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# Unleashing the Potential: The Future of Data Centres in The Middle East and Africa

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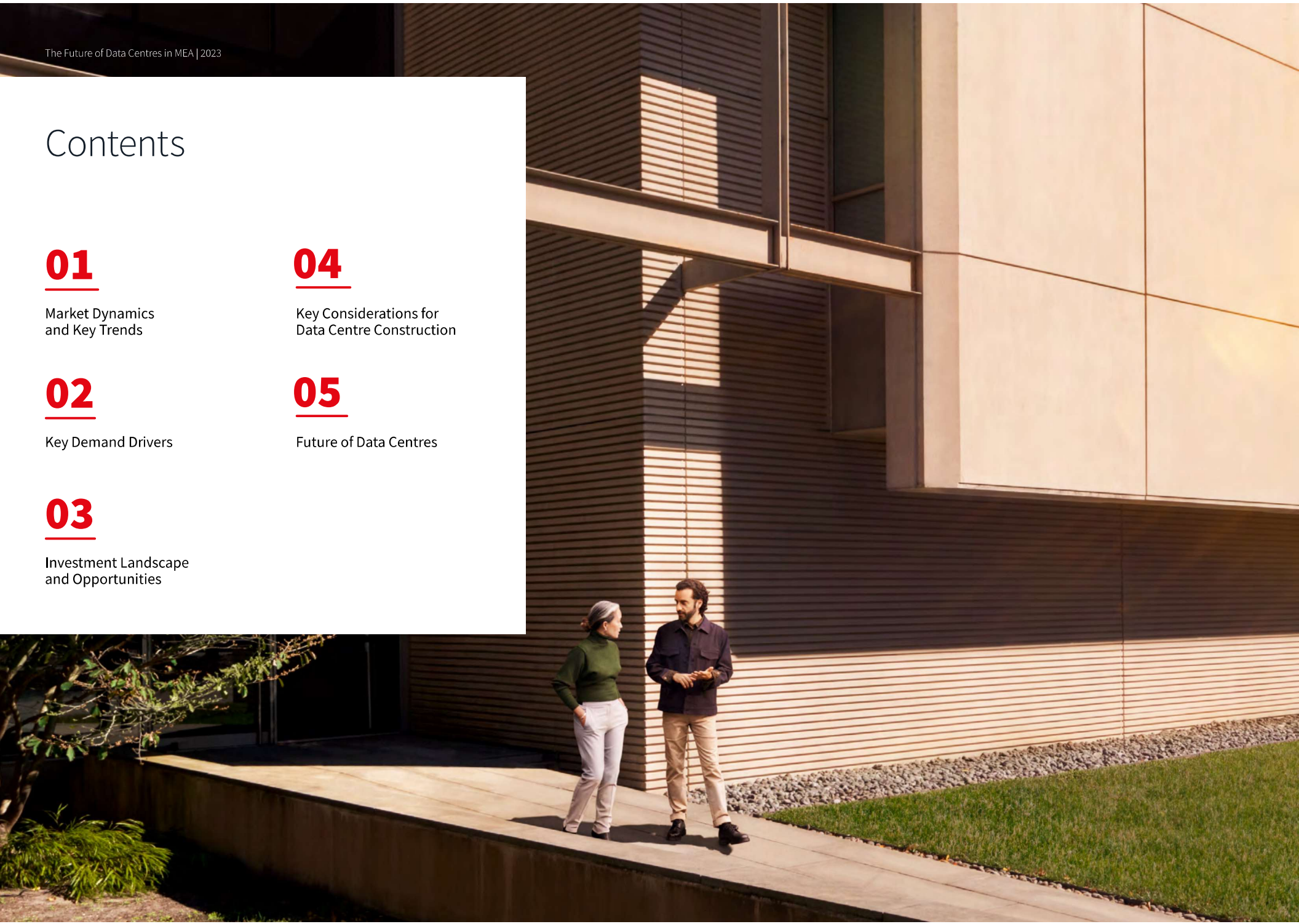
# Contents





# Unleashing the Potential: The Future of Data Centres in the Middle East and Africa

In today's rapidly evolving digital landscape, the **Middle East and Africa (MEA)** region stands at the forefront of an era defined by transformative technological advancements. As businesses and industries increasingly embrace the power of digitisation, data has emerged as the lifeblood of innovation, efficiency, and competitiveness. Recognising the critical role that data plays in driving economic growth and societal progress, organisations across various sectors are harnessing the potential of data centres to **enhance their operations, improve customer experiences, and unlock unprecedented opportunities for advancement.**

The state of data centres in the Middle East and Africa is changing rapidly. The region is becoming increasingly important for global data centre operators due to its strategic location, favourable government policies, and growing demand for 5G networks, cloud computing and other digital services.

This report explores the future of data centres in the Middle East and Africa. As the region experiences a significant surge in digital transformation, we delve into the key **trends, opportunities,** and **challenges** shaping the data centre landscape and the factors that are driving its growth.

The data centre market in the Middle East and Africa is still in its early stages of development, but it is growing rapidly. The region is expected to be one of the fastest-growing data centre markets in the coming years, given its great potential for expansion to bridge the gap between the limited amount of supply and the growing levels of demand.

The growth of the data centre market in the Middle East and Africa presents a number of opportunities for businesses and investors alike. As the digital economy continues to grow, data centres play a crucial role in meeting the escalating demand for data storage, processing, and connectivity. For **investors**, this translates into a stable and potentially lucrative investment opportunity with a reliable revenue stream. Data centres' strategic location in the Middle East and Africa can also open doors to serving global markets and facilitating interconnectivity, therefore attracting **businesses** seeking reliable data services.

The data centre market in the Middle East and Africa also presents a number of challenges. For instance, the region is facing **limited availability of renewable energy,** troubling climate conditions; including **water scarcity** (mainly in the Middle East), and **power outages** and **connectivity constrains** (mainly in Africa). Businesses and investors that are considering entering the data centre market in the region will need to carefully consider and address these challenges.

Despite the challenges, the data centre market in the Middle East and Africa is a promising one with significant growth potential. Therefore, the market players that are able to overcome the challenges and capitalise on the opportunities will be well-positioned to succeed in this rapidly growing market.

## The growth of the data centre market in the Middle East and Africa is being driven by a number of factors, including:

### Population & urbanisation

The evident surge in **population and urbanisation,** which has resulted in higher internet penetration and a growing need for digital transformation in the region. Consequently, these factors are significantly influencing the data centre market, necessitating rapid expansion to meet the escalating demand.

### Adoption of cloud computing

The increasing **adoption of cloud computing** and other digital services, which are becoming highly popular in the Middle East and Africa. This is driving further demand for data centre space to host cloud computing services.

### Data sovereignty

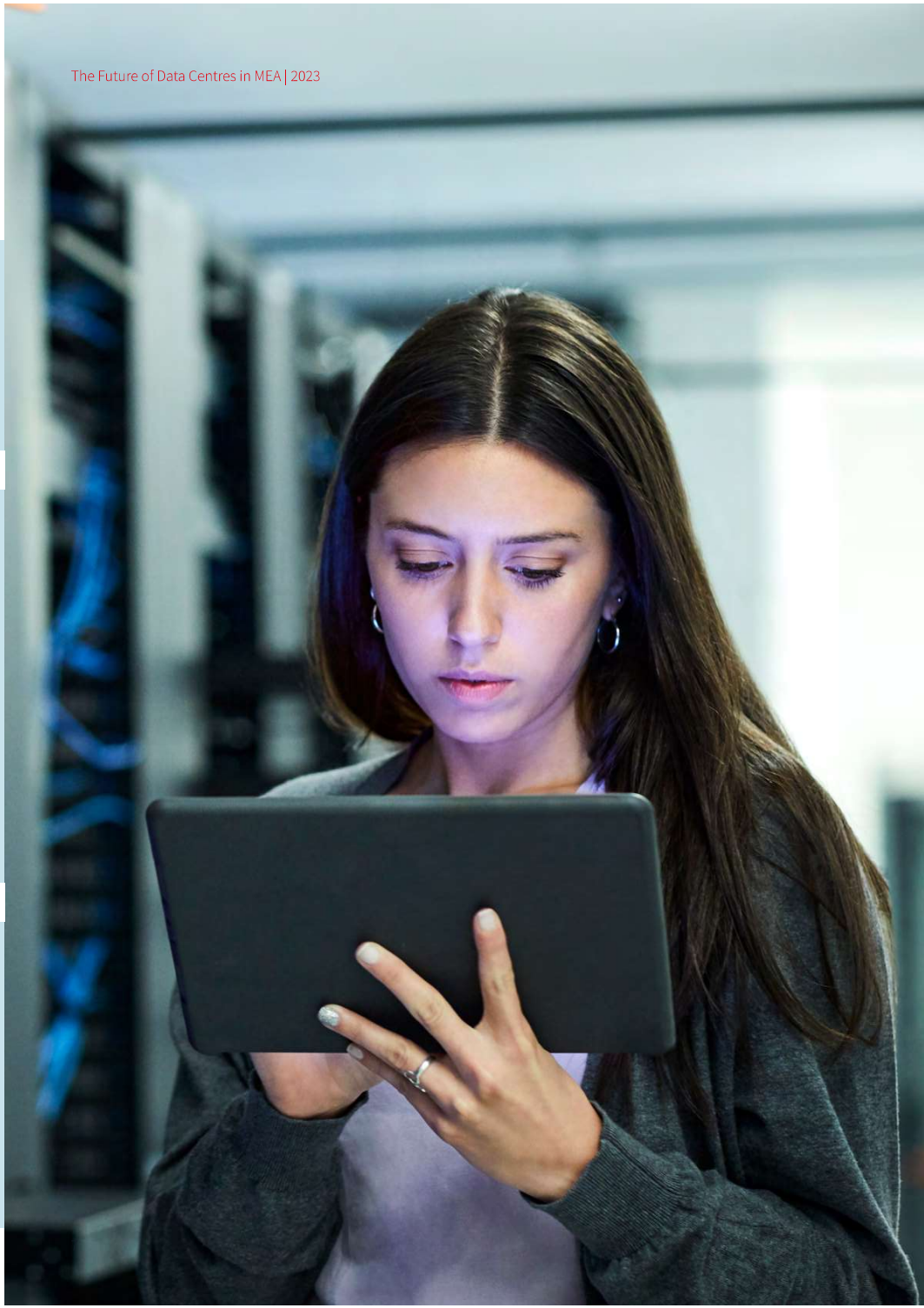
The concept of **data sovereignty**, in which data is subject to the laws of the country where it is held, has become of greater importance. Since the vast majority of data in both the Middle East and Africa is currently being stored outside of the region, the push by growing number of countries to exercise greater control over data collected and maintained within their borders is boosting demand for data centres.

