid capacity, reliability metrics, and transmission efficiency.

Data from the International Energy Agency (IEA) reveals a continent of stark contrasts. As of 2025, Africa's total installed capacity is heavily weighted toward the north and south, with Egypt and South Africa collectively accounting for over 60% of the continent's power generation. While the map suggests significant headroom in these anchor markets, the reality for energy-intensive industries is one of geographic and technical "chokepoints."

The challenge for 2026 is that generation centers are frequently situated far from the low-latency urban hubs where data centres thrive. According to the African Energy Chamber (AEC), the mismatch between where power is generated (often remote hydro or coal sites) and where it is consumed (metropolitan digital hubs) creates a localised capacity deficit. In cities like Lagos or Nairobi, the local distribution network often lacks the capacity to support the high-density requirements of modern AI racks, which now consume between 30 kW and 100 kW per unit—a load profile that can be equivalent to that of an entire residential block.

Reliability remains the most significant operational hurdle. In mature markets, power quality is an assumption; in Africa, it is a variable that dictates the "reliability premium." Analysts increasingly utilise the System Average Interruption Duration Index (SAIDI) to quantify this risk. While the global benchmark for high-tier data centers is "five-nines" (99.999%) uptime, many Sub-Saharan grids experience SAIDI figures that reflect hundreds of hours of outages annually.

According to World Bank data from mid-2025, grid instability in markets like Nigeria forces data centres to operate as de facto independent power plants. This instability has a direct impact on Power Usage Effectiveness (PUE). When a facility must frequently transition to Uninterruptible Power Supply (UPS) systems or onsite diesel/gas generation, energy is lost in conversion and standby readiness. Research from the Africa Data Centres Association (ADCA) suggests that this "instability tax" contributes to an average African PUE of 1.67, outpacing the global benchmark of 1.58 and eroding the cost-competitiveness of local hosting.

The third pillar of analysis is transmission quality, specifically the "technical losses" incurred between the power plant and the data centre. In 2025, transmission and distribution (T&D) losses in several East and West African nations remained as high as 18% to 25%, far exceeding the global average of 7-8%.

To mitigate these losses and enhance stability, the focus is shifting toward Regional Power Pools, such as the West African Power Pool (WAPP) and the Southern African Power Pool (SAPP). These interconnections allow for the cross-border "wheeling" of electricity, enabling a data centre in a power-deficient country to theoretically procure cleaner, more stable hydro or geothermal power from a neighboring state. By 2026, these "electric highways" are expected to become as critical to data centre siting as subsea cable landings, providing the regional redundancy required for the continent's growing cloud and AI ambitions.

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Map Source: IEA (International Energy Agency)

Part 4: Innovation & Sustainability

AFRICA DATA CENTRES ASSOCIATION

Power: Renewables

Africa's digital transformation is driving a surge in data centre capacity, necessitating a shift toward sustainable power solutions to counter grid volatility. In South Africa, regulatory reforms facilitating energy wheeling – the process of transporting privately produced electricity over the public grid – have enabled the procurement of utility-scale solar and wind power. Simultaneously, Kenya is leveraging its vast geothermal reserves to provide stable, low-carbon baseload energy. As Nigeria and Egypt explore hybrid models and green hydrogen, the industry is moving toward energy self-sufficiency. This transition to renewables is critical for meeting international ESG criteria, enhancing operational resilience, and securing the long-term viability of the continent's burgeoning digital infrastructure.

Africa has **60%** of the world's best **solar** resources

Hydropower is Africa's most established renewable source, yet **90%** of its potential remains untapped

Geothermal: The East African Rift's technical potential is estimated at **15,000 MW - 20,000 MW**

Wind energy's untapped **59,000 GW** has the potential to satisfy the entire continent's current electricity demand **250 times** over

Africa could produce **5,000 megatonnes** of **green hydrogen** per year

Case Study

RACKCENTRE

As Africa's digital economy accelerates, the rapid adoption of cloud services, data-intensive applications and artificial intelligence is driving demand for high-density compute infrastructure. In Nigeria, this growth has historically been constrained by a single overriding challenge: **power availability**. Today, that challenge is evolving. The priority is no longer access alone, but **access delivered sustainably** and at scale.

Rack Centre's latest expansion, LGS2, reflects this shift. More than an increase in capacity, the facility represents a fundamental redesign of how energy is generated, managed and consumed within a mission-critical environment. By transitioning away from diesel-dependent models towards a gas-fired captive power solution, complemented by a modular solar installation, Rack Centre has aligned resilience with efficiency and emissions reduction.

