DATA GOVERNANCE IN AFRICA

EAST AFRICA DATA CENTER MARKETS

A XALAM MARKET BRIEF

PREPARED FOR HAUS, GIZ AND DIGITAL INVESTMENT FACILITY PARTNERS

MAY 2025

Design: *Anastasia Beltyukova*

Image credits: *Amanti Nation, Bady Abbas, Caleb Jack, Christina Wocintechchat, Desola Lanre, Grace Nandi, Hush Naidoo, Krzysztof Kowalik, Luke Jones, Markus Spiske, Mike Kononov, Murad Swaleh, Reggie B, Ron John, Sammyayot254, Jakub Zerdzicki, NASA*

INTRODUCTION

- This report is part of a series of market briefs developed by Xalam Analytics at the behest of Digital Investment Facility (DIF) under the Data Governance in Africa Initiative, on the data center market opportunity in sub-Saharan Africa ("SSA").

- This analysis aims to provide key insights into market demand and supply patterns for data center markets, business landscape, regulatory impact and investment returns. The research aims to provide potential investors and stakeholders with the latest information on the data center market in the SSA region.

- This review is based on our assessment of information and data as available to our research. It is further underpinned by our understanding of the marketplace along with market data and insights collected through continuous research.

- This report is focused on the East African market. It provides an aggregate view of the data center market in the region. Country-level summary insights are available separately from the Digital Investment Facility team. For this iteration of the report, estimates cover five countries principally: Ethiopia, Kenya, Rwanda, Tanzania and Uganda. Additional countries may be added in subsequent market updates.

- The numbers and estimates in this report are derived from a mix of sources, including estimates from Xalam Analytics' economic models, data providers, regulator data and other sources as may be indicated.

- This report is prepared with funds from the Data Governance in Africa Initiative, a project financed by the European Union, Germany, Belgium, Estonia, Finland and France under the Digital for Development (D4D) Hub. The contents of this Market Brief are the sole responsibility of Xalam Analytics and do not necessarily reflect the views of the funders.

TABLE OF CONTENTS

KEY DEFINITIONS

Data center	While there are a variety of definitions for data centers, this market review is focused on commercial facilities, that is, facilities that lease colocation white space and power capacity to third-party customers on open, commercial terms, and in exchange for a fee. Captive facilities (bank data centers, telco switch sites and similar) are excluded from this assessment. Estimates focus on facilities at Tier II standard and above, unless otherwise indicated. Where applicable, these estimates include cloud hyperscaler self-built facilities.
Live critical IT load	Capacity that is active, under lease or readily available for lease.
Full build capacity	Data center facilities are typically built in phases; the full-build capacity is capacity assuming all potential phases of build have been completed and are live.
Capacity in construction	Facilities that have broken ground; ongoing civil works, installation and commissioning phases.
Pipeline	Facilities publicly announced or listed as in development. Some execution phases have been initiated (e.g. land control, energy supply commitments, etc.), but no actual civil works have been undertaken.
Carrier-neutral	Facilities not specifically affiliated to a connectivity or cloud vendor, with capacity available to all third-party customers, on equal commercial terms, without explicit or implicit constraints or favoritism. This market review uses a loose definition for carrier-neutral, referring to facilities that are purely carrier-neutral, recognized by the market or effectively managed as such.

GLOSSARY

AI	Artificial Intelligence
ASN	Autonomous System Number
BB	Broadband
CAGR	Compound Annual Growth Rate
CapEx	Capital Expenditures
CDN	Content Delivery Network
Colo	Colocation
DC	Data Center
DFI	Development Finance Institutions
DIF	Digital Investment Facility
DRC	Democratic Republic of Congo
EU	European Union
FBB	Fixed Broadband
FDI	Foreign Direct Investment
FX	Foreign Exchange
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GW	Gigawatt
ICT	Information, Communications and Technology
IFC	International Finance Corporation
IMF	International Monetary Fund
IPP	Independent Power Producer
IRR	Internal Rate of Return
IT	Information Technology
IXP	Internet Exchange Point
Km	Kilometer
kW	Kilowatt
kWh	Kilowatt hour
LLM	Large Language Models
MNC	Multinational Corporation
MNO	Mobile Network Operator
MRR	Monthly Recurring Revenue
MSP	Managed Service Provider
MW	Megawatts
OEM	Original Equipment Manufacturer
PoP	Point of Presence
PUE	Power Usage Effectiveness
RFS	Ready For Service
SSA	Sub-Saharan Africa
USD	US dollar

1. THE STATE OF THE EAST AFRICAN DATA CENTER MARKET

The East African Internet market reached a critical milestone in 2023, crossing 100m active broadband connections, the culmination of a decade of unprecedented expansion in the region's digital infrastructure.1

The transformation of East Africa's digital infrastructure has been fueled by systemic change in the region's demographics, economy and digital user base. East Africa's urban population has expanded by ~40% since 2012. It is slated to grow by another 40%+ by 2030, boosted by a near-irresistible wave of migration from rural areas to urban cities. In Nairobi, Dar es Salaam and Addis Ababa, East Africa is now home to three megalopolises and an increasing number of cities with 1m inhabitants or more.

The region's economic growth has been a key catalyst. East African economies have averaged real GDP growth between 5% and 8% over the past three years. Both Kenya and Ethiopia have doubled their GDP per person over the past decade as governments intensified efforts to attract private investment and diversify their economies.

The region's increased digitization has been a key feature of this economic growth. East Africa is home to some of Africa's most dynamic Internet markets and has emerged as a fertile ground for digital services innovation, spawning world-leading fintech applications and one of Africa's most dynamic startup ecosystems.

[1] *For the purposes of this analysis, estimates for East Africa include the following five countries: Ethiopia, Kenya, Rwanda, Tanzania and Uganda.*

A BURGEONING DATA CENTER INDUSTRY

The emergence of a burgeoning data center industry has been one of the more notable features of East Africa's digital infrastructure expansion.

The region is home to some of the most promising data center markets in sub-Saharan Africa. Around 25 facilities at Tier III standard or higher are active in the region, 14 of which in Kenya and Ethiopia.

With an aggregate capacity of nearly 30MW in live critical IT load at the end of 2024, East Africa has the second largest data center capacity block in SSA, behind Southern Africa. The region is the second most penetrated by data centers in SSA, relative to population size.

The sector has witnessed relatively robust growth, with available market capacity doubling over the past three years as 15 new facilities came to market. Data center services adoption has picked up, with revenue rising by an average of 30% over the past three years and crossing the $50m milestone in 2024.

The market is still in early stages of growth. Facilities are small; three-quarters of East Africa's commercial facilities have less than 1MW of available critical IT load. Similarly, only 45% are managed by specialist, "carrier-neutral" data center providers, though that proportion is fast rising.

The facilities are concentrated around a number of core economic and cable landing hubs; Nairobi, Mombasa and Addis Ababa account for 80% of East Africa's available data center capacity.

THE IMPACT OF DATA CENTERS REVERBERATES ACROSS THE VALUE CHAIN

The development of data centers has had a broadly stimulating effect on local job creation. Each new facility comes with a new set of advanced positions in cloud, networking, as well as electrical and mechanical engineering. To address a skill shortage prevalent in many markets, more providers are undertaking to develop their own training and upskilling programs to source local talent.

The indirect impact of data centers is even more significant. Facility construction and operation reverberate throughout the region's technology value chains, with a multiplier effect on jobs and economic growth, from civil works to enabling a broader digital applications ecosystem.