### Government policies

The favourable **government policies** in several countries in the region - including the provision of special economic zones, tax incentives and infrastructure development, which indicate a supportive ecosystem for a thriving data centre market. This is, therefore, encouraging more data centre operators to start investing in the region.



The Future of Data Centres in MEA | 2023



# 01

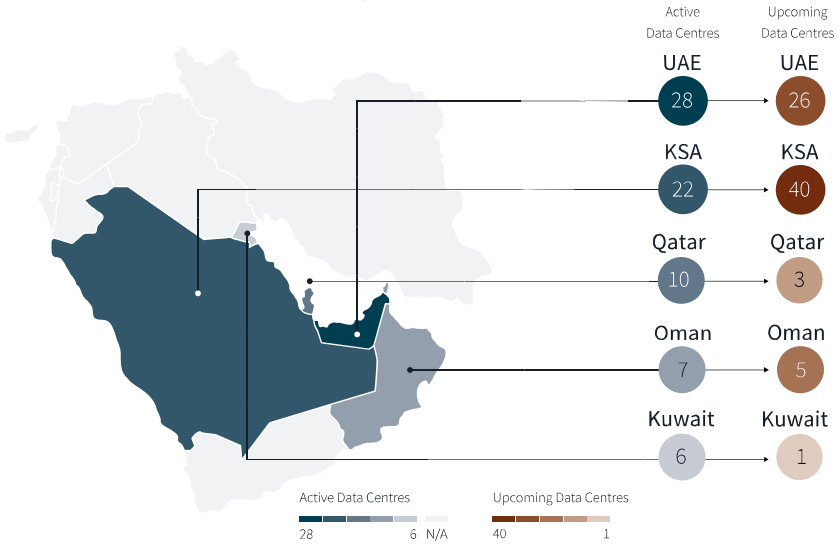
# Market Dynamics and Key Trends - Understanding the Data Centre Scope in the Middle East and Africa

The data centre market in the Middle East and Africa is currently underserved and considered nascent compared to the rest of the world, and there remains notable untapped potential that we expect to soon see explored and utilised. Multiple existing and emerging factors are resulting in a rapid surge in demand for data. The **growing digital transformation** (5G, IoT, etc.) and the increase in **submarine cable investment** and **fibre connectivity** are contributing to the rising investor interest in expanding their data centre operations in the region, expecting it to witness a new era of growth in the coming decade.





## Middle East Data Centre Landscape




| Country | Active Data Centres | Upcoming Data Centres | Network Readiness Index (2022) – Rank/131 | Key Players |
|---|---|---|---|---|
| United Arab Emirates | 28 | 26 | 28 | Khazna, Gulf Data Hub, Equinix. |
| Saudi Arabia | 22 | 40 | 35 | Mobily, Gulf Data Hub, STC |
| Qatar | 10 | 3 | 42 | Meeza, Ooredoo, Quantum Switch Tamasuk (QST) |
| Oman | 7 | 5 | 53 | Equinix, Ooredoo, Datamount |
| Kuwait | 6 | 1 | 63 | Ooredoo, Gulf Data Hub, Zajil Telecom |

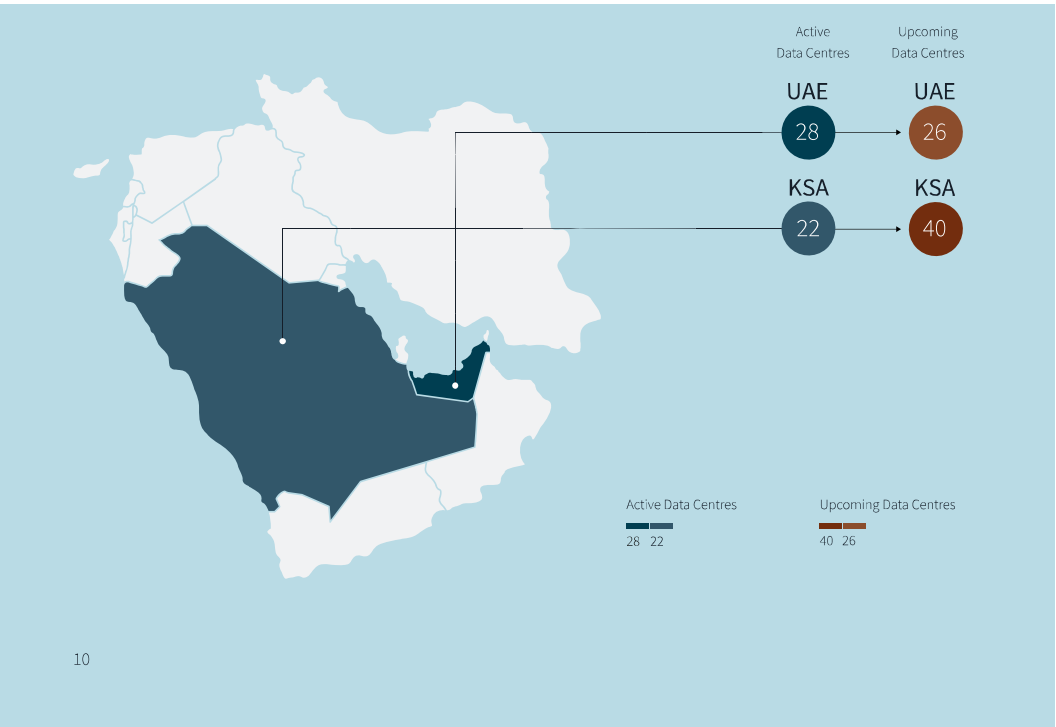
Source: Arizton and JLL

The total approximate number of data centres presently operating in the **five identified markets** in the Middle East is **73 colocation facilities,** which are specialised data centres where multiple organisations can rent space to house their servers, networking equipment, and other hardware. It is worth highlighting that most existing and future data centres in the Middle East are built in accordance with tier 3, followed by tier 4 standards to have the maximum comprehensive redundancy and fault tolerance systems as opposed to tiers 1 and 2, which are simpler in infrastructure and offer the least amount of redundancy, with basic levels of reliability and single points of failure.

## *Primary Data Centre markets*

The **United Arab Emirates** (UAE) and **Saudi Arabia** have the highest share of data centres in the region - with **28** and **22** colocation facilities, respectively. Both the countries have made critical strides and are moving forward with their digital transformation strategies and smart city initiatives, making them at the forefront of data centre investments, and expecting them to rise exponentially in the coming years. Key data centre providers in the UAE include **Khazna** and **Equinix**, while we see strong presence from data centre operators like **Mobily** and **STC** in Saudi Arabia.

The future supply pipeline in Saudi Arabia is remarkably outpacing the rest of the countries, with around **40** data centres under development, according to Arizton. Among the investments, **Quantum Switch Tamasuk (QST)** has set a goal to develop **six** new facilities across the kingdom with a power capacity that would reach around **300 megawatts** (MW) by 2026. This expansion of data centre capacity is on the back of Vision 2030 and the government's push to make the country the main Information and Communication Technology (ICT) and data centre hub in the region. To support its goal, **Saudi Arabia** has launched a **USD 18 billion** strategy to partner with local and international investors and establish a nationwide network of large-scale data centres.








Traditionally, data centre investments in the kingdom have been mainly directed towards the capital city, **Riyadh**, followed by **Jeddah** and **Dammam**. However, the areas of interest have been expanding, and more investments are projected to be pumped into Saudi Arabia's new smart city, **Neom**, in the coming years. This is further supported by the city's **USD 500 million** hyperscale data centre, launched earlier in 2022, which aims to offer fast and reliable data centre services and connectivity to the country and the wider Gulf Cooperation Council (GCC) market.

Meanwhile, the UAE has around **26** new data centres that are being developed, which, once operational, will bring the total inventory to **54** data centres. **Dubai** is currently the prime market for data centres in the Emirates, with around **17** facilities, followed by **Abu Dhabi**. Both cities have been recognised as two of the smartest cities in the Middle East and North Africa (MENA) region and among the top 20 globally, as indicated by Switzerland's International Institute for Management Development's (IMD) Smart City Index for 2023.

