chapter
Data
centres
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Ayotunde Coker,
chairman of the board, Africa Data Center Association

The African data centre market is being promoted as the next frontier in the globe. The fundamentals of the continent indicate this should be the case for a variety of reasons.

Africa has been relatively well served with subsea cable capacity on the West Atlantic coast to Europe and on the East Pacific coast. To date, a key issue has been broadband and fibre infrastructure from the coastal subsea landing points in land, in particular for landlocked countries. This has been improving significantly given the investments of companies such as WIOCC, Liquid Telecoms, Paratus and CMC.

The recent GSMA sub-Saharan Africa Economy report indicates a significant increase in SIM connections growing from 980 million in 2022 to 1.36 billion in 2030, reflecting a penetration rate of 86% in 2022 to 99% in 2030. Significant is the growth in 4G connections from 22% in 2020 to 49% in 2030 in tandem with dramatic drops in 2G and 3G connections. Although the percentages may look low, the absolute numbers are significant indeed.

Information by Telegeography indicates significant increases in data flows from Africa to Europe with increasing equity between Nigeria, Kenya, and South Africa in data volume flows, and significantly, increasing intra-Africa data flows. Googles Equiano cable on the west coast of Africa is live with more capacity than the aggregate of all cables previously available. This will be complemented by Meta's 2Africa West and East coast cable going live later in 2024. Smartphones are getting more affordable and now typically less than $100.

So, the demand drivers and growth indicators are substantial and have become more pervasive across the continent, with significant absolute numbers. For data centre capacity to grow, the right scale, architecture and quality of data centres must be available. According to Xalam Analytics, South Africa has been leading the way with over 50% of the Africa installed base in South Africa. Over 200MW of installed capacity by companies such as Teraco and Vantage. New entrants include Open Access Data Centres with its core to edge strategy with over 30 data centres across the country. New capacity growth has been announced by Teraco, OADC, ADC and Vantage with expandable capacity progressing beyond 300MW. The availability of the right architecture

and scale creates a virtuous circle of growth.

Other Tier 1 locations are emerging in Nairobi Kenya, and Lagos Nigeria. IX-Africa has announced the launch of its hyperscale data centre in Nairobi. Other multiple launches are occurring in Lagos with OADC where the Equiano cable lands announcing growth to 24MW, Rack Centre building 12MW hyperscale and DRT indicating the build of further 12 MW and Kasi Cloud 4MW with growth potential. In the next 12 months, a hyperscale architecture data centre will be launching every quarter for the next few years. Tier II markets include Kinshasa with OADC launching imminently and Raxio announcing its intent. Multi-country providers are emerging with Raxio, Wingu and Paratus building across Tier II markets. Africa Data Centres has announced growth in multiple countries.

Other growth drivers include the growth of cloud and the natural buying pattern in Africa. The pay as you use model has propelled the growth of GSM adoption. The Africa 'sachet' economy where people buy in small quantities as needed and pay as used lends itself to the growth of cloud with the primary delivery and consumption channel being the mobile phone. The emergence of capacity demand for AI in Europe where power availability for data centres is limited will cause a capacity substitution to Africa hyperscale data centres.

The growth of broadband penetration, in tandem with GSM 4G/5G growth and hyperscale growth in Tier 1 locations will spurn the consequential growth in Tier II countries and should result in significant economic and social impact and positively impacting multiple SDGs. WIOCC Group, the owner of OADC Converged Open Digital Infrastructure value proposition and core to edge strategy plays to driving this grow and social impact. Challenges such as access to power, skills and capital for expansion are typical industry challenges to be overcome, and with the growth potential will occur in time. Indeed, most countries in Africa have access to green hydro and gas power and new hyperscale data centre technologies will cause a leap in energy efficiency over the established and older facilities in Europe. ◼

Boniface Abudho,
research analyst ,
Knight Frank

Stephen Beard,
head of data centres,
Knight Frank

The African opportunity

In many parts of the world, extensive urbanisation has already taken place, and Africa is at the cusp of starting this journey.

Cities like Cairo, Lagos, Luanda, Dar es Salaam, Nairobi, and Addis Ababa are together home to over 65 million people. By 2030, the combined population of these African activity hives will expand to 100 million, according to United Nations estimates.

Overall, sub-Saharan Africa's population is growing at a rate of 2.7% per annum (p.a.), more than twice as fast as South Asia (1.2%) and Latin America (0.9%) (World Economic Forum). Indeed, according to the Word Bank, by 2050, Africa's population is forecast to rise to 2.4 billion and will continue to grow to 4.2 billion in the next

100 years, four times its current size.

The projected population boom is set to unleash a wealth of real estate investment opportunities as Africa's mega-cities enter their next phase of growth.

Multi-dimensional partnerships key to unlocking investment

A significant hurdle to overcome will be securing funding to drive the expansion of Africa's cities.

The continent faces significant challenges in attracting private-sector investments. Long-standing investment barriers include political instability, corruption, and inadequate road and energy infrastructure. However, there are also numerous opportunities for investment, particularly in data centres, agriculture, and manufacturing.

In our view, multi-dimensional partnerships can play a significant role in addressing some of the challenges faced by investors eyeing opportunities on the continent, particularly those with little or no experience in Africa. Public-private partnerships are a case in point, exemplifying collaborations that embrace diverse areas of interest, including financial, operational, technological, social, and environmental. Their overarching objective is to foster a mutually advantageous alliance aiming to address a wide range of issues or challenges.