KENYA

Kenya is the largest market in the region, accounting for nearly half of East Africa's live critical IT load in 2024. The country is home to both the largest economic center (Nairobi) and the most important connectivity hub on Africa's East coast (Mombasa). While historically strong, Kenyan capacity growth has decelerated slightly over the past two years as facility construction rates cooled down, to around 15% a year, or nearly half the regional average.

ETHIOPIA

Ethiopia is the second largest data center market in East Africa, with around 10MW of critical IT load, an inventory stock well short of its presumptive potential. Ethiopia is East Africa's largest economy and the third largest in SSA. With a population of 110m, it is the second most populated country in SSA and one of the region's prime destinations for bilateral and multilateral lending.

Ethiopia has been the fastest-growing data center market in East Africa. The country's commercial capacity has expanded by more than 130% over the past three years, on the back of intensifying facility construction. Together, Kenya and Ethiopia account for around 80% of East Africa's commercial data center capacity.

TANZANIA

Tanzania has the second-largest economy in the East African Community (EAC) trade block. The market is potentially large, with a 40 million-connections broadband sector, one of the largest in Africa. With an estimated capacity of around 3MW, Tanzania's data center capacity is not commensurate to the size of its economy and population.

The Tanzanian data center market has seen flat growth in available capacity over the past few years, as providers eschewed construction due to unattractive operating conditions. More capacity is coming to the market as conditions improve. Wingu, a carrier-neutral provider, entered the market in 2022. Another, Raxio, is expected to launch a facility within the next two years, adding much-needed capacity.

UGANDA

Uganda is a promising market for data centers. The country has a dynamic broadband market, the third largest in the East African Community after Kenya and Tanzania. Data center capacity growth has been relatively modest, with a key milestone in 2021, the launch of the country's first carrier-neutral facility, Raxio. Outside of data centers from Raxio and MTN Uganda, facilities are small, hybrid facilities or server rooms, with fewer than 50 racks. With an available capacity around 2MW, the market remains relatively small and the pipeline modest as providers look to absorb existing capacity.

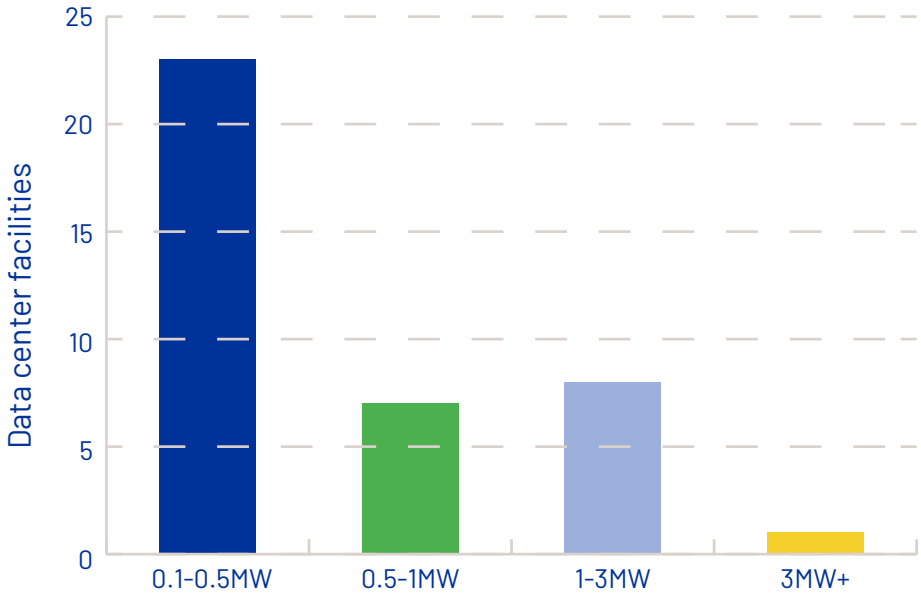
RWANDA – AWAITING ITS FIRST CARRIER-NEUTRAL TIER III STANDARD FACILITY

Rwanda has one of smallest economies in the eight-member EAC trade block. With commercial capacity estimated at less than 1MW, the data center market is still in early phases of development, and well-below demand potential for one of the region's fastest-growing economies. Growth is set to accelerate over the next few years, thanks to new facility construction from carrier-neutral providers Africa Data Centres and PAIX.

EAST AFRICA – COMMERCIAL DATA CENTER FACILITIES – 2024

Each circle represents a commercial DC facility; circle size reflects facility size in MW.
Sources: *Xalam Analytics estimates; Company data.*

EAST AFRICA – DISTRIBUTION OF DATA CENTER FACILITIES BY SIZE - 2024



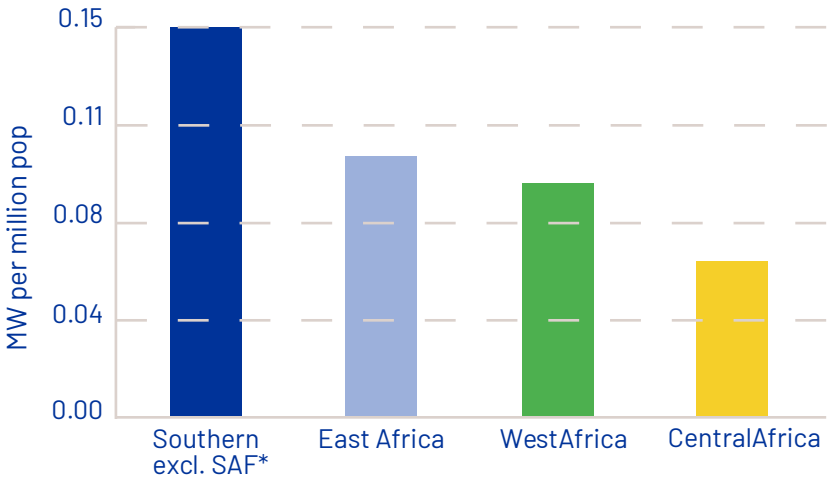
Sources: *Xalam Analytics estimates, provider data*

2. EAST AFRICA DATA CENTER CAPACITY REQUIREMENTS

Despite the considerable progress achieved over the past few years, there are indications that East Africa will need substantially more hosting capacity to support rising demand. The pent-up demand for additional capacity is visible at a macro level. When measured against population size, East African data center capacity falls below Southern Africa levels.

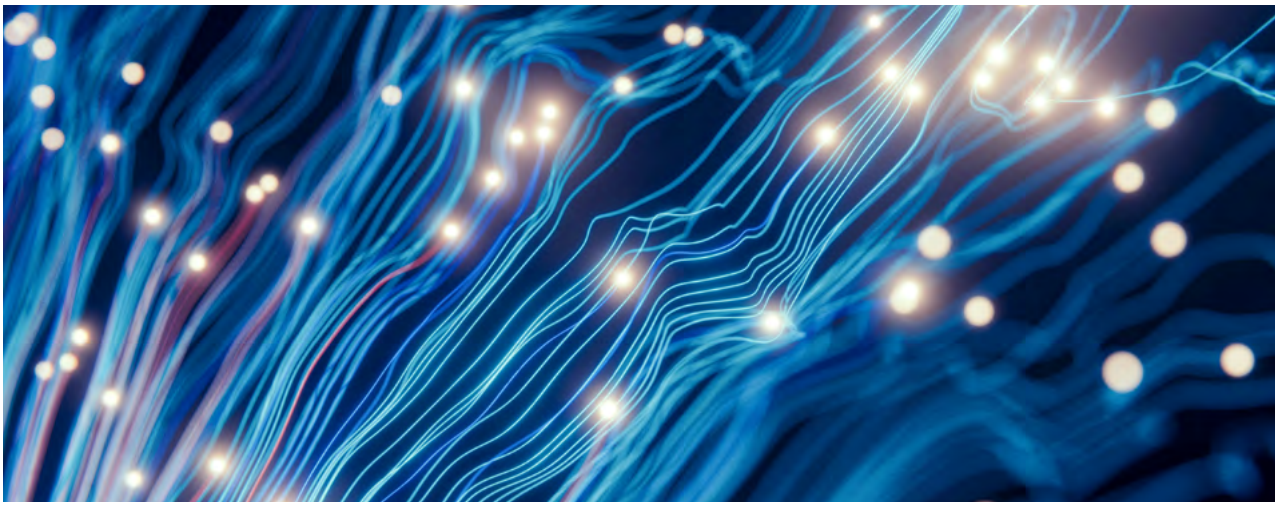
To hit a capacity-to-population ratio at the level of a moderately mature market such as Morocco, for example, East Africa would need to add around 150MW of new capacity over the next few years, or 25 to 50 new data center facilities.