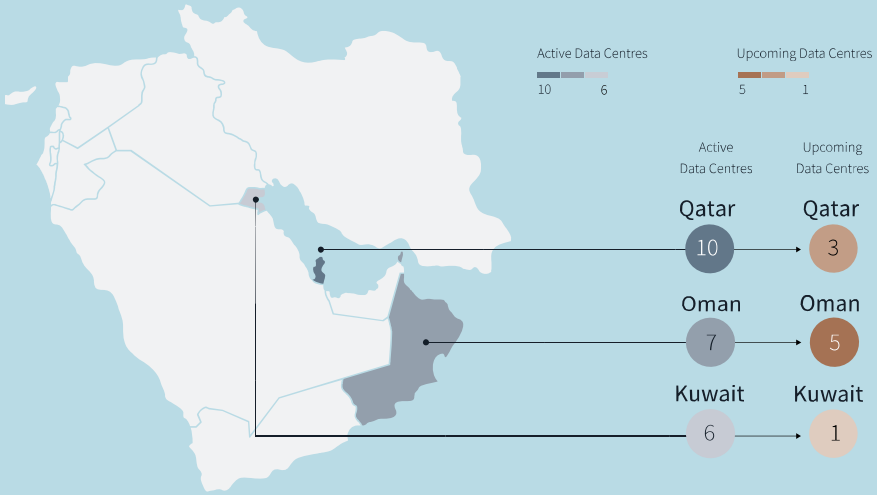
Moreover, the UAE's internet penetration rate is over **98%**, and it ranked **28th** out of 131 in the Network Readiness Index (2022). These notable achievements make the country an appealing destination for data centre investments, being perceived as a secure and reliable option for investors. While **Khazna**, the leading data centre provider in the UAE, currently operates around **12** data centres across the country, it aims to add another **12** over the course of two years, expecting to add a total planned capacity of **300 Megawatts**.

## *Secondary markets witnessing investment growth*

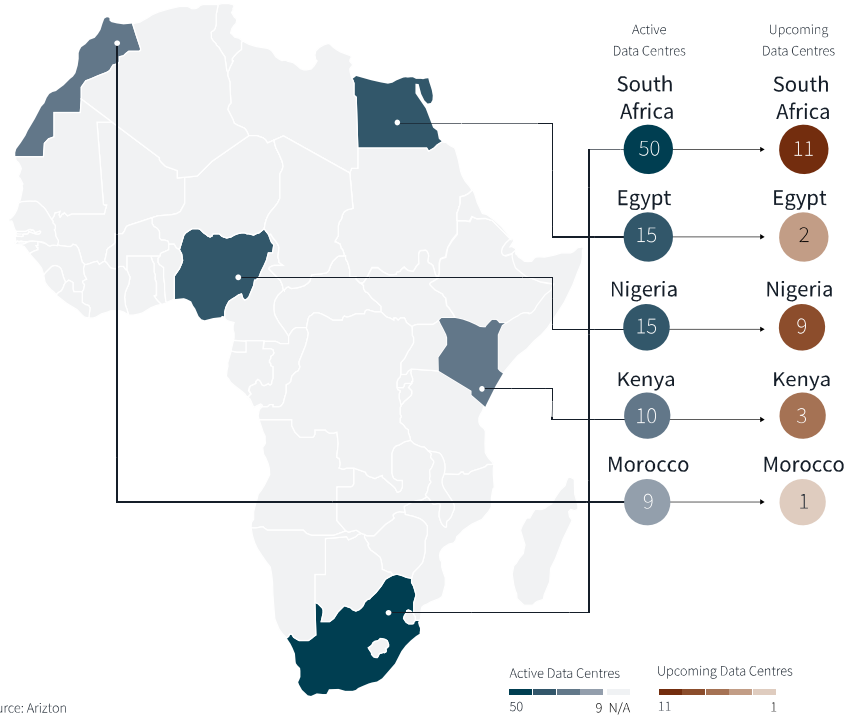
Elsewhere in the Middle East, other GCC countries are making efforts to attract investments and expand their data centre capacity. **Qatar,** for instance, currently has **10** live colocation data centres, with an additional **three** developments under construction. Furthermore, in May 2023, **Google Cloud** announced the opening of its Doha cloud region in response to the growing demand for cloud services in Qatar and the Middle East. The opening of the cloud region is also bringing the country one step closer to achieving its National Vision 2030, which aims to transform it into a digital economy through innovation and digital transformation.

Similarly, with **six** active data centres, **Kuwait** partnered with **Google Cloud** earlier this year to open a new cloud region in efforts to support the country's 2035 vision and achieve its digital transformation strategy. Under the agreement, three sites would be dedicated to opening and operating three mega-space data centres in the country.

Moreover, **Oman**, which has **five** existing and **seven** developing data centres, is also considered one of the major regional digital hubs and is focusing on increasing investments in data centres by enhancing its digital infrastructure with 5G networks. This is in addition to the country's efforts to enhance international connectivity by further expanding on its 14 existing submarine cables that are connected to the Europe, Middle East, and Africa (EMEA) and Asia regions. That said, some of the data centre providers that are most active in these Gulf counties are **Ooredoo**, **QST**, and **Gulf Data Hub**.




## Africa Data Centre Landscape




Source: Arizton

| Country | Active Data Centres | Upcoming Data Centres | Network Readiness Index (2022) – Rank/131 | Key Players |
|---|---|---|---|---|
| South Africa | 50 | 11 | 68 | Teraco, Africa DATA CENTRE, Dimension Data (NTT) |
| Egypt | 15 | 2 | 73 | Raya, Africa DATA CENTRE, Orange |
| Morocco | 9 | 1 | 79 | N+ONE, Etix, Orange |
| Nigeria | 15 | 9 | 109 | Main One , 21st Century, Africa DATA CENTRE |
| Kenya | 10 | 3 | 77 | I-Colo (Digital Realty), Africa DATA CENTRE, Telkom Kenya |

Source: Arizton and JLL



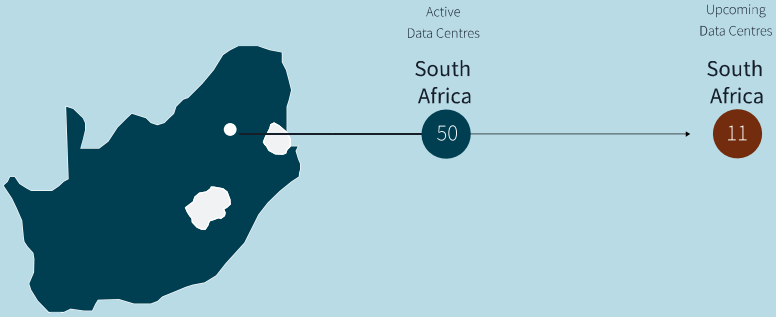


The **African** data centre landscape is also considered largely underserved and even lagging behind in terms of volume and capacity given its larger size and greater population density. Despite having a sixth of the world's population, Africa only has under **1%** of the total global data centre IT capacity. That said, the situation has started to change, and there is a growing interest from major players to either enter or expand their cloud services into the region. As such, **Open Access Data Centres (OADC)** has announced its aim to deploy around **USD 500 million** of investment into delivering and operating new data centres in Africa. Although the digital transformation in Africa is not evolving as rapidly as in the Middle East, some African countries have started to show solid changes to their digital infrastructure, which is fuelling demand for data in the region.

## *Primary Data Centre market*

Similar to the Middle East, the majority of the main data centre operators in Africa build their facilities in accordance with Tier 3 and 4 standards. That said, out of the **121** data centres currently active in the African market, the majority are located in **South Africa**. Hence, South Africa holds the lion's share of data centre capacity on the continent, having established around **50** colocation facilities, with Johannesburg leading the majority of facilities, followed by Cape Town, according to Cloudscene.

Moreover, the country continues to witness an increasing footprint from existing and new market entrants in the data centre field, such as **Africa Data Centres, BCX, NTT Global** and **Dimension Data**. From a global investment perspective, **Equinix** announced in December 2022 that it would be tapping into the South African data centre market for the first time with a **USD 160 million** investment in Johannesburg, expected to be operational by mid-2024.



## *Secondary markets following closely*

Aside from South Africa, the level of investment in the other countries (Egypt, Morocco, Nigeria, and Kenya) is notably increasing. Therefore, we expect them to close or reduce the gap of around **1,000 MW** of required capacity in Africa over the next three to five years.

**Nigeria** and **Egypt** come in second after South Africa, with a total of **15** live data centres each. Both the countries hold a distinct advantage with their strategic location, as investors are seen expanding their reach towards coastal areas with prominent access to subsea cables which provide robust and efficient backbone for global data connectivity.

It is worth highlighting that **Nigeria** is established as one of the West African data centre hubs. As the country has the largest population in Africa and is viewed as one of the continent's largest telecommunications markets, Nigeria is quickly becoming among the top investment options when it comes to developing the data centre market.

Recognising its growth potential, just between January and April 2022, over **five** data centres were launched in **Nigeria**. Moreover, in December 2022, **OADC** announced the completion of its first phase, worth **USD 150 million**, of a carrier neutral data centre facility in Lagos, which will deliver around **20 MW** of sire load across over 7,200 sq. m. of white space.