This integrated energy architecture enables the delivery of AI-ready workloads without compromising environmental performance. With one of the lowest Power Usage Effectiveness (PUE) ratios in the region, a greater proportion of energy is directed to compute rather than overheads, supporting both operational efficiency and long-term cost predictability.

For Rack Centre, "AI-ready" extends beyond high-density cooling and rack design. It encompasses a broader commitment to building infrastructure that supports innovation while advancing Africa's energy transition. In one of the continent's most complex power markets, the company is demonstrating that sustainable, high-performance digital infrastructure is not aspirational, it is already being delivered at scale.

1.35 PUE
Lowest Power Usage Effectiveness currently operating in the regional market.

21.5% annual emissions reduction
Achieved through the transition from diesel-reliant generation to cleaner gas-based power.

Solar designed to cover 5.5% of long-term 12 MW capacity, currently offsetting **43% of Phase 1** operational load.

AI-ready by design
Infrastructure optimised for high-density compute with sustainability embedded at the core.

RISING ADVISORY

Part 4: Innovation & Sustainability

AFRICA DATA CENTRES ASSOCIATION

Energy-First Pivot

In November 2025, a stark reality check reverberated through the East African tech corridor. President William Ruto, addressing the Kenyan population, revealed that a landmark $1bn hyperscale project - a collaboration between Microsoft and UAE-based G42 - had faced an immediate existential hurdle: power. The initial phase of the facility required 100 MW, with plans to scale to 1 GW (1,000 MW). "To power a single hyperscale facility," Ruto noted, "we would have to shut down the whole country." At the time, Kenya's total effective grid capacity was approximately 2.4 GW. A 1 GW data centre would consume over 40% of the nation's entire power generation, exposing the massive friction between digital ambition and energy reality.

However, far from being a deal-breaker, this "power crunch" is birthing a more sophisticated economic model, with data centres evolving into anchor off-takers that make large-scale energy projects bankable.

Historically, Independent Power Producers (IPPs) in Africa have struggled with "demand risk" - the uncertainty of whether a buyer will exist for new capacity. Data centres can solve this. Their demand profile is unique: high-density, 24/7 baseload requirements with a predictability that industrial manufacturers or residential grids cannot match.

By signing long-term Power Purchase Agreements (PPAs), hyperscalers like Microsoft, Amazon, and Google provide the financial "gravity" needed to pull new generation projects toward completion. In Kenya, the Microsoft-G42 project is now pivoting toward an energy-led siting strategy in the Naivasha geothermal zone. By locating adjacent to the Olkaria geothermal field - which provides nearly 50% of Kenya's current power - the project can tap into direct "behind-the-meter" generation. This model powers the servers, and simultaneously finances the expansion of the geothermal field itself, potentially adding hundreds of megawatts to the national pool that would otherwise lack a high-credit-rating anchor client.

The traditional connectivity-first development logic is now reversed. **In Africa, power is the primary variable.** As Oladele Oyekunle, CEO of Synectics, illustrates: "We prioritize energy supply by anchoring our AI factories at the Karuma Hydro-Power Plant (K-HPP) in Uganda. In our model, power is the primary variable, while connectivity is a secondary layer to be deployed."

This shift is visible in the emergence of Energy-Led Design, such as Grid Stability as a Service: In South Africa, where grid load-shedding has been a chronic headwind, data centre operators are investing in Grid-Interactive Uninterruptible Power Supplies (GUPS). These systems use massive battery arrays to stabilise the local frequency, effectively selling "resilience" back to the utility provider.

The 2026 Outlook: The African Energy Chamber (AEC) projects that data centre demand will hit 2 GW by 2030. This growth is acting as a catalyst for $10bn to $20bn in new energy investment. For every 1 MW of data centre capacity, research suggests a multiplier effect that can trigger up to 3 MW of broader infrastructure development.

The "usage gap" and "coverage gap" discussed in previous chapters cannot be solved without this energy-first approach. Globally, AI workloads require 30 kW to 100 kW per rack - a tenfold increase over traditional cloud services. To meet this, African developers are moving toward energy autonomy. In Nigeria, where the grid often provides only four hours of power daily, the cost of diesel can reach 60% of OpEx. The strategy here is for operators to build their own microgrids - combining solar, battery storage (BESS), and gas-to-power - to bypass the grid entirely.