RELATIVE DEPTH OF DATA CENTER MARKET – MW CAPACITY PER MILLION POPULATION IN KEY AFRICA REGIONS [1]



[1] *Southern Africa excluding South Africa (off-scale)*

Source: *Xalam Analytics estimates*



More data centers are needed to support an increasingly complex and fast-densifying content and connectivity ecosystem. As traffic volumes continue to surge, more providers are building points of presence (PoPs) across the region to reduce latency, lower transit costs and interconnect with peers. Data from Internet registry Afrinic suggests that the number of participants to regional Internet exchanges has doubled over the past five years, an indication of a deepening ecosystem and stronger demand for localized exchange points.

Additional data center capacity would similarly be needed to support East Africa's growing appetite for cloud services. Kenya, the most advanced and largest cloud market in the region is a particular case in point. More than most in Africa, Kenyan banks have been under significant pressure to transform. Kenyan customers are among the most digitally-savvy in the African continent and dozens of startups are using cloud tools to transform entire sectors. What is more, the Kenyan government has led one of Africa's most ostensibly aggressive efforts to connect public sector institutions to broadband and harness digital tools for public service delivery.

While other East African markets are not as advanced on cloud usage, they are also witnessing considerable progress. Overall, East African enterprise spend on cloud services has been robust, growing by 25-30% on average over the past three years, to around $450m/year. Xalam projects cloud services revenue to continue to grow as public cloud regions come to the market, with revenue topping the billion-dollar mark by 2030.

To tackle this growing opportunity, regional and global cloud providers are reinforcing their infrastructure in the region by building cloud points of presence in major economic hubs. Both Oracle and Microsoft have announced public cloud regions in Kenya over the medium term. In addition, AWS offers a local zone option for latency-sensitive applications in Kenya. There is a general expectation that global providers will deploy smaller, edge cloud infrastructure in Tanzania, Uganda and Rwanda to serve a growing base of regional customers.

To support this growing demand, East Africa will need a mix of facilities, including larger, upper 5MW, "hyperscaler" facilities in large metros to support and enable hyperscaler cloud deployments. The region will also need smaller, edge-facilities to serve more localized needs, offer latency-sensitive applications, support smaller-scale enterprise IT deployment and extend service reach beyond capital cities and into Tier 2 metro centers.

3. EAST AFRICA DATA CENTER PIPELINE AND OUTLOOK

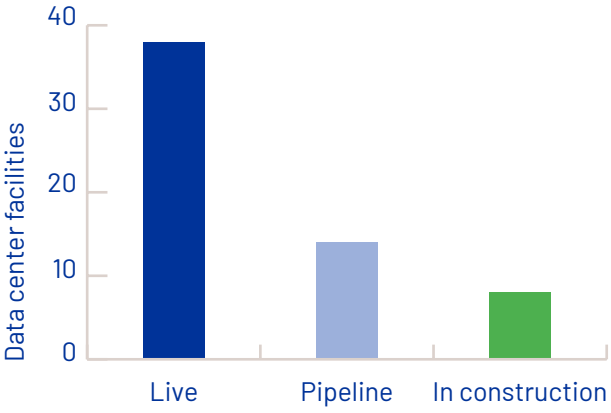
The East African data center market is now witnessing a wave of facility construction to meet the projected demand for hosting capacity. An estimated eight commercial data center facilities were in construction in the region as of early 2025 and set to come to market by the end of 2026. Another fourteen were in various stages of the development pipeline and slated to come to market by 2030.

Overall, around 100MW of fresh data center capacity is projected to hit East African markets by 2030, nearly quintupling the region's critical load inventory. Nearly three-quarters of this new build will take place in Kenya, buoyed by a broadly anticipated wave of cloud hyperscaler infrastructure build. Other markets in the region are expected to add another 25-30MW of data center supply to support digital economy growth.

New players are bringing in new capacity to the region. Key new players include G42, an Emirates provider in which Microsoft holds a stake. G42 is building a campus in Olkaria, in collaboration with local firm Olkaria Ecocloud. Located in Nakuru County, 120 km Northwest of Nairobi, the Olkaria campus is slated to host Azure's first public cloud region in East Africa. Airtel's Nxtra unit is expected to be another new entrant. The company has targeted Kenya as one of two major locations for its first African dedicated facility deployments, with its first facility going live in 2026.

Facility construction is picking up in other markets as well. Tanzania is set to see its second carrier-neutral facility within the next two years, while Rwanda will see two carrier-neutral facilities coming to market over the same period.

CHART - EAST AFRICA – DATA CENTER FACILITY PIPELINE - 2024[1]

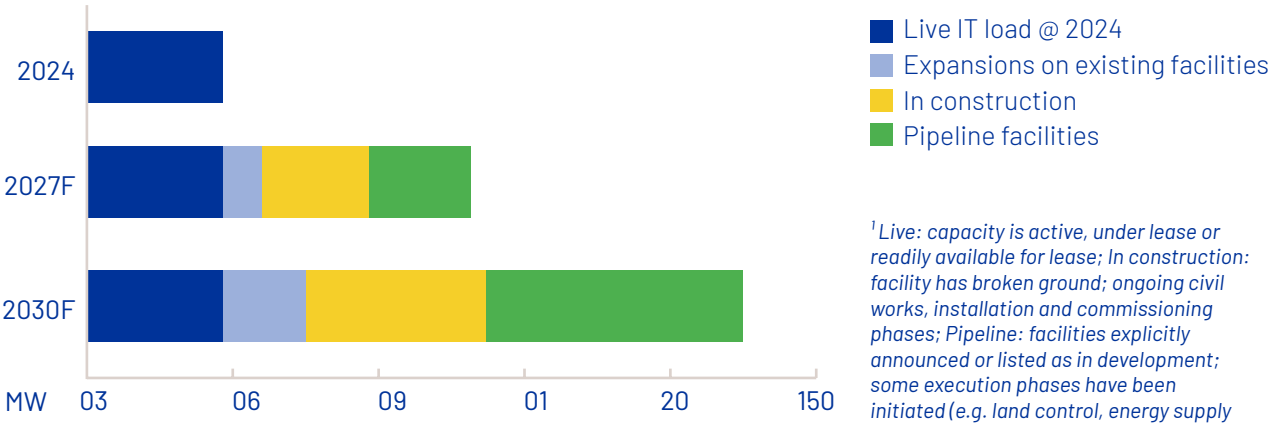


[1] *Live: capacity is active, under lease or readily available for lease; In construction: facility has broken ground; ongoing civil works, installation and commissioning phases; Pipeline: facilities explicitly announced or listed as in development; some execution phases have been initiated (e.g. land control, energy supply commitments, etc.), but no actual civil works have been undertaken.*