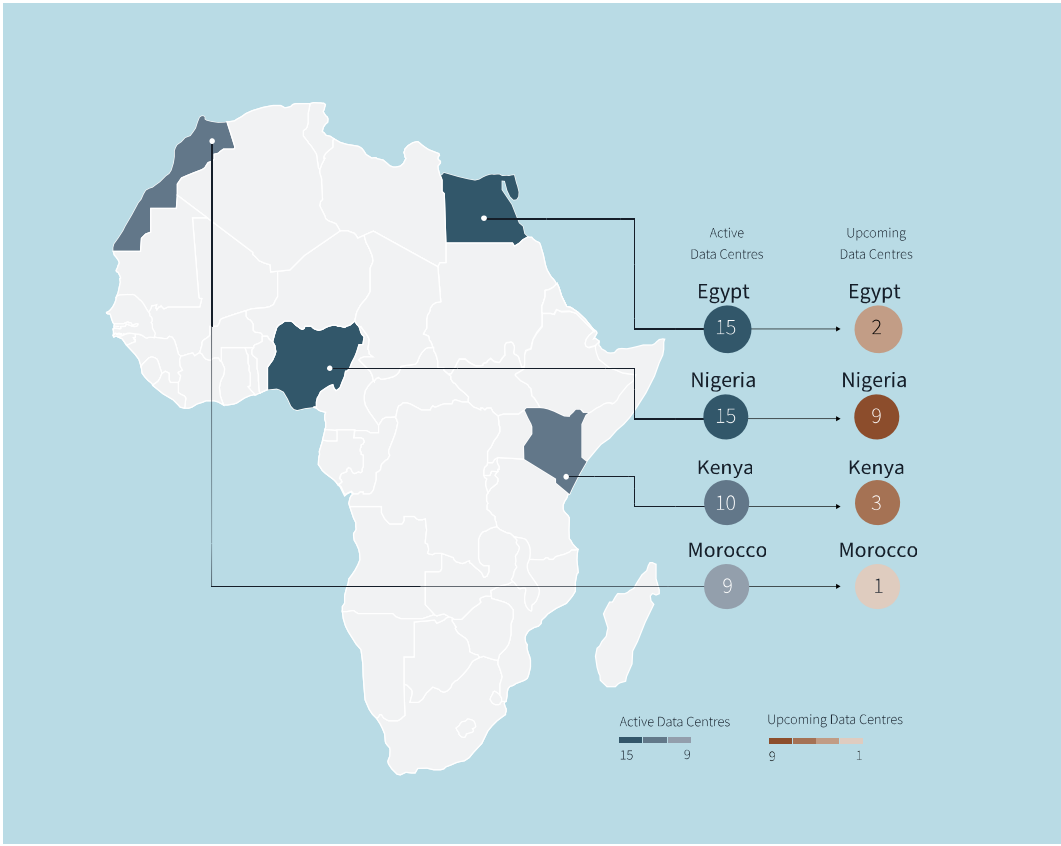
**Morocco** is another emerging North African country in the data centre colocation industry and is also considered a key strategic location due to its proximity to Europe. The country has made notable progress in its digital infrastructure and has placed itself as a primary fintech hub. **Morocco** currently houses **nine** data centres (majority in Casablanca), with a limited number of future facilities launched or scheduled for completion.

Towards the east of Africa, **Kenya** is increasingly becoming the preferred investment option for several data centre providers, with the growing demand for cloud services prompted by improved business conditions and new market entrants, as well as the migration of many businesses to digital solutions.

**Kenya** currently has **ten** active data centres and another **three** in the pipeline. Nairobi is the prime focus of investment as it is the capital and business centre (closely competing with Cape Town and Lagos), followed by Mombasa, the coastal and port metropolitan city. Some of the country's main data centre players include **MTN, Africa Data Centres, I-Colo,** and **Telkom Kenya.** In November 2022, Kenya's local data centre provider, IXA Africa, partnered with Helios investment with a total investment value of **USD 50 million** to expand its Nairobi facility and deliver over 20 MW of hyperscale-ready capacity to the market. Moreover, there are several new projects in Kenya's pipeline, such as the expansion of the **I-Colo** project and a new colocation data centre facility planned by **Cloudoon** along the Tana River.







# 02

# Navigating the Landscape: Key Demand Drivers for Data Centres in the MEA Region

The need of reliable, cutting-edge digital infrastructure has been highlighted by the rapid expansion of online services during the COVID-19 pandemic and the adoption of remote working. **Artificial Intelligence** (AI) is the new buzz word which will drive significant demand for highly intensive data centres in the near future. Additionally, the demand for flexible, scalable, and secure data storage will continue to rise with the growth of cloud computing and 5G network adoption, and as **smart city** and **smart government** initiatives continue to gain traction in the region.

The data centre landscape in the Middle East and Africa is undergoing a transformative phase, fuelled by a convergence of factors that drive demand and shape the real estate ecosystem. These drivers stem from the **dynamic digital landscape** and **evolving business environment** in the region, highlighting the increasing need for a robust data centre infrastructure. It is essential to understand the current landscape and the forces driving the industry forward. This section takes a comprehensive approach, intertwining the present and future demand drivers to provide a holistic view of the data centre ecosystem and guide strategic decision-making.





## *1. Urbanisation and Digital Metropolis*

Cities are the vibrant hubs where data centres thrive. As city skylines evolve and populations surge, the need for agile and scalable infrastructure intensifies. The Middle East and Africa region is experiencing substantial **population growth** and **rapid urbanisation**, which are among the key drivers for data centre demand.

> As per the latest available data from Oxford Economics, the total population in the Middle East increased by **19%** to reach 277 million in 2022 compared to 2012, with an urbanization rate of **81%** in 2022. Over the same period, population in Africa increased by **28%** from 1.1 billion in 2012 to 1.4 billion in 2022, with an urbanization rate of **49%** in 2022.

The **expanding urban areas** are becoming hubs of economic activity and driving the demand for digital services. As more individuals join the **digital ecosystem** and engage in online activities, the demand for **efficient data storage, processing power**, and **network connectivity** escalates. Data centres provide the critical infrastructure necessary to accommodate the rising data traffic generated by a larger and more connected population. Furthermore, projections indicate that population growth and urbanisation trends will continue to rise in the MEA region. The urban centres are expected to witness a further concentration of population and economic activities, resulting in an increased demand for digital services, and therefore, a greater need for a stronger data centre infrastructure to accommodate the growing demand.

## *2. The Dawn of Digital Transformation*

**Digital transformation** is sweeping across sectors in the Middle East and Africa, revolutionising the way businesses operate and interact with customers. From **smart cities** and **e-commerce** to **telemedicine** and **Industry 4.0**, digital technologies are transforming industries, improving efficiency, and creating new avenues for economic development. It encompasses a range of technologies that can store, process, and analyse vast amount of data generated by digital transformation initiatives, including:

### 01 Cloud Computing

Cloud computing has revolutionised the business landscape, providing **scalability**, **cost-efficiency**, and **flexibility**. Organisations are increasingly adopting cloud services, driving the demand for data centres equipped to handle cloud-based applications and services. The adoption of cloud services in the region is accelerating, with businesses leveraging public, private, and hybrid cloud environments.

### 02 Edge Computing

Edge computing is a **decentralised computing architecture** that brings computing infrastructure and services closer to the location where data is being generated, rather than relying on centralised data centres located far away. The concept of edge computing is driving the demand for data centres in the MEA region due to its ability to reduce latency, ensure data sovereignty, and overcome connectivity challenges.

### 03 Artificial Intelligence and Machine Learning

The integration of **AI** and **ML** technologies in various sectors generates a vast amount of data that requires processing and storage capabilities. Data centres with robust processing capabilities are essential for training AI models, performing complex algorithms, and facilitating advanced analytics, driving the demand for high-performance computing infrastructure.



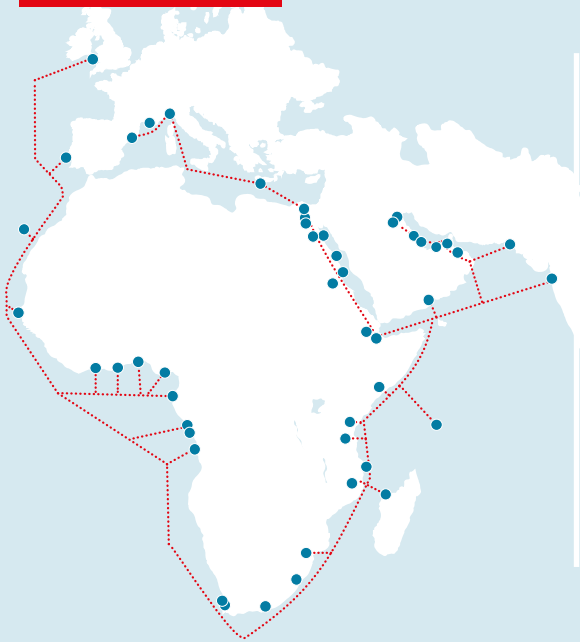
### 04 5G Networks and Hyperconnectivity through enhanced subsea cabling

Efficient **connectivity** is critical for data centres to enable seamless data transfer and ensure low-latency connections. The region's increased connectivity plays an important role in driving data centre demand. More people are gaining access to digital services thanks to advancements in telecommunications infrastructure and rising internet penetration rate.

The region has witnessed substantial improvements in network infrastructure, including the expansion of fibre optic networks and the landing of international submarine cables. Facebook has partnered with leading African and global operators to build **2Africa**, the most comprehensive subsea cable to serve the African continent and the Middle East region. **Upon completion in 2024**, it will connect three continents – Africa, Asia and Europe and will be the largest subsea cable system.