Consequently, public-private partnerships have the potential to yield positive outcomes for local communities, such as augmenting employment opportunities and developing critical infrastructure. Dubai's DP World, for instance, strives for partnerships that enhance employment, local infrastructure, and national GDP. One such example is the new Road Transport Centre for delivery trucks in Kigali, Rwanda, which has reduced waiting times for land transport from weeks to days. It has also lowered storage costs, helping to position Kigali as a significant logistics hub in East Africa and facilitating connections between regional businesses and global markets. Over the last 10 years, DP World has invested over US$1.8 billion in Africa and plans to invest a further US$3 billion over the coming years.

Data centres: the new asset class of choice

With the rise in online retailing, catalysed largely by the pandemic and the subsequent boom in demand for storage, distribution and last-mile logistics facilities, requirements for data centres too have flourished across the continent.

Data centres provide a cheaper and more efficient IT capability than inbuilt servers, which is aiding their popularity. They also offer cloud services and allow organisations to focus on their core functions.

Investors have already recognised the growing demand for additional data centres in Africa. Investment into the market is projected to have a compound annual growth rate (CAGR) of approximately 15% from 2020-2026. In 2020, the data centre market size in terms of investment was valued at US$2 billion, and it is anticipated to reach US$5 billion by 2026 (Source: Africa Data Centres).

Earlier in 2023, global real estate industrial and logistics developer, Agility Logistics Park (ALP), launched masterplans for four new data centre campuses in Egypt, Ghana, Saudi Arabia, and Kuwait, one of the largest investments to date. The completion of these campuses will contribute a total of approximately 275,000 sqm of cutting-edge data centre capacity to ALP's existing infrastructure in the Middle East and Africa. In addition, ALP also announced plans to open more data centres in other rapidly growing

markets, including Nairobi, Casablanca, and Lagos. Currently, the industrial developer has a presence in the Middle East, South Asia, and Africa, with a total of approximately 140,000 sqm of warehousing facilities and 12 million sqm of industrial land spread across twelve countries.

Across Africa, there is also increasing demand for high-quality data centres that are both ESG-compliant and cost-effective.

Investor interest

Unsurprisingly, Africa's data centre market is also attracting interest from institutional investors.

Over the last twelve months, multiple transactions have been registered across the continent, including the $3.5 billion acquisition of Terraco by Digital Realty. The acquisition follows Digital Realty's acquisition of iColo, a leading Kenyan-based platform with facilities in Nairobi and Mombasa (a central subsea cable Africa access point).

Equinix entered the Africa market by acquiring MainOne data centres, which has a presence in Ghana, Côte d'Ivoire, and Nigeria, for $320 million. In addition, NTT and Vantage Data Centres have together committed in excess of US$500 million to new data centres in Johannesburg and its environs. Africa Data Centres, Raxio, PAIX, and other pan-African players also continue to enter new markets, including the Democratic Republic of Congo (DRC), Congo, Ghana, and Côte d'Ivoire. WINGU also continues to make great strides through the Horn of Africa in countries such as Somaliland. It's a market that is often regarded as challenging. These operators typically lead with c.2- 5MW developments, allowing them to illustrate proof of concept in anticipation of further foreign investment.

Chinese 'cloud players' are also increasingly active in the market, targeting South Africa as a gateway to the continent. China Mobile and Alibaba, for instance, are both already operational here.

South Africa, and specifically Johannesburg, has dominated the African data centre landscape for many years due to its geographical location, the abundance of sub-sea cable landing stations (connecting Africa to the rest of the world), political stability, mature enterprise, and corporate markets. However, other hubs are emerging:

Nigeria: Demand from the financial services sector is underpinning and driving expansion of data centre capacity. Several local and pan-Africa data centre operators have and continue to announce new projects, such as the recently unveiled Tier IV Data Centre, designed and built to support private businesses and public sector organisations. The new digital infrastructure in Kano will serve as a first-level backup to the Tier III data centre in Abuja.

Egypt: In North Africa, a number of mature Middle East-based colocation platforms, such as Khazna and GDH, are gearing up to enter Cairo. The significant undersupply here - just c.20MW serving in excess of 22 million people, is a clear draw. Historically the Egyptian market has been challenging to enter, given the monopoly held by the incumbent telecoms company, Telecom Egypt.

Kenya: Nairobi still attracts significant investor attention, and we anticipate fresh development announcements by new colocation operator entrants to the market. However, the government or other significant public sector bodies are yet to declare any intention to migrate IT infrastructure onto the public cloud (Google, AWS & Microsoft), which is ultimately the catalyst for data centre growth. Separately, Kenya's access to renewable transmission power, which represents at least 80% of total power production, is another

significant pull factor. With environmental, social and governance considerations (ESG) at the forefront of stakeholders' minds, Kenya's focus on sustainability should safeguard its position as Africa's next hyperscale market.

Morocco: Our team is working with two international data centre operators on land acquisition projects in Casablanca, where the proximity to continental Europe and the presence of an open terrestrial fibre market offers significant benefits to both the developers and end users. Unlike other parts of Africa, Morocco's economy and general GDP have performed relatively well in recent years. Furthermore, the underlying power infrastructure is reliable, unlike many other locations in Africa. The next twelve months look extremely promising for the African data centre landscape as the social, political, and economic landscapes mature. We anticipate that 2023/24 will see more M&A activity, led predominately by the US data centre Opco, with all stakeholders seeking viable (power, fibre, and permit potential) brownfield and greenfield development sites throughout the continent.

Kenya: Kenya's data centre capability is expanding at a rapid pace, with projected growth from US$190 million in 2021 to US$434 million by 2027, representing nearly a 15% increase (Kenya Data Centre Report). Inland connectivity is also improving, and the country has made strides in deploying a 5G network. However, high land prices have been a challenge for some investors. Nairobi is the primary location for data centres due to its strategic position as the country's capital city.