Sources: *Xalam Analytics estimates, provider data*

EAST AFRICA – AGGREGATE DATA CENTER BUILD PIPELINE [1]

In MW



[1] *Live: capacity is active, under lease or readily available for lease; In construction: facility has broken ground; ongoing civil works, installation and commissioning phases; Pipeline: facilities explicitly announced or listed as in development; some execution phases have been initiated (e.g. land control, energy supply commitments, etc.), but no actual civil works have been undertaken.*

Sources: *Xalam Analytics estimates, provider data*

EAST AFRICA DATA CENTER CONSTRUCTION PIPELINE – SAMPLE KEY PROJECTS

Provider	Facility	Metro	Status	Ready for Service	Capacity - MW
Africa Data Centres	NBO-1	Nairobi	Expansion	2025/28	+6MW
KoTDA	Konza	Konza	Expansion	2027-28	+1MW
Safaricom	Limuru	Limuru	In Construction	2025	+2.8MW
iColo	NBO-2	Nairobi	In Construction	2025	+6.5MW
EcoCloud/G42	Naivasha	Naivasha	In Construction	2025	+12MW
Africa Data Centres	NBO-2	Nairobi	Pipeline	2027/28	+5MW
NXTRA/Airtel	NBO 1	Nairobi	Pipeline	2026	+3.5MW
iXAfrica	NBO 1	Nairobi	Pipeline	2026	+20MW
EcoCloud/G42	Naivasha	Naivasha	Pipeline	2028-30	+6MW
Africa Data Centres	ADC - KGL	Kigali	In Construction	1MW	4MW

[1] *Live: capacity is active, under lease or readily available for lease; In construction: facility has broken ground; ongoing civil works, installation and commissioning phases; Pipeline: facilities explicitly announced or listed as in development; some execution phases have been initiated (e.g. land control, energy supply commitments, etc.), but no actual civil works have been undertaken.*

Sources: *Xalam Analytics estimates, provider data*

4. EAST AFRICA COUNTRY ATTRACTIVENESS TO DATA CENTER BUILD

East Africa's mix of enabling regulations, favorable build conditions and government support for cloud adoption have provided a welcoming operating environment for data center construction and operation.

REGULATIONS FOSTERING LOCAL DATA HOSTING

East African regulations are geared to foster localized hosting of data generated in the country. Across the region, most governments have enacted privacy regulations of varying shapes and depth. Data privacy regulations typically require citizens' personal citizen data to be stored in-country; cross-border transfers of data are otherwise generally allowed, subject to specific sector regulations or authorization by an established data regulator.

Likewise, sector-specific hosting regulations are commonplace in industries regarded as strategic, such as the financial services sector, or public sector data. Across East Africa's financial sectors, for example, banks are required to host their servers in local data center facilities.

HIGHLY LIBERALIZED FIBER MARKETS

East African connectivity markets are mostly liberalized, offering excellent diversity across multiple fiber routes. International cable diversity is uneven. Kenya and Tanzania have a diverse set of landing points, while Ethiopia, Uganda and Rwanda are landlocked, which can create some constraints on fiber diversity options.

Overall, however, most markets have relatively open connectivity regimes. By contrast, providers in Ethiopia and (to a lesser extent) Tanzania continue to face relatively constrained fiber diversity, though the broader environment is improving.

A BROADLY FAVORABLE POWER ENVIRONMENT

As most data center facilities source their power primarily from the public grid, the structure of a country's power sector is another key enabling factor for data center operation. East Africa's power environment is broadly favorable to data center build. Most markets have ample power generation capacity, generally upwards of 1GW. In addition, East African market have strong presence from Independent Power Producers (IPPs), expanding data center providers' range of options in sourcing power.

The availability of renewable sources of energy is another factor of attractiveness for data center providers, as they improve a facility's contribution to sustainability and make it more attractive to customers. On this score, the East African region's power mix is renewable-friendly; around 80%+ of power in Kenya, Uganda and Ethiopia is generated from renewable sources. By contrast, only 40%-50% of the electricity mix is renewable-generated in Rwanda and Tanzania, a level that still leaves ample room for sustainable energy provisioning. Further, East Africa offers a broad palette of electricity pricing. Ethiopia offers some of the lowest prices in Africa, while other markets' prices fall at the mid to upper end of the African price range.

DATA CENTER OPERATING ENVIRONMENT IN KEY EAST AFRICAN MARKET – SAMPLE KEY CHARACTERISTICS

	Ethiopia	Kenya	Rwanda	Tanzania	Uganda
ICT and Privacy Regulations					
Local data hosting requirements	Yes	Yes	Yes	Yes	Yes
Internet market liberalization	Partial liberalization	Full liberalization	Full liberalization	Full liberalization	Full liberalization
Power Sector					
Provider ability to source from IPPs* through PPAs	Yes	Yes	Yes	Yes	Yes
Renewable share of the energy generation mix	90%	90%	50%	40%	80%
Cost of power [$/KWh]	$0.03	$0.17	$0.14	$0.08	$0.12
Fiber Infrastructure					
# of submarine cables	0	8	0	3	0
Terrestrial fiber provider diversity	Low	High	Medium	Medium	High

**Independent Producers of power*
Sources: *Xalam Analytics research; regulator and utility data.*

DATA PRIVACY REGULATORY ENVIRONMENT IN SAMPLE EAST AFRICAN MARKETS

Country	State of data privacy regulations
Kenya	• The Kenya Data Protection Act (2019) provides the core framework for data protection and localization in Kenya. The Act was largely modeled after the EU's GDPR. • Cross-border data transfers of personal data are highly restricted. • ICTA guidelines similarly requires for data hosting to be based in Kenya. • Kenyan data centers fall under the jurisdiction of the National Environment Management Authority (NEMA).
Ethiopia	• Personal data Proclamation of 2024; requires companies to host Ethiopian Citizen data within the country. • Strict regulation of cross-border data transfers. • Relatively open approach to data center build, more focused on attracting foreign capital. • Market liberalized in 2019 with the enactment of the Communications Service Proclamation.
Tanzania	• Tanzania has increasingly strict data localization laws. Banks are already required to host their data in local data center facilities. • All Tanzanian companies have been required to host their primary servers in Tanzania since July 2023.
Rwanda	• Sector governed under 2021 Law on Data Privacy and Protection (DPP). • No blanket localization requirement: some data must be stored locally, depending on the circumstances, and upon certification by the National Cyber Security Authority. • Public sector data must be hosted in the government data center, or in facilities meeting standards set by the Rwanda Development Board (RDB).
Uganda	• The Uganda Data Protection and Privacy Act (2019) provides. the core framework for data protection in Uganda. • Data Protection and Privacy Regulations of 2021. • Personal data must be collected, processed and stored within Uganda.

Source: *Xalam Analytics research*

ASSESSING AFRICAN DATA CENTER INVESTMENT RISK

Risks of investing in African data centers and IXPs are varied in nature, including regulatory, economic, commercial and infrastructure.

Political and regulatory risks pertain to the potential absence of stability and visibility in a country's institutions and regulatory frameworks. Risks include frequent, sudden or unpredictable change in government institutions or sector regulations. Institutional or regulatory instability has a direct impact on business operations, through taxation, capital repatriation, corruption risk and other factors that impact the ease of doing business. Regulatory risk also includes changes in the broader data center operating environment, including licensing, environmental regulations and technical standards.