The deployment of **5G** networks in countries like UAE, KSA, and Qatar have revolutionised connectivity with **faster speeds, low latency**, and **increased bandwidth**. Additionally, many countries in Africa are catching up with their 5G deployment and its rollout across the region will drive demand for edge data centres, and help bridge the digital divide, where broadband access could be limited in certain areas.

**2Africa subsea cable**



**45,000** km connecting

**33** countries

**46** landing points

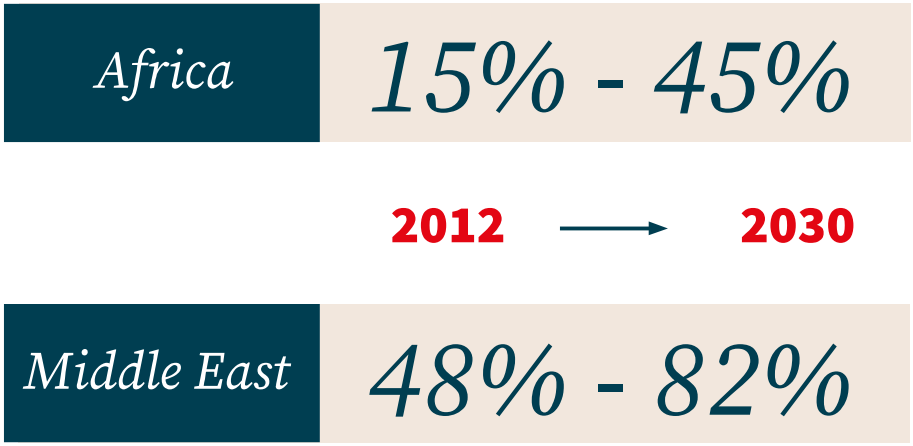
## *3. Growth of Internet Economy*

The continuous growth of the **internet economy**, coupled with increased **mobile** and **internet penetration**, drives the need for data centres. As more people gain access to the internet and engage in online activities, the demand for data centres to support digital services, cloud computing, and storage escalates. The Middle East and Africa region has experienced a notable increase in mobile and internet penetration rates, contributing to the rising demand for data centres.

In 2022, the Middle East exhibited a considerable lead over Africa in terms of internet penetration, recording a rate of **79%** compared to Africa's **38%**, according to Oxford Economics. Notably, nearly all of the **GCC** countries registered around **98%** of internet users as of 2022. In Africa, **Morocco** held the highest market share with **89%** of internet users, followed closely by South Africa, at **79%**.

However, it is crucial to acknowledge Africa's significantly larger population, which poses a challenge for the region to catch up with the Middle East. Looking ahead, projections from Oxford Economics indicate that by 2030, Africa's internet penetration rate is expected to rise to **45%**, while the Middle East is forecasted to reach **82%**.

**Internet Penetration Rate**




Source: Oxford Economics





## *4. Thriving E-commerce and Digital Services*

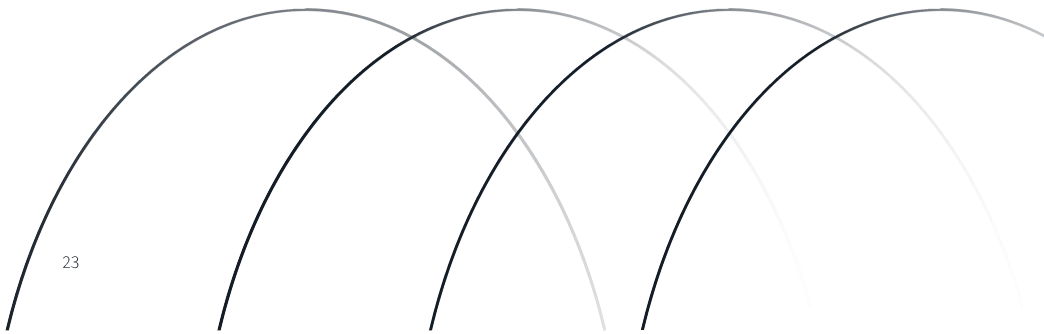
The expansion of **e-commerce platforms, digital payment systems,** and **online services** is a prominent driver of data centre demand in the region. As consumers increasingly embrace online shopping, digital banking, and digital entertainment, businesses need data centres to ensure seamless transaction processing, secure data storage, and efficient content delivery. These centres act as the backbone of the digital economy, enabling businesses to offer reliable and scalable digital services to their customers.

> According to Dubai CommerCity, **Saudi Arabia** and the **UAE** are among the fastest growing E-commerce markets in MEA, increasing at a Compound Annual Growth Rate (CAGR) of **39%** & **38%** in 2022, respectively.

## *5. Industry Disruption and New Horizons*

Data centres play a pivotal role in supporting industries undergoing disruption and exploring new horizons. These winds of disruption present opportunities for data centre operators, real estate developers and investors. Emerging technologies such as **autonomous vehicles, augmented reality, virtual reality,** and **the Internet of Things (IoT)** require scalable and reliable data infrastructure. These technologies present new opportunities for data centre providers and drive the need for specialised facilities tailored to their unique requirements.

Additionally, as new industry verticals emerge and existing sectors undergo digital transformation, data centres will be essential in supporting their technological infrastructure. These include sectors such as **healthcare, education, logistics, energy, and entertainment,** where data-intensive applications and services will rely on robust data centre capabilities. These sectors will generate substantial data and require advanced data centre infrastructure to support their technological needs. Data centres will play a vital role in supporting innovation, enabling data-driven decision making.



# 03
# Investment Landscape and Opportunities

**As businesses and governments embrace the digital transformation journey, the investment landscape for data centres presents promising opportunities for investors and stakeholders. Market players are now discovering exciting opportunities in data centres, considering them as a viable investment option that aligns with the region's digital transformation journey.**

The real estate sector plays a pivotal role in enabling the expansion and optimisation of data centres. By providing the physical space, power infrastructure, and connectivity necessary for their operation, real estate developers and investors have a unique opportunity to leverage the growing demand for data centres. This symbiotic relationship between data centres and real estate presents exciting prospects for the Middle East and Africa region, paving the way for increased investments, job creation, and urban development.





## Market Size

According to a recent report by Research and Markets, the data centre investment market in the **Middle East** was valued at **USD 4.86 billion** in 2022 and is expected to grow at a CAGR of **8.53%** from 2023-2028, reaching to **USD 7.94 billion**. The **UAE** and **Saudi Arabia** are expected to be the leading contributors to the growth of data centres, followed by countries like Oman, Kuwait, Bahrain, and Qatar, owing to the rapid deployment of 5G networks. On the other hand, **Africa** data centre investment market, which was valued at **USD 2.74 billion**, is projected to grow at a faster pace of **10.25%** by 2028, to be recorded at **USD 4.92 billion**. **South Africa** is anticipated to dominate the market with the highest number of investments, followed by Nigeria and Kenya. Egypt is also emerging as a market for regional investments, with several major African investors showing their interest on developing data centres.

## Market players

**Colocation service providers, cloud service providers, Governments, Private Equity Firms, Enterprises** and **Telecommunication service providers** are the prime investors in the data centre development market. In terms of transactional activities, single data centre transactions are considered limited as investors more commonly look for a platform on which they can establish themselves in the market. By co-investing and sharing operational responsibilities, the collaboration creates a mutually beneficial ecosystem for both parties.

## Challenges & Opportunities

One downside to building new data centres in the region is the **high cost of construction**. Similar to the global real estate sector, the construction market is facing several headwinds that are resulting in an increased cost of projects. These include **supply chain bottlenecks, extended lead times for major components, skills and talent shortages in the data centre field, higher and more volatile commodity prices, and rising inflationary pressures.**

This is coupled with the fact that the **energy infrastructure** in some regions of the Middle East and Africa may not be as reliable as in other parts of the world, and building or upgrading the necessary energy infrastructure can be costly due to the substantial amount of electricity required to operate data centres. Nevertheless, **Saudi Arabia** benefits from an abundance of raw materials, which helps keep construction costs relatively low compared to other regions.

Aside from exploring r**enewable energy sources** to power data centre facilities, considering **economies of scale** to plan and build larger data centres with sufficient capacity to accommodate future growth can lead to lower operational costs per unit of IT capacity. Public and **private partnerships (PPPs)** and **Mergers and Acquisitions (M&As)** are also considered successful means to share and reduce financial burdens of constructing data centres.

## How are Funds Raised?

Investment is rather slow relatively speaking from a M&A perspective in the Middle East and Africa, and what we have mostly seen in the market is **partnerships and funds** being created in order to develop new data centres. Leading real estate developers are venturing into the data centre sector through joint ventures with established data centre operators. This strategic move allows them to leverage their expertise in construction and facility management, while data centre operators provide the technical know-how and operational experience. Moreover, **income strip deals, sale and leasebacks, operating business platforms, and club funds** are all emerging in data centre transactions, along with the other alternative asset classes.

### Middle East

In the **Middle East**, we are seeing a lot of collaborative partnerships between developers and **Sovereign Wealth Funds**. Earlier this year, **DigitalBridge** announced plans to expand its footprint in the region by forming a partnership with the Saudi sovereign wealth fund, the **Public Investment Fund (PIF)**, to develop new data centres across **Saudi Arabia**. Moreover, the Qatar-based IT services and solutions provider, **MEEZA**, had recently launched its 5th data centre facility in **Doha** and announced the successful completion of its share offerings through an Initial Public Offering (IPO) on the Qatar Stock Exchange Market in July 2023. In the UAE, **Etisalat Group** and **Group 42** have joined forces to merge and operate their data centre businesses under the name **Khazna** Data Centres, establishing Khazna as the largest data centre provider in the UAE.