Mobile banking and electronic financial services have been significant drivers for the country's data centre market, with Safaricom's M-Pesa emerging as one of the primary catalysts for the increase in requirements. Furthermore, the growth of fintech companies and partnerships between banks and mobile network operators has also underpinned demand for data storage facilities.

The Kenyan government is quickly moving to nurture the data centre sector and has plans to increase infrastructure growth and improve nationwide internet connectivity by laying 100,000km of fibre optic cable by 2027. Additionally, 1,450 digital hubs and 25,000 free hotspots will be established to boost e-commerce. This will undoubtedly create more opportunities for data centre operators and other digital service providers to expand their services.

Election uncertainties

The outcome of any African election can often have significant implications for the real estate sector. With 13 countries scheduled to hold the head of state (presidential or prime ministerial) or national legislature elections in 2024, a lot is at stake.

Any political instability has a direct and almost immediate impact. A decline in foreign investments, falling values, and lower transaction volumes often ensue, as has been the case in the Democratic Republic of Congo (DRC).

Conversely, newly elected governments can also be positive for the property industry. New policies stimulating the real estate sector to attract foreign investors have become a hallmark of some of the continent's new leaders. Zambia is an example. The country's recently elected administration has garnered significant attention from international investors with its economic policies, stable political infrastructure, and robust currency that has bolstered business confidence. According to International Monetary Fund (IMF) data, the Zambian kwacha witnessed an impressive appreciation of 33% over the 12 months to June 2022. ◼

Moritz Breickmann, investment director at African Infrastructure Investment Managers (a version of this article first appeared on IJGlobal)

Africa is amid a rapid digital transformation, creating attractive opportunities for investors looking to generate significant economic returns and investment impact.

New ways of doing business digitally, a rapid acceleration in mobile data consumption, and a booming tech sector across the continent's major industrial hubs is putting strain on Africa's digital infrastructure. Data centres, fibre-optic broadband expansion, and telecom towers are set to become the new backbone of Africa's economic growth.

More businesses and households are connecting to the internet for the first time, and the continent is experiencing the fastest increase in internet penetration worldwide. Mobile data consumption across Africa is expected to increase by 40% annually until 2025. This is nearly double the global average growth rate.

Meeting this new demand is an opportunity for the continent to leapfrog outmoded technologies like the copper cables still spanning many developed countries and create a new generation of high-tech African jobs.

Growth in data generation and demand

Africa's data demand boom is partly fuelled by an increase in connections and partly by the way we use the internet. Urbanisation and population growth paired with a continuous expansion of 3G, 4G and – more recently – 5G networks allows more and more Africans to connect to the internet.

African consumer behaviour already mirrors a global move towards people spending more of their lives online; connected South Africans are now the world's most online people, and Nigerians and Kenyans are among the top five nations for time spent using social media. The smartphone is how most Africans connect to the internet.
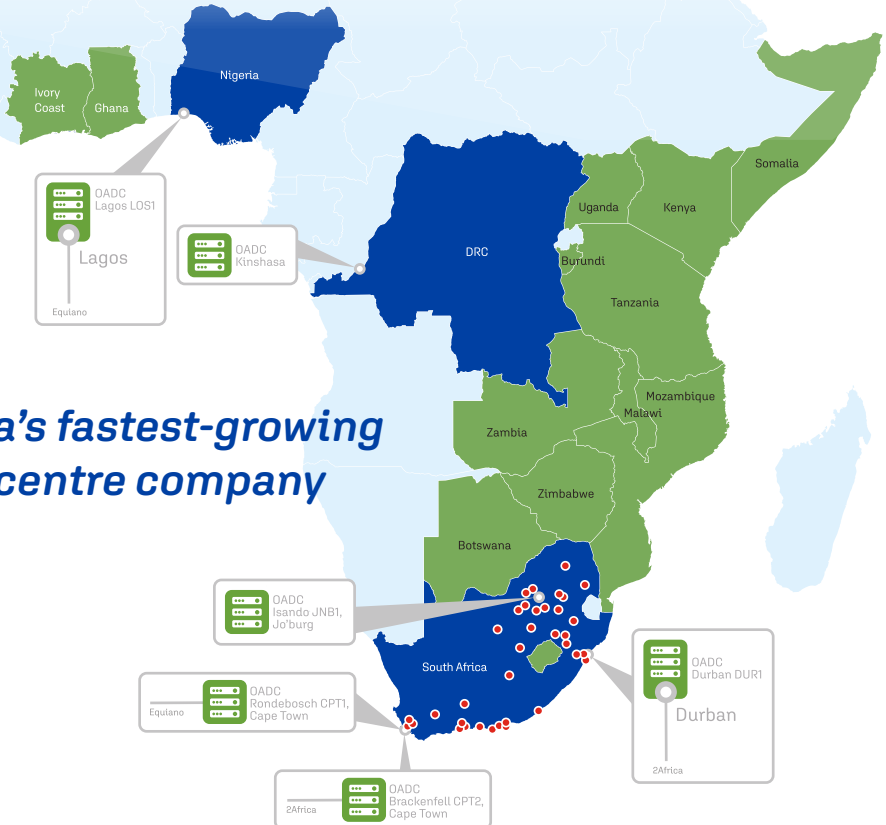
At the same time, sub-Saharan Africa's 64% smartphone adoption rate in 2021 was the lowest of any global region. It is expected that by 2025 the rate for sub-Saharan Africa will increase to 75% while other global regions will be above 80%. This suggests there is still tremendous potential for growth in internet usage. But the expected growth in data transfer and storage is also driven by the way the internet is accessed and used across the continent.