Macro-economic risk includes risks of slow economic growth, inflation and foreign exchange risk. Some markets are highly inflationary environments; in 2024, Around a quarter of African markets had an average annual inflation rate above 10%. Similarly, some markets experience high currency volatility. In 2024, 10 markets saw their currency depreciate by more than 10% against the US dollar. High inflation and currency depreciation have a direct impact on demand potential, headline revenue and investor returns.

Infrastructure risk primarily refers to the ready availability of the enabling infrastructure for data center service provision, specifically power and fiber. The ability to provision ample power capacity at a high rate of reliability and at a manageable price point is a critical consideration for a data center venture. The infrastructure risk also relates to sustainability and the ready availability of renewable sources of energy, a critical consideration for investors and some large customers.

Commercial risk includes factors related to competition intensity, pricing and other drivers of operating demand. A critical commercial risk for data center assets in the African context is the scale and velocity of demand; lower-than-anticipated demand can lead to oversupply, with a direct impact of the scale and timing of investor returns.

Demand potential is a function of the maturity of enterprise cloud usage as well as the country's attractiveness to international networks, content, and Internet infrastructure providers. A market's ability to attract cloud hyperscalers is another essential component of assessing demand potential.

DATA CENTER LOCATIONS, REGULATORY CHALLENGES AND SUSTAINABILITY CONCERNS

Finding the most attractive locations for building data centers and IXPs

Site location criteria are a function of the nature and focus of the data center facility. In general, the following attributes are prioritized in site selection:

- Ready access to a stable, affordable and ideally renewable source of power, in adequate quantities, should a power capacity ramp-up be needed.
- Ready access to diverse connectivity, and the ability to connect to a multiplicity of fiber networks for redundancy and resiliency.
- Easy access to target ecosystems for interconnect and minimizing latency; this includes access to an exchange, as well as the ability to connect to a cloud, network, financial services or other type of ecosystem.
- The location would ideally have natural cooling capabilities or be located in a cooler weather environment.
- Away from a flood zone, or above sea level.

Key regulatory challenges and compliance requirements for operating data centers and IXPs in Africa

The nature of regulatory challenges varies by market. Key recurring challenges include the following:

- Duration and complexity of permitting.
- Challenges pertaining to building a facility in an urban, inhabited area.
- Land zoning and property ownership rights issues.
- The nature of environmental and building codes.
- The extensive use of power in a power-scarcity environment.
- Challenges and elevated cost of importing facility equipment.
- Lack of clarity of data privacy and hosting laws, or absence thereof.
- Industry-specific compliance requirements, e.g. for the public sector, the financial services sector, oil and gas, etc.

Addressing sustainability and energy concerns

Provider strategies vary with operating context; sample approaches observed include:

- Signing PPAs with independent producers of power (ideally using renewable energy) to guarantee an energy source.
- Building facility as close to the point of generation or to a major distribution node as possible.
- Generating own source of renewable energy, on-site or within proximity.
- Significant investment in new cooling strategies to minimize power usage – drive for low power usage effectiveness (PUE).

5. KEY DATA CENTER INDUSTRY PLAYERS

The African data center provider landscape is highly diverse. A broad mix of providers manage data center facilities, including traditional telecommunications operators and ISPs, fiber services providers, IT services companies, carrier-neutral providers and governments.

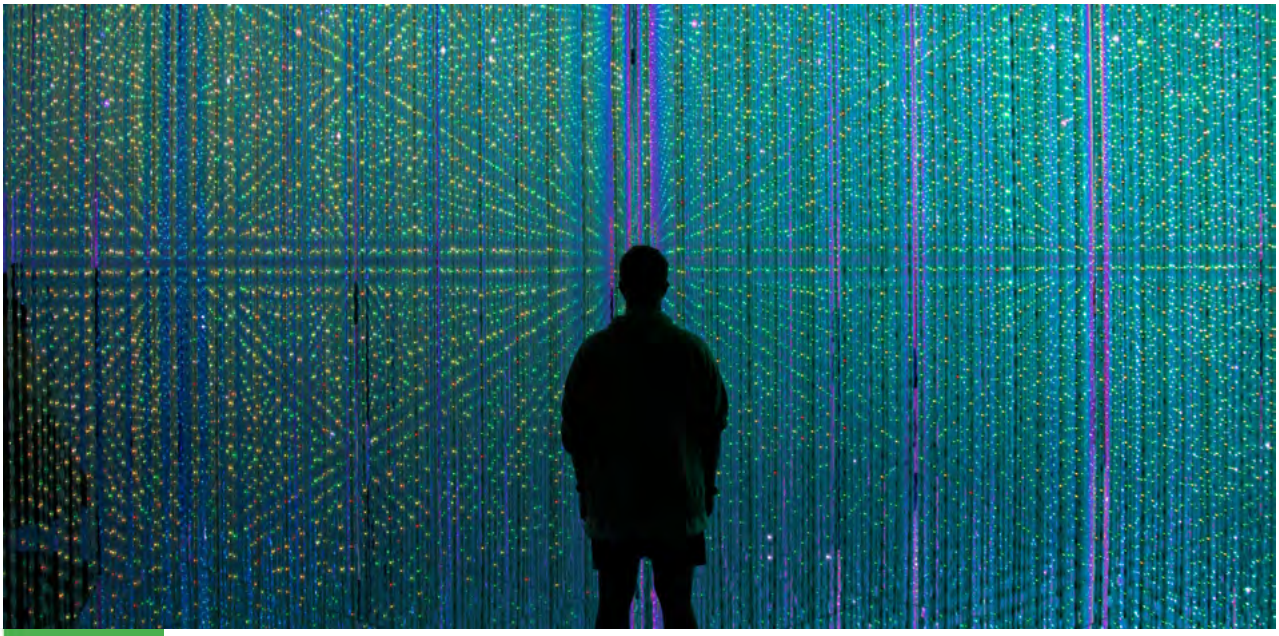
Carrier-neutral facilities are managed by specialist companies not tied to a particular service provider; they provide the user with a broad diversity of options when selecting a connectivity, cloud or other service. Carrier-neutral facilities accounted for around 80% of sub-Saharan Africa's available data center capacity in 2024, up from around 60% in 2021.

Similarly, global data center providers have become key players in the African market, primarily through M&A expansion. At the end of 2024, global providers controlled around 55% of Africa's capacity. Global players are generally focused on Africa's top five markets, with relatively limited presence in others. Key global providers in Africa include Digital Realty, Equinix and Vantage Data Centers. Other global players looking to enter the market include the Emirates' Khazna Data Centers, an affiliate of the G42 group.

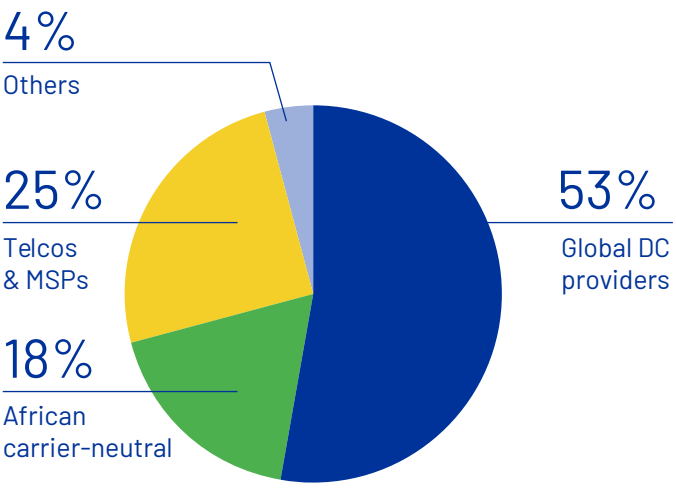
Telcos and IT managed providers are the second largest managers of African data center capacity, with around 25% of the region's capacity. While their share has declined considerably from 2021 levels, it remains strong in key regions and markets, notably in West Africa.