As these facilities become the "nuclei" of power hubs, they lower the barrier for other industries. A solar farm built for a data centre can provide "spillover" power to nearby industrial parks or residential sectors at a lower marginal cost.

Africa is becoming a global laboratory for decoupled infrastructure. While the Microsoft/G42 project highlighted the initial mismatch between grid capacity and hyperscale demand, it also set the stage for the "10,000 MW" mandate. Governments that facilitate private generation and flexible PPAs will see data centres not just as "servers in a box," but as the foundational investors in their national energy security. By 2030, the most successful African nations will be those that treated data centres as the anchor tenants of their entire industrial future.

Data Centres can ignite power production projects by being **anchor tenant**

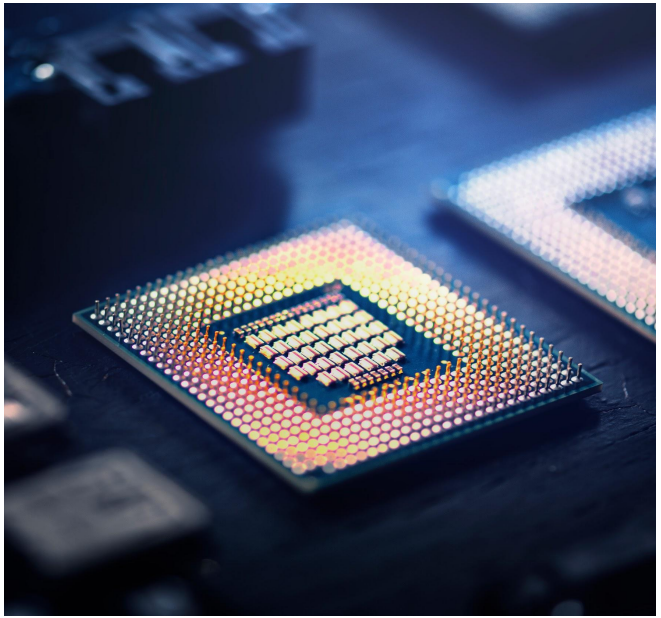
Meeting the need for predictable power comes at a **Reliability Premium**

Africa is becoming a global laboratory for **decoupled infrastructure**

Part 4: Innovation & Sustainability

AFRICA DATA CENTRES ASSOCIATION

AI Infrastructure & User Adoption



As of early 2026, the global conversation surrounding data centres has shifted from simple storage to the industrial-scale processing of intelligence. For Africa, this transition is defined by a fundamental hardware shift: the Graphics Processing Unit (GPU). Unlike Central Processing Units (CPUs) that are traditionally used in data centres, GPUs are designed for the massive parallel processing required by Artificial Intelligence (AI). However, integrating this "AI engine" into the African data centre ecosystem necessitates a complete re-engineering of the facility's thermal and electrical architecture.

The primary physical difference between a traditional cloud facility and an "AI-ready" one is density. While a standard enterprise server rack typically draws between 5 kW and 15 kW, a rack populated with modern GPUs – such as the NVIDIA Blackwell B200 – can demand between 60 kW and 120 kW. This eight-fold increase in power density renders traditional air-cooling systems obsolete. In response, the industry is pivoting toward liquid cooling, specifically direct-to-chip and immersion technologies, which are up to 40% more energy-efficient than traditional air conditioning .

The pace of this technological evolution is unprecedented. In 2025, the launch of the Blackwell architecture provided nearly three times the energy efficiency of its predecessor, the H100, for Large Language Model (LLM) inference. This rapid advancement creates a strategic "obsolescence risk": operators fear that infrastructure ordered today may be surpassed by more efficient ones before it is even commissioned.

Consequently, the market is characterised by a "measured readiness" rather than a blind rush.

Despite this caution, 2025 saw the announcement of Africa's first true "AI Factories" – facilities dedicated exclusively to high-performance compute.