### Africa

On the other hand, in **Africa**, the existing data centre market is largely dominated by the **telecommunications** sector and the **government**, which we have seen start to sell off their stakes. Among the several M&As that stood out in Africa, **Teraco Data Environment** – Africa's largest vendor-neutral data centre and interconnection platform provider, was acquired by the Real estate investment trust (REIT), **Digital Realty**, in 2022 for **USD 3.5 billion**. It is worth highlighting that the same REIT acquired **Medallion Data Centres**, which operates 2 data centres in Nigeria (Lagos and Abuja), in 2022. Moreover, the global digital firm and leader in the colocation data centre market, **Equinix**, entered the African data centre market in 2022 with its **USD 320 million** acquisition of **MainOne**, which is another leading West African data centre and connectivity solutions provider. Earlier in 2020, the Investment firm **Actis** acquired another Nigerian operator, **Rack Centre**, for **USD 250 million**, with the aim of developing a chain of data centres in Africa.



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## *Value for investors*

Investing in data centres can offer an excellent opportunity for investors to **diversify their portfolios** away from traditional real estate. This has been mostly evident with **Private Equity** firms diversifying away from traditional assets with their new investment decisions. Furthermore, data centres also serve as **mission-critical infrastructure**, supporting the continuous functioning of businesses, education, healthcare, and the overall economy.

One of the most critical factors that attract investors to a particular investment option is the anticipated **financial return**. In the case of colocation data centres, the return on investment primarily comes from leasing space (rack space) to third-party customers. Moreover, given their capital-intensive nature, data centres require a substantial footprint to **sustain revenue growth** and capitalise on **economies of scale.**

Data centres offer investors a **stable** and **predictable** income stream. Yields in the data centre sector can vary significantly across different markets and geographies. Generally, data centre yields are considered attractive relative to other real estate asset classes due to the stability and long-term contracts associated with the industry.

> Depending on the type of data centre investment, typically, yields can range between **12%** to **16%** in the MEA region.

In a rapidly developing region such as the Middle East and Africa, where data centre demand is increasing, higher yields are possible due to factors like market potential, risk factors, and different stages of market development.

## *Cloud presence – Hyperscale investments on the rise*

**Hyperscalers** are playing a crucial role in shaping the future direction of data centres in the coming years, as their presence generally signals a booming and attractive data centre market.

**So, who are they, and why are they critical to the growth of data centres?**

Hyperscalers are a category of **large technology companies** that build and operate data centres on a global scale to provide cloud-based services and solutions to millions of users and businesses worldwide. These companies are capable of providing robust infrastructure, high network connectivity, low latency, and scalability. Therefore, various data centre providers and investors, including those in edge and colocation, often choose to expand in areas with active hyperscaler presence due to the increased sense of confidence they bring to the market.

**Currently, hyperscale presence in the Middle East and Africa make up less than 5% of the total global presence.** While the percentage rate is fairly low, major cloud providers are aware of the need to establish more availability zones and cloud regions in this part of the world, owing to businesses' increased level of migration to data centres and the thriving demand for cloud computing, big data, and IoT technologies.

Moreover, to support the region in becoming a prominent player in the data centre market, many governments in the Middle East and Africa have been working on creating an environment that is conducive to attracting more hyperscalers to the MEA region by fostering economic growth, infrastructure development, and technological advancement. Therefore, hyperscalers have been becoming increasingly active over the past few years, with a more promising future for expansion in the region.

Today, there are circa **4** major hyperscalers with an existing cloud presence and an active interest in expanding in the Middle East and Africa.



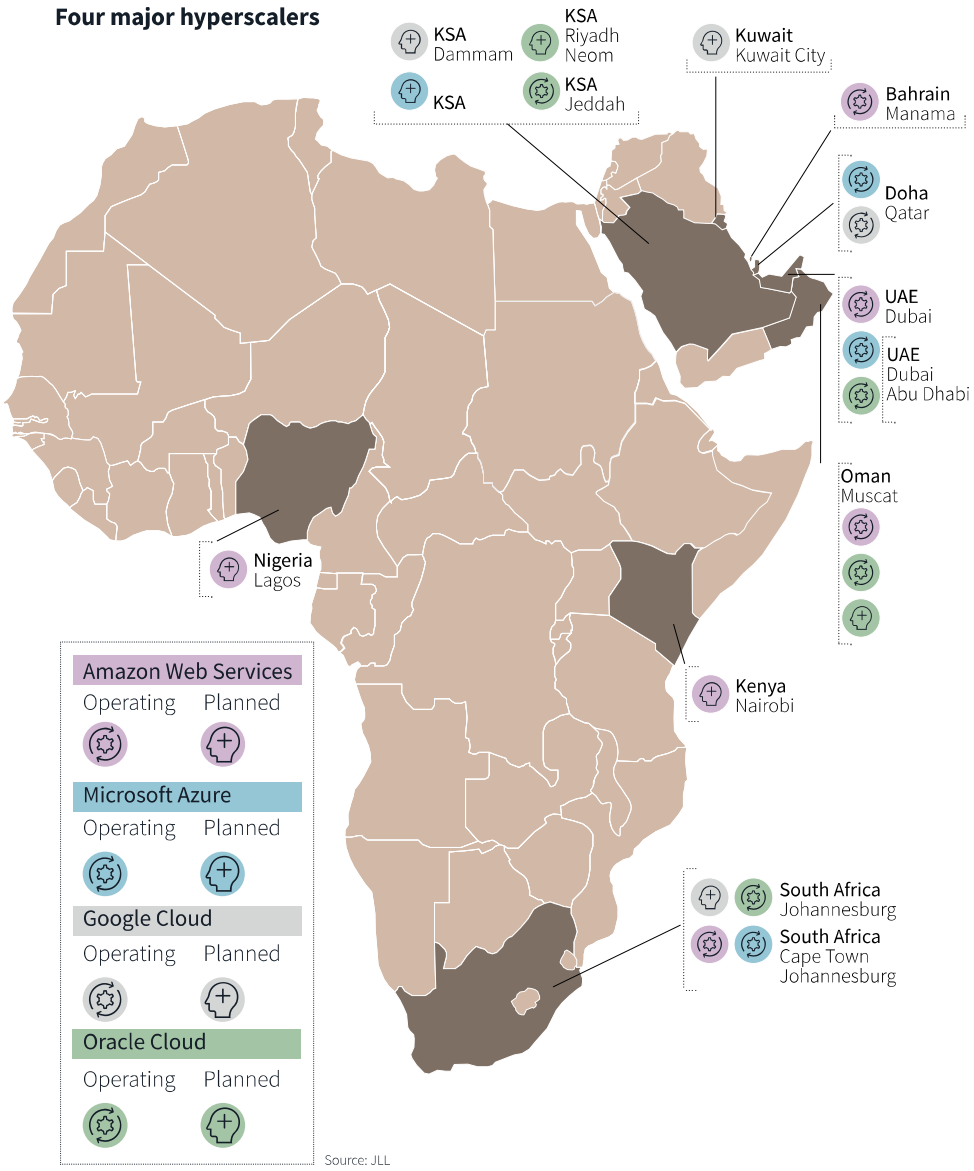
In the **Middle East**, substantial investments have been made by top hyperscale data centre developers and major cloud providers like Amazon Web Services (AWS) and Microsoft. These companies have announced new cloud availability zones, which will be delivered through their data centres. A cloud region is typically formed of three availability zones, which are three clusters of data centres geographically separated in order to provide maximum redundancy.

Currently, the **UAE** stands out as the country with the largest presence of hyperscalers, giving it a competitive edge and making it an attractive destination for further data centre investments. Looking ahead, hyperscalers like Oracle Cloud, Google Cloud, and Microsoft have identified **Saudi Arabia** as a promising market for expanding their cloud services. This recognition positions Saudi Arabia as another compelling investment opportunity in the region, with immense potential for future growth and the establishment of cloud infrastructure.

In Africa, **South Africa** remains the focus of attention, with all major hyperscalers having an established cloud presence and future plans for expansion. As such, AWS plans to invest **USD 1.7 billion** in its cloud infrastructure in South Africa by 2029. Moving to the North, UAE's **Khazna** has announced plans to venture into the **Egyptian** market and deliver the first **USD 250 million** hyperscale data centre.



**Four major hyperscalers**




Source: JLL

## *Data Centre Construction Market Overview and Key Considerations*

The data centre **construction market** in the Middle East and Africa has been increasing steadily over the past few years, and it is expected to continue growing given the notable investor interest in expanding operations into this part of the world. According to Report Linker, the **construction market value for the region is expected to reach USD 4.26 billion in investments by 2028,** with a **CAGR of 8.5%**. That said, various aspects must be considered when **designing**, **constructing**, and **operating** data centres as they could come with many hurdles if not tackled properly. Below are some of the **best practices** to consider and **pitfalls** to avoid for a successful and timely outcome.