As mobile customers shift from GSM to 3G and 4G and from feature phones to smart phones, there is an exponential increase in data traffic. For example, a low-resolution picture takes up about 0.3Mb, whereas a video will take up a staggering 10-50Mb per minute, depending on the resolution.

Beyond personal usage, digital-enabled businesses and corporations drive data generation and consumption in Africa. 2021 was record-breaking for Africa's technology sector, with more tech start-ups completing $100 million investment rounds than ever before.

Digital technologies are also transforming every sector of the economy, from manufacturing and sales to communications and talent management. According to the World Economic Forum, 60% of global GDP is expected to be digitised by 2022. Digitisation has become not just an enabler, but a necessity for economic activity. And just like for personal usage, change in technology is a key driver for data growth. For

Open Access
DATA CENTRES

Ivory Coast
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Nigeria

OADC
Lagos LOS1
Lagos
Equiano

OADC
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DRC

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- Current Data Centres
- Other target countries
- • OADC EDGE DCs

Transforming digital Africa

example, video conferencing, cloud computing, data mining and artificial intelligence, as well as the Internet of Things (IoT), are all producing and using vast amounts of data.

Identifying infra gap/opportunity for data centres

Despite the importance of a growing digital economy to Africa's growth aspirations, there is still a lack of digital infrastructure across the continent. Investment in new submarine fibre-optic cables continues to boost intra-continental connectivity, but further investment is needed to extend this connectivity inland.

Broadband cellular network technology – from 3G to 5G – is expected to connect most of Africa's devices to the internet, but this technology requires telecommunication and data centre infrastructure to operate.

The potential rewards for providing the infrastructure necessary to enable the continued growth of the digital economy are substantial. The IFC has identified that increased online activity will add an extra $180 billion to Africa's economy by 2025.

The vast amount of data produced and consumed on the continent will support data centre investments in the region. Consumers expect – and modern applications require – faster connectivity, greater stability, and lower latency. These trends, paired with new data sovereignty laws and higher security requirements, will further promote the onshoring of data.

There is 250MW of installed data centre capacity across Africa, forcing people to rely on data centres thousands of miles away, in South Africa or outside Africa. Demand for data centres across Africa is expected to exceed supply by 300% in the coming years. A rapid increase in capacity to 1,200MW by 2030 is

needed to support the growth potential of the continent's digital economy.

Recent acquisitions of African data centre providers by the world's major data centre operators show that this attractive investment opportunity is recognised beyond the continent's borders. But despite these significant investments, with a market experiencing an annual compound growth rate of 12%, ample opportunities remain across Africa to develop and expand data centre capacity.

A digital, impact-driven investment approach

New data centre infrastructure should be state-of-the-art, high-capacity, power-efficient and climate-resilient. Aspects like design, efficiency and energy sources should be top priorities for investors to consider when planning a digital infrastructure investment strategy capable of capitalising on Africa's emerging digital economy.

Greenfield locations and expansions across sub-Saharan Africa provide significant opportunities for returns on data centre projects. Strategies that focus on building platforms to foster organic growth and that pursue economies of scale, thereby offering competitive solutions for customers, also align strongly with impact investment models.

Impact-driven strategies also have the added benefit of supporting the UN's Sustainable Development Goals, particularly economic growth, and climate action.

By supporting the development of critical digital infrastructure, including data centres, there is an opportunity for investors to encourage job creation and new growth opportunities across the continent while achieving attractive investment returns. ■

Africa's data centre estate

An exert from Mordor Intelligence's Africa data centre market size & share analysis – growth trends & forecasts up to 2029

The Africa data centre market is fairly consolidated, with the top five companies occupying 67.54%. The major players in this market are Africa Data Centres (Cassava Technologies), Open Access, Rack Centre Limited, Teraco Data Environments (Digital Realty) and WIOCC's OADC.

The market is projected to register a compound annual growth rate (CAGR) of 15.41% over 2023-2029. IT load capacity will have steady growth and is expected to reach 1,226.8MW by 2029. The total raised floor area of the country is expected to increase to 5.2 million sq. ft by 2029. The number of installed racks is expected to reach 260,783 units by 2029. South Africa is expected to house the maximum number of racks.

There are 37 colocation data centre facilities in Africa. South Africa holds the highest share in the region. Growing connectivity, increasing demand for cloud services, and rising government incentives for land and tax are a few factors that have accelerated the growth of data centre facilities in Africa.

Teraco Data Environment led the market in 2022, with a share of 35.65% and an operational capacity of 150MW. The company has announced plans to launch a 30MW hyperscale facility in Ekurhuleni, South Africa, east of Johannesburg.

Tier 3 leads the way

According to our research experts, Tier 3 is the largest Tier type of data centre on the continent.

Increasing developments in artificial intelligence (AI), IoT, and blockchain technology across varying sectors, including telecom, cloud, and government, have contributed to the growing data consumption in Africa.

Africa has more than 400 technology hubs across 93 cities in 42 countries. In 2022, the African start-ups raised about US$4.8 billion through 1,000 deals, compared to about US$4.33 billion raised across 820 rounds in 2021. These technology start-ups may require low latency and high-speed, uninterrupted internet and cloud facilities to ensure continuous customer service. The increasing demand for better infrastructure may fuel the demand for more IT load capacity and more Tier 3 and 4-certified

Africa Data Center Market, CAGR, %, By Country, 2023 - 2029
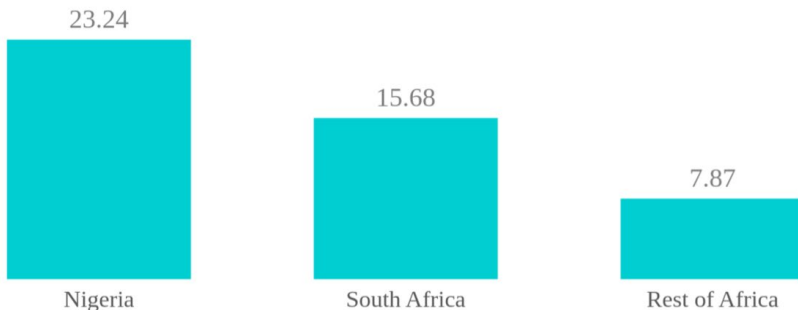
Source : Mordor Intelligence

data centre facilities.