- **Cassava Technologies (South Africa)**: Partnering with NVIDIA to deliver AI-as-a-Service, providing sovereign supercomputing and model-training capabilities across its regional data centre footprint.
- **Altron (South Africa)**: Launched the country's first operational AI factory in late 2025, providing a locally hosted NVIDIA-powered ecosystem for secure, enterprise-grade model deployment.
- **Microsoft & G42 (Kenya)**: A landmark $1bn investment in a geothermal-powered AI campus in Olkaria, targeting an initial 100 MW to serve East Africa.
- **Synectics (Uganda)**: Developing the "Aeonian Project," a 100MW off-grid green facility at the Karuma Hydropower Plant featuring Africa's first sovereign AI supercomputer.
- **Nexus Core Systems (Morocco)**: A planned 500 MW AI campus in partnership with Naver and NVIDIA, specifically designed for "sovereign compute" across the EMEA region.

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Image Source: *Freepik*

Part 4: Innovation & Sustainability

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AI Infrastructure & User Adoption

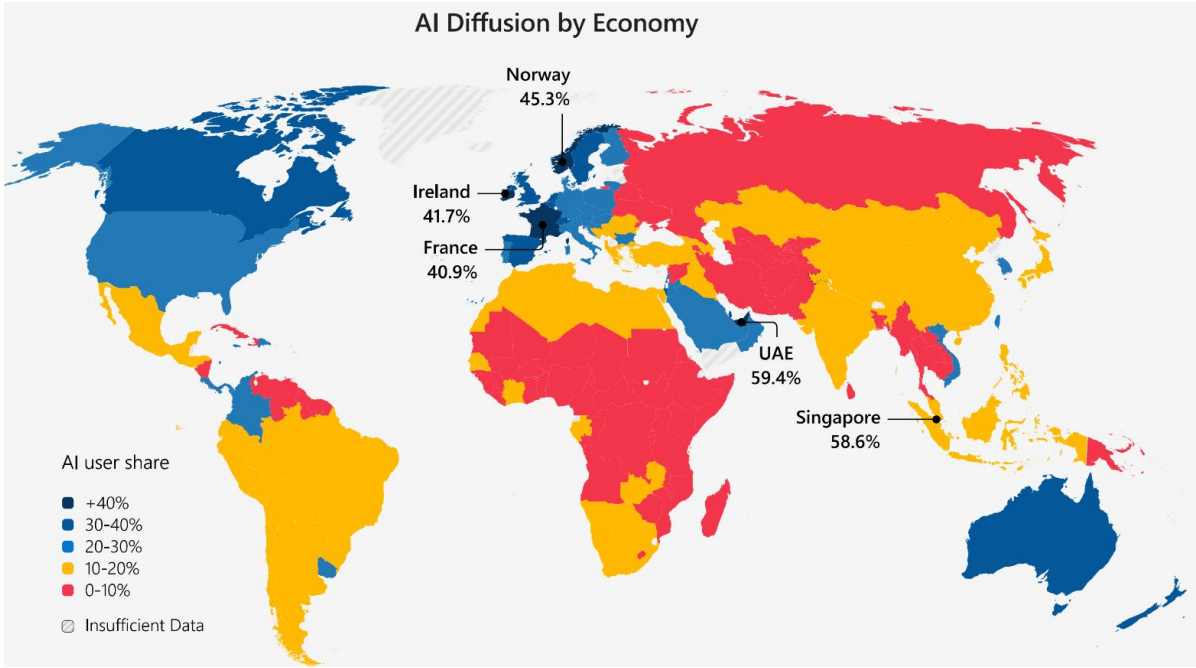
Large-scale "factories" still remain the exception, while most operators adopt a modular approach to AI infrastructure. As the ADCA Insider Survey (June 2025) revealed: 36% of respondents have already adopted AI-ready equipment, while another 35% are actively provisioning for it through modular designs. This pragmatic "ready-when-needed" approach allows operators to scale their GPU capacity incrementally as specific client demand materialises.

Current consultative research suggests that while interest is high, massive enterprise-scale demand has yet to appear across all African markets. Local governments and large enterprises remain cautious, largely due to cybersecurity and data privacy concerns. Uncertainties regarding how data is used for model training and where private information is stored are acting as a temporary brake on adoption.

Yet, industry leaders view this as a period of "calm before the storm." As AI is expected to become a primary metric for global competitiveness, African organisations will eventually adopt localised AI. Content providers are already anticipating this shift, preparing to move inference – the phase where AI models respond to user queries – closer to the African user to reduce latency.

The current AI cycle draws parallels to the early internet era: an initial rush followed by a potential period of oversupply and consolidation. However, the 2026 market is wiser, and African operators are building with flexibility. By adopting modular, "AI-provisioned" designs, the sector is positioning itself to be a "digital enabler" that can jump in as soon as the outcome becomes clear.