### 01 Early identification of the end-user

Planning the data centre's **design** and **execution** is one of the most critical stages of any scheme, as it sets the foundation for the entire project and dictates how the facility will function for years to come. Different hyperscalers or colocation users have specific requirements for power, cooling, fibre network structure, hosting applications, or data storage. Therefore, **identifying** and **securing** the end-users of any data centre and **understanding** their current and future IT needs at the earliest is crucial for a successful and efficient data centre development. Moreover, understanding how the users perceive and manage their facility influences the **project budget, the development of team composition**, and the **expected outcomes**. Therefore, it is essential to thoroughly analyse the user's ownership and operation model before initiating any data centre project.

### 02 Power, utilities and telecom provision

Ensuring early **power provisions** from authorities and the availability of a **telecom infrastructure** that is sufficient to keep pace with future expansion needs of the facility is highly important when choosing the facility location. Similarly, it is helpful to explore **Treated Sewage Effluent (TSE)** and **Clean Water systems** to avoid delays in the construction process. Such due diligence helps ensure the data centre is up and running quickly.

Furthermore, adding **redundancy** and **high availability** features is important as they ensure the facility has high uptime attributes to minimise downtime – any interruption in the data centre's availability. This may involve the need for redundant power sources, network connections and backup systems. Equally important is the development of a detailed plan for the data centre's physical infrastructure, which includes layout, power and cooling systems, cabling, racks and security measures. The design must also consider **energy efficiency** and be **scalable** with the growth of future demand.





### 03 Local law and regulations compliance

Another key consideration is ensuring that an **Affection Plan** (including layout and dimensions) and **Land Lease Agreement** are in place to ensure the data centre project complies with local laws and regulations. These verifications prevent any delays caused by potential legal issues arising further down the line.

It is also critical to establish proper coordination with local authorities and ensure early engagement of **commissioning agents** (CxA), **security, integration** and **operations** teams to ensure timely processing and approval of the required permits.

### 04 Long lead equipment

**Long Lead Equipment (LLE)** is the construction material or equipment that requires long delivery times as it undergoes a manufacturing process and is often faced with supply chain shortages and bottlenecks. One of the most significant lessons learned during the data centre construction phase is the need for the lead contractor to secure **LLE manufacturing slots** at an early stage to avoid delays in receiving the shipment and ensure the timely completion and operation of the data centre facility.

Applying these lessons can help reduce risks, manage costs, and successfully complete data centre projects that ultimately deliver resilient, reliable, and efficient facilities that meet the user's present and future needs and expectations.

# 04
# Future of Data Centres in the Middle East and Africa

## *1. Transitioning from traditional to smart cities*

The concept of **smart city** has revolutionised urban living, with cities in the Middle East and Africa region embracing digital transformation to create intelligent, connected ecosystems. Many economies in the MEA region are in the midst of executing smart cities, which require the deployment of various technological advancements to support their complex infrastructure and services. From 5G networks to AI, edge computing and big data analytics, to name a few, these technologies enable the transformation of traditional cities into intelligent and sustainable urban ecosystems.

**Data centres form the backbone of smart city** infrastructure. They provide the necessary computing resources and storage capabilities to support smart applications such as smart grids, intelligent transportation systems, and sensor networks. Data centres ensure data from diverse sources is aggregated, processed, and made available for decision-making and optimisation, making them indispensable for the functioning of smart cities. In the Middle East, the **UAE** is taking the lead in its smart city initiatives, with Abu Dhabi and Dubai both ranking among the smartest cities in the region and globally. However, **KSA** is expected to closely follow with the various mega and giga projects in its pipeline, including **Neom**, **Qiddiya,** and **King Abdullah Economic City (KAEC)**.

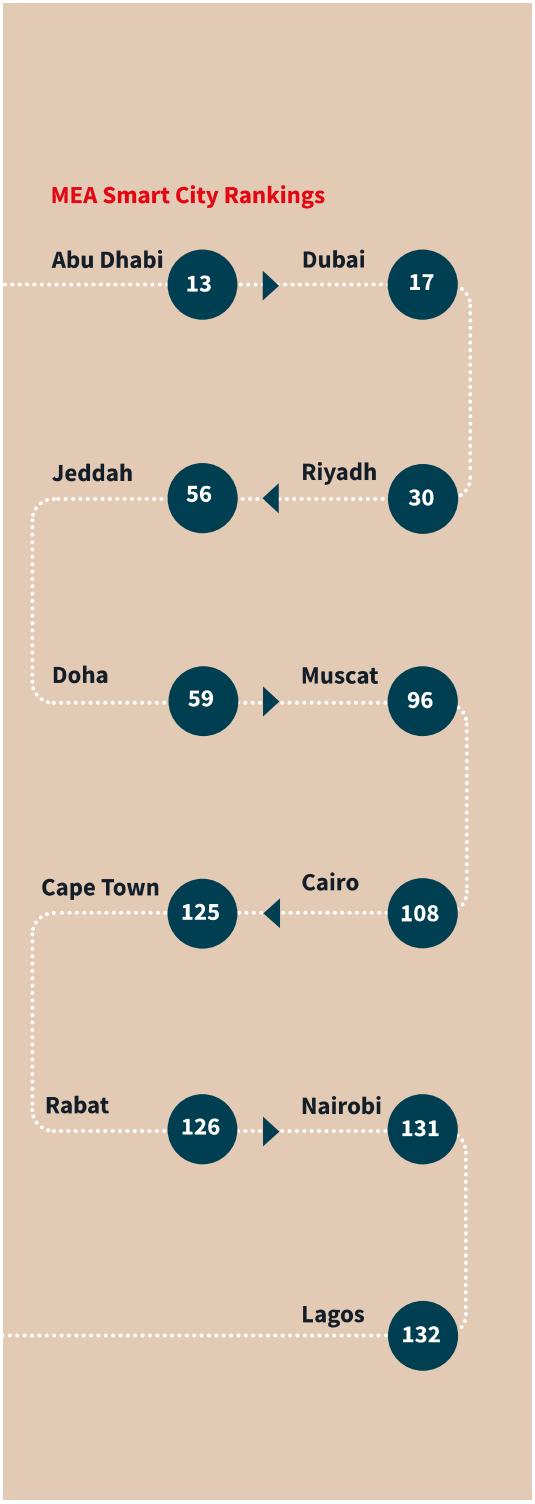




On the other hand, while at a slower pace than the Middle East, **Egypt** and **South Africa** are dominating the African market with their smart city initiatives, actively investing in technology and innovation to create sustainable, efficient, and connected urban environments. The other countries in the region are also pursuing and progressing with their urban innovation programmes; however, more effort needs to be done to enable the rapid transformation of their economies.

The transformation of traditional cities into smart cities marks a fundamental shift in urban living and governance. With data centres serving as the catalyst for urban transformation, the future of data centres in the region promises to be dynamic, resilient, and indispensable for shaping the smart cities of tomorrow.

Source: IMD, Smart City Index Report 2023 (Ranks out of 141) counties)



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## *2. Exploring green data centres as an efficient alternative*

As **environmental sustainability** has become a major milestone that most economies are racing to achieve, the concept of green data centres has emerged as a transformative solution in the data centre industry. In the MEA region, where energy consumption and environmental concerns are significant, green data centres play a major role in driving sustainable development. Green data centres are designed to minimise their environmental footprint by adopting energy-efficient practices, renewal energy integration, and innovative cooling technologies.

**The Middle East and African green data centre market accounts for around 10% of the overall data centres in the region, according to a report by Arizton.**

### Challenges

The growth of green data centres in the region remains hampered by multiple hurdles that must be tackled in order to unlock their full potential. For instance, **water scarcity** poses a significant risk since data centres necessitate water for cooling. This is a challenge notably faced by certain African and Middle Eastern countries, which heavily rely on potable water to operate data centres. Looking forward, addressing this obstacle must be prioritised, especially as the new graphics processing unit (GPU) chips used for high performance AI requirements now require liquid cooling. Other challenges in the MEA region include the **substantial upfront investment cost** for building or retrofitting data centres relative to traditional facilities, the **high dependence on fossil fuels**, which make up the largest share of the energy mix available on the grids that power data centres, and the **unreliable power supply** or **limited availability of renewable energy sources**, specifically in some African economies.

Fortunately, and despite the challenges, the growth of green data centres in the region is gaining momentum and is expected to continue expanding in the coming years. This progress is a result of governments' continuous efforts to achieve sustainability goals and secure international funds for green investments. Furthermore, governments are implementing supportive policies and incentives to attract investments in renewable energy-powered data centres and energy-efficient technologies.

While the extent of adoption may vary across different countries and organisations,

**According to Research and Markets, investments in green data centres are expected to grow at a CAGR of**

**14.81%**

2022 - 2027

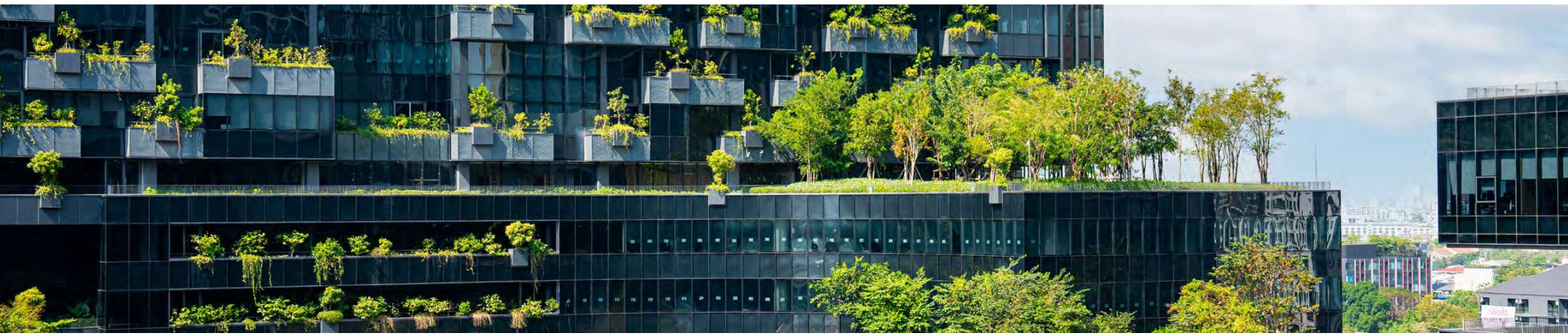
**increasing from**

**$690m → $1.58b**

by 2027

**Equinix, Moro Hub, Digital Realty, and Gulf Data Hub** are among the colocation operators that have made significant investments in operational efficiency, aligning their efforts with sustainability objectives. In the UAE, **Khazna** Data Centre's facilities in Abu Dhabi and Dubai use high-temperature water-cooled chiller systems with the option to initiate free cooling.