The long-term growth vision is better suited to set up at least Tier 3-certified data centres to cover the initial high cost of establishing the facilities. However, Tier 1 & 2 facilities were losing traction, given the limited power availability. Hence, to ensure the longevity of investments and tackle the increasing demand for faster and more reliable data storage and processing facilities, companies are focusing on constructing Tier 3 and 4 facilities.

Tier 4 data centres offer higher bandwidth speed, low latency, better connectivity, and disaster recovery options. Thus, during the forecast period, the Tier 4 segment is expected to record a CAGR of 18.02%, compared to the Tier 3 segment at 14.40% and the Tier 1 & 2 segment at 3.26%.

South Africa is the largest Country

South Africa is the most prominent country for data centres in Africa since the country comprises about 42 million internet users. It also has internet penetration rates closer to 70%, and its adaptation to e-commerce and other demand-generating aspects is growing. This, in turn, has led data centre operators to set up their data centre facilities in the region to leverage the increasing demand for the facilities.

South Africa held a market share of around 63.1%, followed by the rest of African countries at 24.4%, and Nigeria accounted for 12.4% in 2021. The company that has strengthened its market share in South Africa is Teraco Data Environments (acquired by Digital Realty), which currently has a market share of 36.72% and operates at an IT load capacity of 150MW. Through its subsidiaries, Medallion Communication Ltd and Teraco Data Environments, companies such as Digital Realty have announced plans to develop mega and massive data centres with IT load capacities of 160MW and 110MW during the forecast period.

Cape Town has been ranked among the top smart cities worldwide for its IoT and real-time data analysis through sensor implementation. Smart cities create huge amounts of data owing to the varying smart services imparted to the citizens. The country is expected to witness more such smart cities as operators plan to extend the deployment of IoT-based devices. The rest of Africa also comprises smart cities like Kigali, Rwanda, which have sensors to measure air quality, monitor the power grid's safety, and detect water leakages. Due to all the above factors, the South African data centre market is expected to grow and register a CAGR of 15.68% over the forecast period. ∎

Africa Data Center Market, CAGR, %, By Tier Type, 2023 - 2029
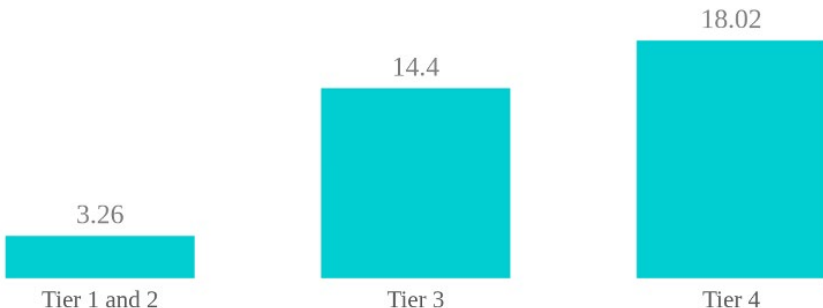
Source : Mordor Intelligence

6 HARMONICS

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Wojtek Piorko,
managing director Africa, Vertiv

As a global provider of critical digital infrastructure and continuity solutions, Vertiv is increasing its presence across the African continent with a particular focus on the connection and protection of networks with core-to-edge solutions. In the Europe, Middle East and Africa (EMEA) region, there are 10 manufacturing and assembly locations, more than 65 service centres, around 650 service field engineers, more than 100 technical support and response resources, and five customer experience centres.

With our new 'Africa for Africa' project, we're strengthening our position even further. The initiative is aimed at addressing our local clients' needs and we're doing this by creating a new internal structure that focuses strongly on leveraging local skills and knowledge within our team. I see exciting times ahead for Vertiv in Africa, as we now have more independence and focus within the company's EMEA regional division. We have been gearing up for growth this past year and will continue to do so moving forward.

General telecoms trends seen across the continent include ongoing digitalisation, the need to reduce carbon footprint, and the decentralisation of networks. The telecommunications industry across Africa occupies a complex yet active space, with significant investment in subsea connectivity cables, increasing demand for data centres, and the rollout of terrestrial fibre broadband infrastructure gaining increasing prominence.

Challenges include high costs of connectivity in some countries, together with the average speed of available internet; as well as limited access within rural areas, and general infrastructure issues. Other complications include potential issues around currencies, including availabilities, exchange rates and devaluations, as well as pockets of political instability in certain regions. Local skills shortages can also present challenges with regards to projects. The cost of implementing 5G networks and de-commissioning 3G and 4G networks comes under the spotlight, as does the need to be efficient with energy and water sustainability requirements.

Trends in Africa today include issues such as efficiency/sustainability; increasing demand for complete solutions that are easy to implement; and increasing demand for the provision of micro and small data centres.

There are several principal expectations from almost all customers in Africa, with the following topping the list: understanding the local environment and specific customer needs; providing quality technical advice across the whole timeline of the project; and delivering reliable after-sales support.