Africa-focused carrier-neutral providers are the third largest cohort, including providers such as Africa Data Centres, PAIX, Raxio or Wingu. They control around 18% of sub-Saharan Africa's capacity. While generally smaller in scale than global providers, pan-African providers are present in more markets. They have been critical in expanding the reach of commercial data centers to Tier 2 and Tier 3 markets, where they control around 30% of available capacity.

Further, government-owned facilities are increasingly active. While the account for less than 2% of aggregate African capacity, their impact is perceptible in select markets where they have made up for slower private facility construction. In markets such as Uganda, Cameroon or Senegal, state-controlled facilities have accounted for more than 20% of available sector capacity.



SUB-SAHARAN AFRICA DATA CENTER LIVE CAPACITY BY PROVIDER TYPE*



** Carrier-neutral facilities are not tied to a particular service provider; they provide the user with a broad diversity of options when selecting a connectivity, cloud or other service.*

Source: *Xalam Analytics estimates*

KEY AFRICA DATA CENTER INDUSTRY PLAYERS

Pan-African providers	Global platforms	Country-focused specialists
Data center specialists – generate scale through multi-country presence	Global players – most have entered the African market through M&A	Data center specialists focused on 1-2 countries – typically Tier 1/ Tier 2 markets
Telcos/MNOs/MSPs	**Government providers**	**Future competition**
Primarily focused on connectivity and IT services; see colocation as adjacent opportunity.	State IT or investment agencies – primarily building to support public sector hosting	More specialist colo providers to launch over the next 2 years – focus on Tier 2 markets

KENYA

The Kenyan commercial data center market is highly competitive. Half a dozen providers offer a full range of colocation services, both to wholesale and retail customers.

Data center specialists dominate the Kenyan market. Around 75% of the country's live critical IT load inventory is managed by carrier-neutral providers such as Africa Data Centres, iColo and iXAfrica, whose facilities are built for the primary purpose of offering colocation services. By contrast, hybrid IT firms and telcos have been relatively marginal actors in this space. Government participation has also been notable, primarily through the development of a facility in the Konza Technopolis special economic zone. Overall, however, capacity is broadly distributed. No provider controls more than a third of Kenya's available supply.

Kenyan competition is expected to intensify as new players deploy fresh capacity, including Ecocloud and Airtel's data center unit, NXtra.

ETHIOPIA – RESHAPING INTO A MORE CARRIER-NEUTRAL MARKET

The Ethiopian commercial data center market is a highly diverse landscape, comprising telcos, IT firms and government-owned facilities. Capacity build is relatively balanced, broadly distributed between carrier-neutral players, telcos and IT providers. Ethio Telecom and Safaricom, the country's two major telcos also manage hybrid facilities. Two carrier-neutral providers, Wingu and Raxio, have launched services over the past two years and are looking to capture market share as more enterprises overhaul their IT setups. A third group of providers include IT firms such as Redfox, who have relatively small facilities and provide a broader range of IT and cloud services.

The ascent of crypto-mining companies has brought in a new breed of provider. Ethiopia now hosts a dozen such crypto miners, all attracted by the country's potent mix of cheap, abundant and mostly clean power. While they remain ostensibly focused on crypto mining, some are starting to straddle the line towards data center colocation.

TANZANIA – A DIVERSE BASE, STILL MOSTLY SUB-SCALE

The Tanzanian data center supply base is diverse, mixing fiber services providers, government and mobile network operator (MNO) facilities. For most providers in Tanzania, the commercial colocation business is secondary to their core connectivity or IT businesses. A facility managed by the state-owned telco, TTCL, has been especially impactful in the absence of carrier-neutral alternatives.

Tanzanian facilities are small; most commercial facilities are sub-scale, smaller than 0.5MW, and typically used as network points of presence (PoPs). Only ~4 facilities can be considered of Tier III standard, built-for purpose facilities. Wingu is Tanzania's largest data center provider based on available critical IT load, with nearly 50% of the market. The company is also the market's only carrier-neutral provider. Another carrier-neutral provider, Raxio, is expected to launch in 2025.

UGANDA – RAXIO, MTN

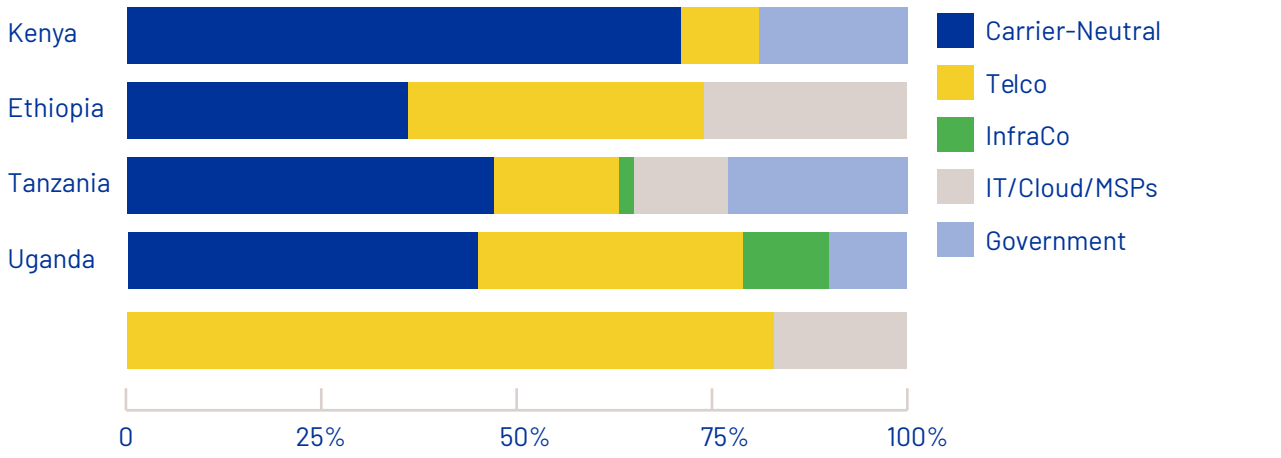
The Ugandan market is moderately competitive. Raxio has the lone carrier-neutral facility in the country – and the largest. Other key providers with built-for purpose facilities include MTN, the country's largest telco, and NITA, the state IT agency. Most other facilities are small, hybrid facilities or server rooms, with fewer than 50 racks.

RWANDA – AWAITING ITS FIRST CARRIER-NEUTRAL TIER III STANDARD FACILITY

The Rwandan data center colocation market is characterized by the presence of small, hybrid facilities (20-80 racks) leasing excess capacity to external customers. There are four categories of players. Telcos like MTN and Airtel with hybrid switching/data center facilities that use their capacity mostly for internal purposes but make some capacity available for third party enterprises through their B2B arms. Telco facilities account for around half of Rwanda's capacity.

Other providers include fiber providers like Liquid Intelligent Technologies and government-owned facilities like AOS. The market's competitive profile is set to change with the expected launch of carrier-neutral providers such as Africa Data Centres and PAIX over the next few years.