**Green data centres** are reshaping the data centre landscape in the Middle East and Africa, paving the way for a more sustainable and environmentally responsible future. Reducing the cost of energy will be a major pillar for driving the growth of data centres in the future. As the region's commitment to environmental sustainability grows, green data centres will play an increasingly vital role in supporting organisations' digital transformation while minimising their carbon footprint.



## *3. Role of the government*

Many governments in the **Middle East** have explicitly highlighted their intention to diversify their economies away from the oil sector to enhance their resilience and stimulate growth, and they have put in place long-term plans to achieve this purpose. For instance, **Saudi Arabia's Vision 2030, the UAE National Agenda, Qatar's National Vision 2030, and Oman's Vision 2040** are all strategies set to reduce dependency on oil, invest in various sectors, including technology, and promote private sector growth to achieve more balanced, innovative, and sustainable economies. Hence, the role of establishing a strong data centre presence has become unprecedented, as they provide the necessary digital infrastructure for sectors to **adapt** and **thrive** in a diversified economy.

### Data Sovereignty

Never the less, the future of data centres will involve navigating a complex regulatory landscape, including **data privacy regulations**, **data sovereignty requirements,** and **compliance frameworks.** Currently, the regulatory framework governing data centre development and operation varies across countries in the region. That said, governments are recognising the importance of data centres as critical infrastructure and implementing policies to attract investments.

Data sovereignty regulations and compliance requirements are gaining prominence in the Middle East and Africa with various governments enacting legislations that mandate the storage and processing of data within their respective jurisdictions to protect sensitive information and ensure compliance with data privacy regulations. This would drive the need for **local data centres that adhere to regulatory requirements**, including data residency and security standards. Collaboration between data centre operators, industry associations, and regulatory bodies will be vital to establish standards that balance data protection and enable seamless operations.

### Data Security

Governments are working to enhance data security frameworks to ensure the safe and reliable operation of data centres. As such, the **UAE** has launched the

**"National Cybersecurity Strategy"**

to enhance the nation's resilience against cyber threats and establish a robust cybersecurity ecosystem.

In **Africa, Kenya** has taken significant steps to improve cybersecurity through the establishment of the

**"National Cybersecurity Strategy"**





### Skilled Workforce

To navigate the future landscape, data centres will require a **skilled workforce** with expertise in cloud computing, cybersecurity, AI, and emerging technologies. The development of local specialised skills and continuous training programs will be crucial to meet the evolving demands of the industry. Collaboration between industry stakeholders, educational institutions, and government initiatives will play a vital role in nurturing a skilled workforce for the future of data centres. Several governments in the MEA region have recognised this opportunity and are working to create a skilled and competitive workforce capable of driving digital transformation, supporting the growth of technology industries, and attract investments.

**Strong cybersecurity measures will become increasingly necessary as the amount of data processed in the MEA region increases. Operators of data centres will need to make investments in cutting-edge security processes and technology in order to safeguard data from online attacks and adhere to ever-stricter data privacy laws. Strengthening cybersecurity measures and data protection regulations is a priority for countries in the MEA region.**

## *4. The emergence of Artificial Intelligence*

As the data centre landscape in the Middle East and Africa continues to evolve, one of the most significant trends shaping its future is the rapid emergence of **artificial intelligence**. AI is a transformative technology that holds immense potential for data centres, offering a paradigm shift in operational efficiency, resource management, and decision-making. AI's transformative capabilities extend beyond the confines of data centre operations, shaping the very essence of how data centres are designed, operated, and demanded in the region.

Several countries in the Middle East and Africa are making significant strides in the field of AI and have emerged as key players in advancing AI research, development, and applications. Some notable examples include:

1. **The UAE** has positioned itself as a regional AI innovation hub, driven by initiatives such as Smart Dubai, Dubai Artificial Intelligence in Health (DAIHL). Moreover, the country's Artificial Intelligence Strategy aims to integrate AI across various sectors, including healthcare, transportation, and government services.

2. **Saudi Arabia** has been actively investing in AI technologies and capabilities. For instance, the Saudi Data and Artificial Intelligence Authority (SDAIA) was established to accelerate AI adoption across government agencies and foster collaboration with the private sector.

3. **In Africa, South Africa** stands out as a leader in AI development and implementation. The country is home to several AI research centres and startups focusing on areas such as natural language processing, computer vision, and robotics.

4. **Kenya** has been embracing AI technologies to address various societal challenges. The country's AI ecosystem is thriving, with start-ups and research institutions working on innovative AI-driven solutions in areas such as agriculture, healthcare, and finance.

5. **Morocco** is another country in the region actively investing in AI capabilities. The country has launched initiatives to promote AI research, development, and education.



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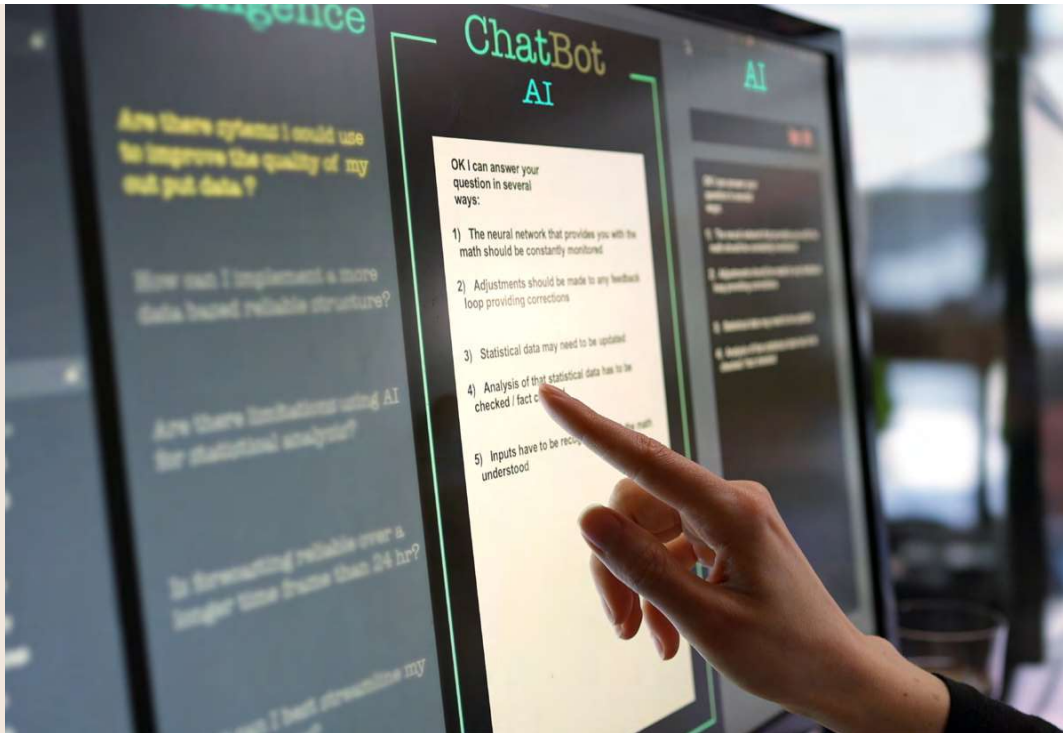
AI's transformative influence spans the entire data centre ecosystem, from demand drivers and operational efficiency to infrastructure **design** and **security**. As businesses increasingly adopt AI-driven applications and services, the demand for data centres will rise. Embracing AI will empower data centres to deliver unmatched **performance, reliability,** and **sustainability**, positioning them as the backbone of the region's digital transformation journey. The symbiotic relationship between AI and data centres will forge a new era of innovation and enable businesses to unlock the full potential of data in the Middle East and Africa.



## Research authors

**Faraz Ahmed**
*Associate, Research, MENA*
faraz.ahmed@jll.com

**Zenah Al Saraeji**
*Senior Analyst, Research, MENA*
zenah.alsaraeji@jll.com

## To find out more about JLL services, contact:

**Jonathan Kinsey**
*Global & EMEA Data Centre Lead*
Jonathan.Kinsey@jll.com

**Tom Glover**
*Senior Director – EMEA Head of Data Centre Transactions*
Tom.Glover@jll.com

**Colm Shorten**
*Senior Director*
*Data Center - Global Strategy & Innovation*
Colm.Shorten@jll.com

**Daniel Thorpe**
*Associate Director, EMEA Data Centre Research Lead*
Daniel.Thorpe@jll.com

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