Currency devaluation, limited availability, unpredictable challenges related to lead times, and a shortage of local skills can impact on each project. Africa is a particularly dynamic region, with huge growth potential; however, there are areas where the region is more unstable than other parts of the globe. ■

Looking ahead: Business in Nigeria, South Africa and Kenya will continue to dominate Vertiv's activity within the continent, but noting that we regard northern Africa as being a 'sleeping giant.' Here I am referring specifically to possibilities within Morocco regarding hybrid, renewable or alternative energy solutions, as well as in Egypt and Libya, where we see opportunities for governmental investments as well as foreign investment from existing multi-nationals situated in those countries.

At the same time, the DRC offers opportunities for many telco- and digitalisation-based projects. Long-term internal reforms in some of the main players such as South Africa and Nigeria will continue to bring positive regulatory change.

Dr Ayotunde Coker,
CEO, Open Access Data Centres

This year has been excellent - both challenging and rewarding, among sometimes trying conditions.

We have worked hard to develop the OADC brand and much progress has been made to date. We have changed the narrative in the market with our Converged Open Digital Infrastructure value proposition and the innovative core to EDGE strategy, right sizing data centres from our core DC, right-sized data centres for the locations we operate in, and distributed EDGE data centres to the point of use. We've been very busy.

The Equiano cable landed into the OADC Lagos facility in Nigeria went live in 2023; meanwhile, the Meta-backed 2Africa East

> "If there was a single technology that could drive the African market in 2024-2025, I would say that it would be cloud and content. Consumption in Africa is what I call the 'sachet economy:' people and small businesses earn today to consume tomorrow in sachet quantities, and cloud is a way to consume technology with this model."

> "We currently have only 1% of global data centre capacity in Africa, but with 17% of the global population and the rising mobile smartphone penetration, the opportunities for growth on the continent are extremely significant."

cable was landed into our OADC Durban site in Amanzimtoti, South Africa, in early 2023.

The challenges we've experienced this year have included building a range of data centres in parallel, in multiple countries, and launching and growing the OADC brand rapidly to strengthen our position.

The opportunities on the African continent are vast. We have been redefining the narrative of open access connectivity in tandem with an open access carrier neutral data centre company to create our Converged Open digital Infrastructure proposition to meet the opportunities available.

Africa is at the cusp of significant data centre expansion in order to deliver fibre penetration underpinned by data centre infrastructure. We currently have only 1% of global data centre capacity in Africa, but with 17% of the global population and the rising mobile smartphone penetration, the opportunities for growth on the continent are extremely significant.

Much is happening at the point of use, be it the phone, tablet, or PC, with social media and other business applications. This is growing and the remarkable expansion in

"The innovation and success of pay-as-you-use with mobile telephony has shown its potential for a continent where the mobile device is dominant for access to content."

content throughput in the largest Internet Exchanges in Johannesburg and Lagos is just one of the indicators that we're seeing.

Broadband penetration and adoption, access to content and a whole wide range of services such as Facebook, Tik Tok, Fintech, are all growing in popularity and driving data consumption. Given the scale of Africa, latency is an issue that must be overcome by hosting content closer to the point of use.

If there was a single technology that could drive the African market in 2024-2025, I would say that it would be cloud and content. Consumption in Africa is what I call the 'sachet economy:' people and small businesses earn today to consume tomorrow in sachet quantities, and cloud is a way to consume technology with this model.∎

Looking ahead: What else should we watch out for going forwards? The innovation and success of pay-as-you-use with mobile telephony has shown its potential for a continent where the mobile device is dominant for access to content.

The emergence and proliferation of generative AI in Europe will demand more data centre capacity, which is scarce due to power and planning constraints in Europe. I see capacity substitution occurring and Africa content and cloud compute, currently in Europe, will be transferred to Africa as the hyperscale facilities are brought on stream, in particular Lagos and Nairobi. This is now happening with the emergence of OADC in Lagos and IX-Africa in Nairobi.

Nigeria and Kenya will be the most vibrant countries for wireless communications over the course of the next year. Given the scale of subsea cables connected to Nigeria, the scale of the population and economy, I expect the trajectory of growth in the Lagos locale to rise significantly and the emergence of a range of hyperscale data centres will enable that growth.

My assertion and projection is that Lagos will have as much expandable capacity as Johannesburg in the next three years.

The implementation of Cypherwave at our Isando core data centre campus is our standout success story from 2023. That was an excellent anchor client kick start to the facility, and we have a great and growing strategic relationship with Cypherwave.

Data centres continue to be regulated - as any business would - for required standards of business governance and due diligence. Globally, typically data centres are not uniquely regulated beyond normal business regulation.

Cross border cooperation has been dynamic this year, and there is competitive cooperation in the industry. The success and growth of the Africa Data Centres Association is a testament to this, where competitors and key industry actors come together to build holistic industry across Africa, for the benefit of all.

We expect continued growth in the key anchor Tier 1 countries; Egypt, Kenya, Morocco, Nigeria and South Africa. Other Tier 2 countries, such as DR Congo, Ethiopia, Ghana, Ivory Coast and Zambia, will emerge, with increasing growth of Internet Exchange platforms in those markets.