MARKET STRUCTURE – PROVIDER SHARE OF LIVE CAPACITY IN EAST AFRICAN MARKETS



Source: *Xalam Analytics estimates*

EU COMPANY PRESENCE IN THE AFRICAN DATA CENTER VALUE CHAIN

EU companies in the African DC Value chain

DC Construction & Infrastructure				Management & Operations			Hosting & Applications	
Design, Engineering & Construction	Land Acquisition, Project Management	Construction & Civil Engineering	Power & Cooling	Operation & Management	Network	IXPs	Hosting	Cloud & Applications
HJL RKD Royal Haskoning Mercury Engineering	ARUP	AFRY Bluesun DC	Schneider Siemens Stulz Globeleq ABB	Orange PAIX Raxio	Orange Vodafone Nokia TI Sparkle AFR-IX	AMS-IX	Orange Vodafone OVH	

Source: *Xalam Analytics research.*

EU companies have had a long-standing presence in key segments of the African data center value chain. Their presence is notable in the network segment. Through Orange and TI Sparkle in particular, EU companies provide key connections between data center facilities in Africa and PoPs around the world. In addition, Orange and Vodafone affiliates are key providers of terrestrial links in a number of African markets.

Likewise, EU companies are key providers in the essential power and cooling equipment markets, with Schneider as one of the market leaders. On the operations front, Netherlands-based PAIX and Raxio have been two of the fastest-growing independent data center providers in Africa.

By contrast, EU company influence in the hosting and cloud segments is relatively limited. While Orange is a key provider in its markets, players such as OVH have a small customer base relative to the competition. Nonetheless, OVH has been building an infrastructure presence in Morocco and may gradually expand its edge cloud infrastructure into sub-Saharan Africa. Likewise, EU companies have a relatively moderate presence in the construction and development space, though EU-based affiliates of global firms are fully active in the region.

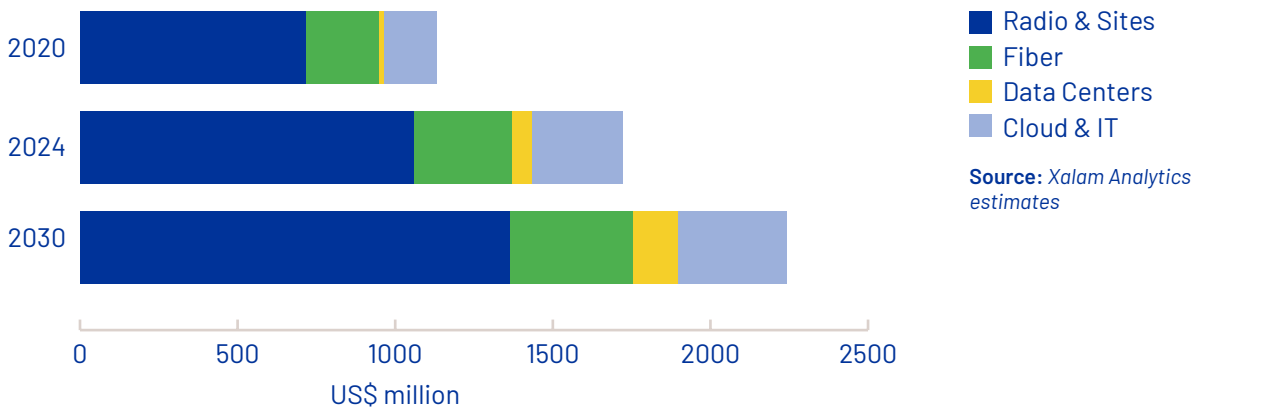
6. CAPITAL REQUIREMENTS, FINANCING & INVESTMENT

EAST AFRICA CAPITAL REQUIREMENTS FOR DIGITAL INFRASTRUCTURE WILL BE SIGNIFICANT

Capital spending on digital infrastructure in East Africa has been considerable. Digital infrastructure capex reached an estimated $1.7bn in 2024, on the back of broadband network expansions, terrestrial and subsea cable rollouts and deployments of the region's largest data center facilities. About two thirds of the investments went to mobile networks to support 4G and 5G network coverage and capacity expansion. Fiber deployments have been the second biggest area of investment, with nearly 20% of capex going to terrestrial and subsea network build. By contrast, investment in data centers has been relatively small, accounting for less than 5% of total capex over the past four years.

A similar capital investment effort will be needed to sustain the region's infrastructure expansion. Estimates by Xalam suggest that the region's providers will need to spend cumulative capex around $10bn-$15bn over the 2025-2030 period, with fiber, data centers and cloud attracting nearly 40% of those requirements.

EAST AFRICA DIGITAL INFRASTRUCTURE CAPEX EVOLUTION – US$ MILLION



Source: *Xalam Analytics estimates*

CLOUD AND DATA CENTER CAPITAL REQUIREMENTS

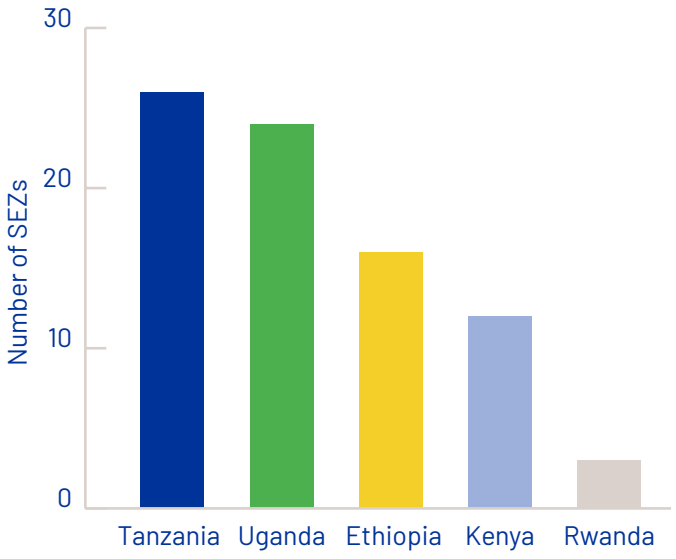
The capital requirements for expanding data center infrastructure are especially notable. An analysis by Xalam Analytics suggests that East African data center providers have deployed cumulative investments worth nearly $200m over the past five years in data center construction projects. To support the projected construction and anticipated deployment pipeline in East Africa, Xalam estimates that the industry would need around $1.2bn in data center capex by the end of the decade (and close to $3bn including cloud and IT solutions).

GOVERNMENT INITIATIVES IN FOSTERING INVESTMENT IN DIGITAL INFRASTRUCTURE

Government participation has been an essential component of making East Africa an attractive destination for investments in digital infrastructure. Most governments in the region have outlined long-term strategic visions anchored by a sturdy, dynamic and inclusive digital economy. And most have been implementing strategic plans to execute on those visions, through the development of digital government initiatives, the enactment of market-friendly regulations, and marshalling investment in digital infrastructure through public-private partnerships.

Another notable feature of government support for the sector has been the development of special economic zones, with a flurry of tax and other incentives to foster technology deployment, employment and skill-building. As of late 2024, East Africa counted around 80 such special economic zones, many of which have become central locations for data center facility build.