In this landscape, success will not be measured by who built the most capacity first, but by who built the most adaptable infrastructure to host the intelligence of tomorrow.



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Map Source: *AI Diffusion Technical Report, Microsoft AI for Good Lab, 2025*

Part 4: Innovation & Sustainability

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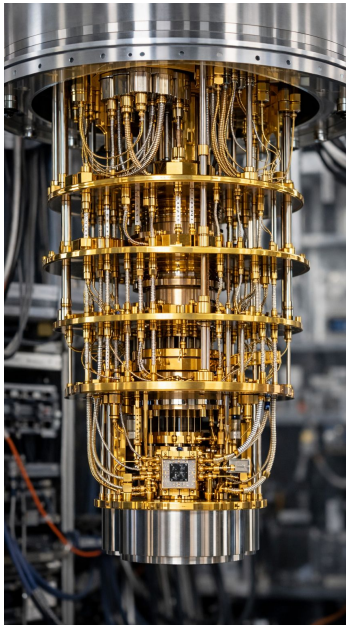
Quantum Computing

As the global digital landscape matures toward 2026, quantum computing is transitioning from theoretical physics to a critical consideration for long-term infrastructure planning. While artificial intelligence (AI) dominates the current "stream of demand" in Africa, the eventual integration of quantum capabilities represents the next frontier in computational sovereignty.

Quantum computing fundamentally departs from the binary logic of classical silicon-based systems. While traditional computers process information using bits – representing either a 0 or a 1 – quantum systems utilise quantum bits, or "qubits." These qubits leverage the principles of superposition, allowing them to exist in multiple states simultaneously, and entanglement, which links qubits regardless of physical distance. Rather than following a deterministic path, quantum processors employ probabilistic models to solve complex combinatorial problems. This shift enables a level of parallel processing that is theoretically capable of performing in seconds calculations that would take today's most powerful supercomputers millennia to complete.



In early 2026, quantum computing is largely deployed via hybrid cloud models, where "quantum-ready" algorithms are tested on classical hardware (CPUs/GPUs) before being executed on remote quantum processors. According to 2026 industry outlooks from Fujitsu and IBM, this hybrid approach is now the standard for enterprise-grade deployments. Its primary utility today lies in three high-stakes sectors:

- **Logistics and Supply Chain**: Specialised firms like D-Wave are already working with global entities to optimise delivery routes and inventory distribution across volatile emerging markets where infrastructure gaps make classical logistics inefficient.
- **Financial Services**: High-frequency trading and risk assessment models are being fine-tuned using quantum annealing. In the African context, research from Sopra Steria highlights the potential for "hyper-local" credit scoring and fraud detection in the fintech sector, processing millions of mobile money transactions in real-time.
- **Material Science and Energy**: Quantum simulation is accelerating the discovery of new battery chemistries for renewable energy storage – a critical need for African data centres seeking off-grid stability. By simulating molecular interactions at a sub-atomic level, researchers can bypass years of physical laboratory testing, potentially localising the production of high-efficiency solar cells.

For data centre operators, quantum computing necessitates a radical departure from standard Tier III or IV designs. Unlike the air-cooled or liquid-cooled racks used for AI, most current quantum processors – specifically superconducting models – require extreme cryogenic environments, operating at temperatures near absolute zero (-273°C). According to infrastructure studies by Canovate, this introduces new specialised cooling infrastructure and vibration-shielded "quantum halls."

Furthermore, the massive power requirements for these cooling systems, combined with the need for ultra-secure quantum-resistant encryption (Post-Quantum Cryptography), will likely see the emergence of dedicated quantum enclaves in primary hubs to serve as high-security "sovereign compute" anchors for the continent.

Key Takeaways

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Strategic infrastructure

Data centres are the backbone of Africa's digital economy, driving cloud, AI and public services. Their location, ownership and energy integration are reshaping Africa's competitiveness and digital sovereignty.

Capacity gap and concentration

Africa hosts less than 1% of global data centre capacity, with hubs in South Africa, Egypt, Kenya, and Nigeria. Offshore hosting dominates, while new capacity often outpaces demand, signalling huge growth potential.

Performance and compute proximity

Latency and local compute power are game-changers for productivity and AI. Markets with local data centres deliver faster, more reliable services than those relying on offshore infrastructure.