W I O C C

Africa's Digital Backbone
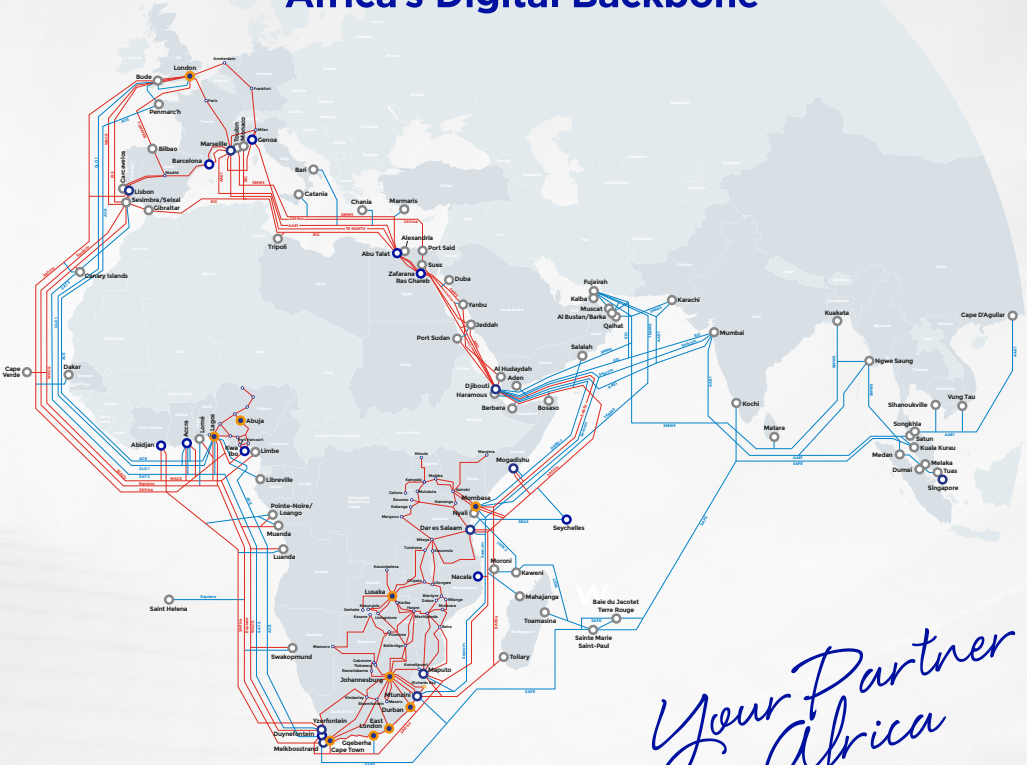
Your Partner in Africa

Africa's Carriers' Carrier

Delivering the digital backbones for leading cloud operators, carriers, ISPs and MNOs across Africa.

Connecting in excess of 1,000 locations in 30 countries in Africa and many more across the rest of the world.

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Robert Mullins,
CEO, Raxio Group

Over the past year, Raxio Data Centres in Africa has experienced substantial growth and success. We take pride in maintaining an uninterrupted 100% uptime in our facility in Uganda, demonstrating our unwavering commitment to delivering reliable and uninterrupted data centre services.

Additionally, we've achieved a significant milestone by successfully getting to the end of the construction process of our state-of-the-art data centre facility in Ethiopia, a strategic market for us. We've also made substantial progress in constructing facilities in Mozambique, Ivory Coast, and the Democratic Republic of Congo (DRC), setting the stage for our continued expansion across the continent. Furthermore, we've broken ground on a new data centre facility in Angola, marking our entry into this promising market and further solidifying our position as a leading data centre provider in Africa.

In line with our growth ambitions, we have raised a debt facility of up to $170 million, a testament to our investors' confidence in our vision and capabilities. This capital infusion will play a pivotal role in fuelling our expansion initiatives and the rollout of cutting-edge data centres in key African markets.

Our growing customer base reflects the increasing recognition of the value of our secure and reliable infrastructure solutions across various industries. Additionally, we've invested in the development of our team, fostering a culture of excellence and innovation that drives our continued success.

The African continent offers significant opportunities, including growing demand for cloud services in both enterprise and public sectors, catering to the evolving needs of mobile network operators (MNOs) for latency-sensitive applications, and contributing to the development of digital hubs in countries with world-class data centres. This positions Raxio Data Centres as a crucial player in Africa's digital transformation, fostering innovation, job creation, and investment.

However, challenges do exist, primarily stemming from the diverse regulatory frameworks across African markets. Adhering to various rules and regulations necessitates a tailored approach in each country, demanding time and resources. Additionally, the reach of connectivity across markets remains a substantial challenge, requiring collaboration with telecommunications providers and governments to improve overall infrastructure. Despite these challenges, Raxio Data Centres remains committed to leveraging the opportunities presented by Africa's evolving digital landscape while addressing regulatory complexities and connectivity limitations to provide secure and reliable data centre solutions across the continent.

In the evolving technology landscape, three key trends have emerged: a growing migration to the cloud for scalable and cost-effective

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infrastructure; a surge in digital content consumption necessitating localised data delivery; and a decreasing cost of connectivity enabling broader digital participation. These trends underline the vital role of data centres. They serve as the backbone for cloud computing, accommodating the remote hosting of data and applications, while also acting as the linchpin of content delivery networks to reduce latency. Furthermore, as connectivity becomes more accessible, data centres are essential for businesses and individuals to harness the benefits of digital services, making them a fundamental cornerstone in our increasingly interconnected world.

Agility, local expertise and deep understanding of the market dynamics are critical for success in Africa. The African market is distinct in its rapid technological leapfrogging and its vast untapped potential. However, each country within Africa comes with unique requirements, such as the need to adapt our solutions to varying levels of (power, connectivity, and road) infrastructure maturity across regions.

One user success story that stands out for us from 2023 is our collaboration with a leading financial services institution in Uganda. By providing them with scalable and secure data centre services, we played a pivotal role in improving the uptime of their digital systems and reducing the overall cost associated with managing their infrastructure in-house. As a result, they were able to improve customer satisfaction by providing a higher quality of service to their customers and redirect capital towards their core business.