NUMBER OF SPECIAL ECONOMIC ZONES IN EAST AFRICA - 2024



Sources: *Country Investment Authorities*

SAMPLE GOVERNMENT INITIATIVES IN DIGITAL INFRASTRUCTURE IN EAST AFRICA

KENYA

- The government of Kenya aims to make the country into a digital hub of technology and innovation.
- Kenya ICT Authority looking to spend $2.4bn as part of a 2024-27 strategic plan to expand access to digital products.
- Kenya government partnership with Microsoft and United Arab Emirates' G42 to construct a $1 billion state of the art, 1GW green data center to power the growth of AI and provision of cloud and data storage services in the region.
- Implementation of the Kenya Digital Economy Acceleration Project (KDEAP), a $390 million World Bank program looking to extend the reach of the backbone infrastructure, extend last mile connectivity for education, enhance government connectivity, etc.
- Digital Superhighway Project, a 2023 plan to increase connectivity through the construction of 100,000 km extension of the fiber optic backbone.
- Kenya Digital Masterplan: part of Kenya Vision 2030, with around $4bn in investments in digital infrastructure, services, digital skills and digital business, covering the 2022-2032 period.
- Development of a free zone and Konza Technopolis, within a special economic zone, with tax benefits and streamlined processes.

ETHIOPIA

- Ethiopia 2030 Vision aims to position the country as a middle-income, diversified economy with strong digital infrastructure.
- Government outlined the Digital Ethiopia 2025 Strategy, a broad plan to leverage digital technologies to foster economic growth, diversify the economy, create jobs and position Ethiopia to become a global player.
- Development of digital national identity card; 2025-2030 E-government and E-commerce strategies are designed to create market hubs for Africa and accelerate digitization of public service delivery.
- Enacted the Special Economic Zone Law to accelerate the development of SEZs across the country.

TANZANIA

- Government developed the Tanzania Digital Economy Strategic Framework 2024-2034, to establish an advanced, "digitally empowered" economy. The Framework calls for transforming the country's enabling infrastructure, including roads, ports and railways, expanding the power infrastructure, and foster investment in hard and soft digital infrastructure.
- Development of the Tanzania Technology Stack, including the deployment of platforms for Digital ID, digital payments and a Tanzania Exchange platform.
- Direct investment in infrastructure build to continue, including China-financed national backbone expansion, to 40 districts and cross-border connectivity to DRC.
- Extensive push of special economic zones; 26 in total; part of a push to support industrialization.

UGANDA

- Digital Government Strategy to transform Uganda into a digitally empowered society by 2027.
- Expansion of the fiber backbone.
- Development of Ughub, a public data exchange platform.

RWANDA

- Digital Acceleration project: the project aims at accelerating country-wide digital transformation, focusing on critical digital enablers. Focus on access to affordable smart devices, digital literacy, last mile connectivity access and building institutional capacity for the broadband market.
- Development of a Smart Rwanda Masterplan 2024-29, with three core pillars – Digital Business, Digital Citizen, and Digital Government.

FDI FLOWS IN EAST AFRICA

A MAJOR FDI DESTINATION

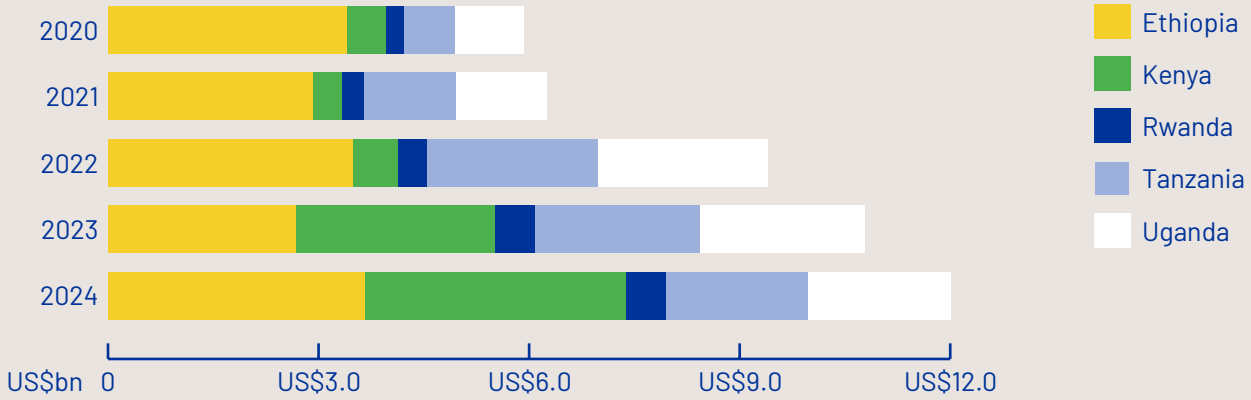
East Africa has long been a major destination of foreign direct investment (FDI) into African markets. Around 20% of SSA's FDI flows into the region. The stream of FDI into East Africa has accelerated over the past three years, growing by an average of around 30% a year, well above the SSA average.

East Africa FDI volumes hit $12bn in 2023, nearly 2x the levels only three years earlier. The spike follows extensive efforts by East African governments to attract private capital, through a battery of measures and incentives, streamlining procedures and gradually liberalizing highly-regulated sectors. Kenya and Ethiopia have been major beneficiaries; the two markets account for nearly 60% of FDI into East Africa. The ICT sector has also been a magnet for FDI inflows, as governments look to enhance access to connectivity and expand their digital economies.

East African economies are attracting investment from a broad mix of country sources. China been the largest provider of FDI in Ethiopia and Tanzania, with other countries sourcing largely from Europe and other African countries.

FOREIGN DIRECT INVESTMENT FLOWS INTO EAST AFRICA

In US$ bn



Sources: *UNCTAD, Central Bank data, Investment Authorities*

TOP SOURCES OF FOREIGN DIRECT INVESTMENT IN EAST AFRICAN MARKETS

	Top sources of FDI
Ethiopia	China
Kenya	UK, Mauritius
Rwanda	Mauritius, Kenya, South Africa
Tanzania	China
Uganda	Netherlands, UK

Sources: *Addis Tribune, Investment Monitor, Bank of Uganda*

7. CONCLUDING REMARKS

African countries face a broad, multi-formed spectrum of challenges in their efforts to leverage digital technologies to diversify their economies and accelerate economic development. The scale of investment is gigantic – upwards of a cumulative $50bn over the next decade in making the region cloud and AI-ready, with the deployment of hundreds of kilometers of fiber links, the densification of 4G, 5G and last mile fiber networks and the doubling of the region's data center capacity to more than 1GW.

Daunting as these requirements may seem, so critical is the imperative that more African countries are initiating the arduous journey through digital transformation. Others will follow, providing a continent-scale testbed for how emerging economies can leverage digital tools to accelerate economic growth.

Government execution will remain critical, from fast-tracking infrastructure development to unshackling connectivity markets, building clean energy foundations, relaxing access to grid and off-grid power and setting a clear regulatory path for data hosting, management and transfer. Similarly, investors will have to adapt, by assessing African opportunities on their own, intrinsic merits, being creative with financing models, and overall taking a patient view in an environment where long term returns seem as compelling as the short term is uncertain.

There is much at stake, including Africa's place in a global future underpinned by compute and clean energy. In a world where widening geopolitical fractures and global trade headwinds are increasingly spilling into efforts to deploy new technologies, this is also, arguably, Africa's most compelling investment opportunity of the next decade, outside of the extractive sector.

D4D HUB

DATA GOVERNANCE IN AFRICA

Global Gateway

Belgium partner in development

Republic of Estonia Ministry of Foreign Affairs

SUOMI FINLAND

Libertè • Egalitè • Fraternitè
RÉPUBLIQUE FRANÇAISE
MINISTÈRE DE L'EUROPE ET DES AFFAIRES ÉTRANGÈRES

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by

Digital Africa

Enabel

EXPERTISE FRANCE
GROUPE AFD

estDev
From the people of Estonia

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

HAUS

Learn more:
https://d4dhub.eu/initiatives/data-governance-in-africa