Power as a gating variable

Unstable grids are holding back data centre growth. Operators are turning to renewables, on-site power, and energy deals, making data centres key drivers of new energy projects.

Regulatory maturity and data sovereignty

With 40+ nations enacting data laws, clearer rules are attracting investment and boosting demand for local infrastructure, turning regulation into a growth enabler.

Market maturation and business models

Africa's data centre sector is levelling up. Platform-based models, AI-ready facilities, and specialised services, financed by more capital sources, are driving a more advanced, resilient ecosystem.

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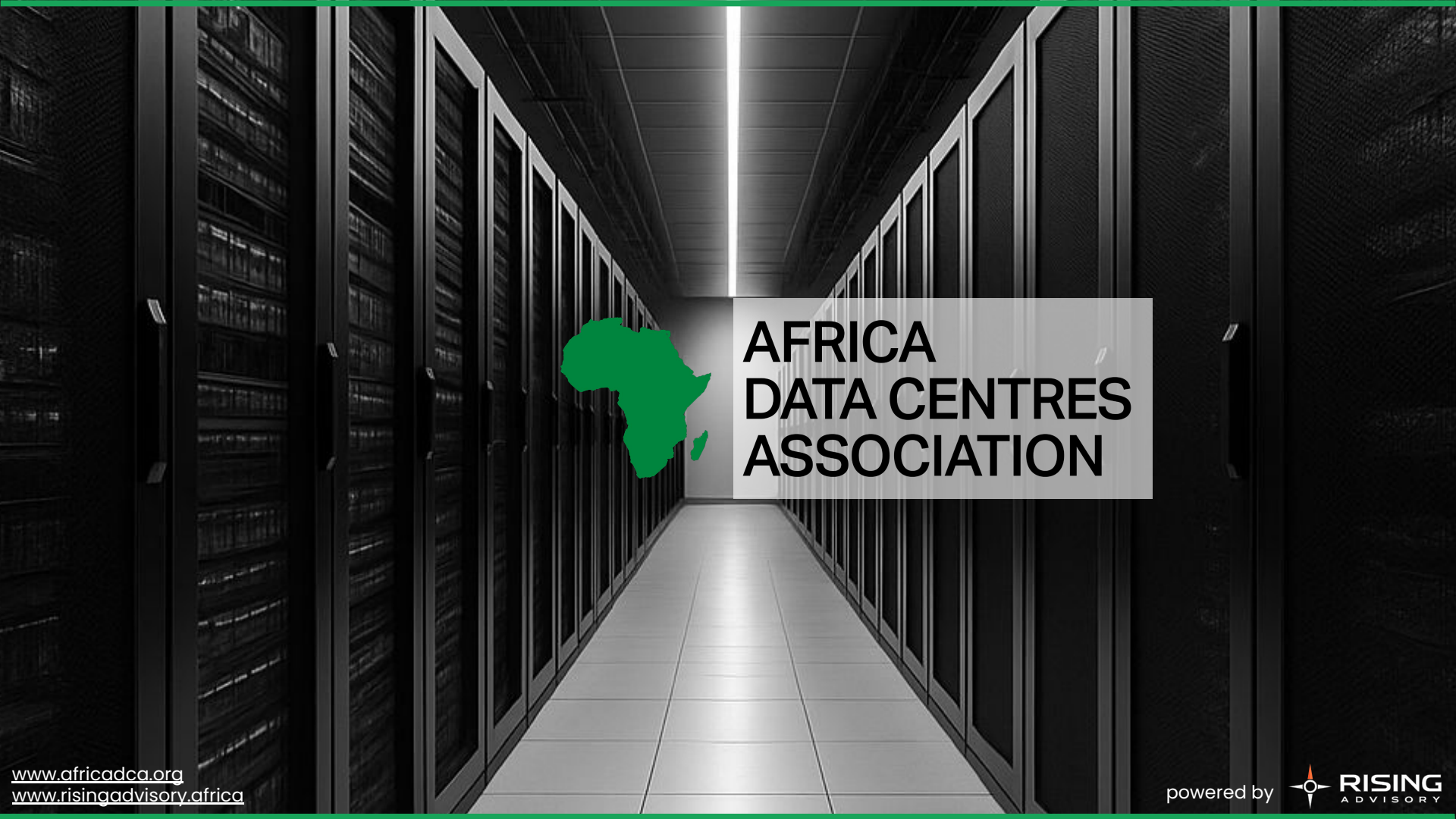

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