Regulatory environments have generally evolved positively in 2023 to accommodate the growing digital economy. Many countries are proactively implementing measures to support data centre development, streamline licensing processes, and enhance data protection regulations, which bodes well for our industry's growth.

Cross-border cooperation in 2023 has been promising, particularly within the West Africa Economic and Monetary Union (UEMOA) with increasing collaboration among neighbouring countries to enhance data connectivity and infrastructure. We expect this trend to continue and strengthen in 2024 and 2025 as African nations recognize the benefits of regional data integration and cooperation. ■

Looking ahead: Our vision for Raxio Data Centres in Africa is one of continued growth and innovation. In the coming year and beyond, we plan to further consolidate our position as a leading provider of digital infrastructure on the continent. This includes, commissioning five new facilities over the course of the next 16 months, and beyond that, the expansion of our data centre footprint into new regions.

Additionally, we aim to enhance our services by continuing to invest in cutting-edge technologies, including green and sustainable data centre solutions, to align with our environmental sustainability goals. We remain committed to nurturing local talent and fostering partnerships that support Africa's digital transformation journey.

As we navigate the evolving technology landscape, we see immense potential in emerging areas such as content, cloud, and edge compute. We will continue to adapt our offerings to meet the evolving needs of our customers, ensuring that Raxio Data Centres remains at the forefront of innovation in Africa's digital infrastructure space.

We are excited about the prospects that lie ahead, and we are dedicated to playing a central role in shaping the future of Africa's digital economy by providing secure, scalable, and sustainable data centre solutions.

Sibongile Thobakgale,
project sales manager (data centre)
for Southern Africa, Aggreko

Africa is growing in the data centre space. However, the region faces many challenges. Data centres are power hungry and, and keeping the equipment cool, especially in Africa, requires a lot of energy. Reliable power is a challenge in most African countries. In South Africa, Eskom is experiencing infrastructure challenges, causing loadshedding.

The second challenge is that currently, much of Africa's data is stored in Europe. This has prompted many African nations to reassess data regulations, especially when it comes to storing sensitive information.

Challenges like these are going to hinder the growth in the African data centre market.

It is projected that there will be 525 million people in Africa accessing the internet. It's a fast-growing market, with everything being done online. This is a great opportunity as demand for digital infrastructure continues to grow.

In terms of trends, we are seeing increased adoption of high fibre. The compact cable construction plays a different role in Africa, and communication services providers are rethinking their fibre packages.

Data centres are evolving in a 5G-enabled world, and with the evolution of AI, comes the intelligent data centre.

Of course, there is also now the focus on ESG - everybody's going green. We know that renewable is hard in Africa, however, Eskom is investing to build renewables over the coming years.

Hyperscalers like Amazon are planning to expand. Teraco's 186MW JB5 is expected to be completed in 2024, which is the biggest co-locator in Africa.

On 5 October, BCX launched the Alibaba cloud region in South Africa. I think that is one of the biggest success stories, because Google and AWS are international. When they come here, they're still international. But BCX is a local company which can compete with the hyperscalers with a local cloud data centre. This will enable it to offer cloud services closer to customers, decreasing the latency while meeting data sovereignty requirements. ∎

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Looking ahead: Subsea and fibre connectivity growth, currently rampant across the continent, will have a major impact on driving the market.

There are five countries in Africa that are going to be vibrant for the next two years: South Africa, Nigeria, Egypt, Morocco, and Kenya.

When you look at the growth trends in South Africa, we have a total capacity of 408MW, but the live power is just 106MW. Some are under construction, and some are new builds that are envisioned in the next two years. Likewise, Nigeria has got 100MW total capacity, with live power of 21MW.

When you look at South African projects, there's a phase two that is coming for Vantage Data Centres, Teraco is building the 180MW JB5 in Isando right now, as well as SPT2 in Cape Town, and Africa Data Centres is upgrading most of its facilities. Vantage Data Centres is also building another 30-40MW data centre, and is currently on construction of phase two.

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Website

Our sites

Colocation

LinkedIn

WIOCC Group company Open Access Data Centres (OADC) is Africa's fastest-growing data centre company and was established to transform the provision of data centre services for Africa.

OADC is deploying its open-access, Tier-III hyperscale data centres at major cable landing locations and in key business hubs throughout Africa. In parallel, it is rolling out OADC EDGE data centres to support service providers in cost-effectively extending network reach and to meet rapidly growing demand for content storage, processing and delivery at the network edge.

OADC prides itself on delivering an unparalleled client experience, offering expert assistance and tailoring bespoke solutions to client needs.

OADC is an environmentally responsible company and as such is pursuing a wide range of environmental and sustainability management accreditations.

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Website

Network

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Since 2008 WIOCC, the leading player in the deployment of carrier-scale, future-proofed network infrastructure into Africa, has been helping transform Africa's digital landscape by introducing client-centric innovations.

With the flexibility and scale to meet the ever-growing demand for reliable, high-speed capacity throughout Africa, driven by end consumers, enterprise users and the ecosystem that supports them. WIOCC's policy of continual investment in our network to create Africa's first, truly hyperscale network infrastructure means ongoing investment for growth, ensuring our readiness to meet the future data volume demands of end users throughout Africa.

Operating exclusively as a wholesaler, we have revolutionised the delivery of high-capacity connectivity between Africa and the rest of the world. Widely recognised as Africa's carriers' carrier, we offer carriers, content providers, cloud operators, ISPs and mobile operators reliable, seamless, high-capacity connectivity between more than 30 African countries and key global financial and commercial centres.

Our focus on building and maintaining strong, long-term relationships with each client enables us to develop bespoke solutions that meet their current requirements and have the capability to match future demands for growth, extra resilience and geographical expansion.