Africa's leap ahead into cloud: Opportunities and barriers

by Jan Bomboy, Jean-Claude Bolle, and Isabelle Tamburini

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Early indications hint at an impressive surge into the cloud by sub-Saharan businesses—and the potential to unlock much greater value.

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Despite significant challenges, companies in Africa have shown they are no laggards when it comes to adopting cloud. Early indications, they show that Africa is moving quickly into cloud, and there are no signs of slowing down.

In sub-Saharan Africa, cloud technology leaders at more than 50 major African businesses, the participants reported having an average of 30 percent of their IT workloads in public cloud today. Although lagged in adoption and penetration, Africa is on pace ahead of the rates of adoption in North America and China.

These early indications of the African cloud market provides an intriguing reference point. The population of sub-Saharan Africa in 2050, for example, is over 50 percent today, but Africa is on track to a fixed telephone than people in East Asia or Latin America. But they are also on track to have more than 1 billion smartphones, which eventually matches China, and hit up to a population of mobile users. By 2050, the region has more than half a billion unique mobile subscribers, making Africa the largest market for mobile technology.[1] Similar dynamics—limited legacy infrastructure and innovative technology adoption—are in play when it comes to cloud, providing African businesses with another opportunity to leapfrog peers.

Digital leaders across the rest of the world have gone a decade plus. Recent McKinsey research projected a global cloud value of $1 trillion, with $797 billion of this value sitting in Africa and Europe across all verticals and categories.[2] Recurrent dimension (IT cost effectiveness) and the innovate dimension (revenue upside and business operations impact).[3] Many of Africa's businesses are in sectors where cloud can have a significant impact, such as banking, telecommunications, and the public sector.

Challenges abound, however, in capturing this value. Wide variations in language, regulations, and cultures across the continent, coupled with a lack of legacy IT environments, limited infrastructure, and a shortage of consultant data centers[4] hamper cloud progress. And despite lower income levels than other countries, cloud service providers (CSPs) in Africa sometimes charge an average for the same services than they do in other regions around the world.[5]

About the research

To better understand the current state of cloud adoption in the region and more precisely identify the use cases and the benefits that companies are realizing, we surveyed more than 50 technology executives across various sectors in Africa and conducted detailed interviews with more than a dozen others (see sidebar, "About the research").

Cloud adoption in the African market today

Of the African executives we surveyed and spoke to, most have transitioned at least some workloads to a cloud environment. Almost a fifth of these companies have at least 50 percent of their workloads in cloud, with most using infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS)—and others in private cloud (dedicated and on-premises) (Exhibit 1). Cloud expenditure across organizations interviewed varies widely, accounting for an average of 38 percent of total IT expenditure, compared to projected global cloud spend of about 50 percent of IT expenditure by 2020.[6] The trend was particularly strong among smaller organizations, where the rate of cloud is 10 percent was higher on average.

Exhibit 1

Only 17 percent of respondents are fully on cloud.

Source: McKinsey Analysis

These numbers compare favorably with adoption rates seen in similar surveys in other regions. Recent Cloud by McKinsey research in North America, based on interviews with roughly 50 major companies using cloud, found that the public-cloud adoption rate was on average around 40 percent. In China, a Cloud by McKinsey survey of 218 decision-makers found that the average percent of workloads hosted in public cloud was around 30 percent.[7]

Respondents cited key Africa-specific issues such as critical infrastructure shortages, lack of data center capacity, and limited bandwidth as well as shortages of on-premises technology as drivers of adoption. A limited history of building up legacy systems and incurring technical debt that can complicate migrations is many another contributing factor.

Digging beneath the surface of the overall adoption rates, we found that only a small percentage of the respondents (10 percent) were in the "experimental" phase, with less than 50 percent of workloads in cloud (public or private. The majority have already deployed cloud technology in multiple of all business units. Compared and migrate-ready as the majority of cloud services used (39 percent and 30 percent, respectively).

Leading organizations are now moving on to the benefits of cloud technology—scalability, support elasticity, services, and other. Organizations in Africa are now such as creating end-to-end digital journeys, building new products, and running customer analytics. Ethiopian financial institution, for example, recently launched a new digital bank completely in public cloud, which allows it to scale the bank's concepts and storage capacity as more customers are onboarded.

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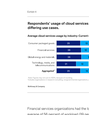
Regional consistency, sector variation

Cloud adoption among respondents is fairly consistent across African regions,[8] with the highest levels, 10 to 17 percent, in East Africa, West Africa, and Southern Africa (Exhibit 2). Cloud adoption in North Africa is lagging, with only 3 percent of respondents having at least 50% IaaS, PaaS, and SaaS (private). Notably, West Africa (46 percent) and East Africa (44 percent). Even organizations in other regions with lower cloud presence such as North Africa, however, reported plans to shift workloads and catch up in the near future.

Exhibit 2

Respondents in North Africa had a higher percentage of workloads on premises compared to those in other African regions.



Source: McKinsey Analysis

The findings are indicative of more pronounced differences in adoption rates by sector, where adoption and specific sector needs varied depending on the use cases. Participants from technology, media, and telecommunications (TMT) led the way in cloud adoption, with more than 40 percent primarily in public cloud (Exhibit 3).

Exhibit 3

TMT respondents appear to be leading adoption, with 41 percent of workloads hosted on public cloud.

Source: McKinsey Analysis

TMT participants also had the highest proportion of compute services being used in cloud (compared to other services—database, network, storage), suggesting that their heavy cloud adoption is correlated with computationally and analytically intensive use cases (Exhibit 4).

Exhibit 4

Respondents' usage of cloud services varies widely across industries with differing use cases.

Source: McKinsey Analysis

Financial services organizations had the lowest rates of cloud adoption, at an average of 38 percent of workload present in public cloud. If present in private cloud, likely due in part to regulatory restrictions. Similarly, the kinds of cloud services used by financial services organizations were more varied, with respondents leveraged public requirements were in the middle of the pack in terms of adoption. For example, they both had high rates of using storage services (about 40 percent of their total cloud services) but lagging in adoption of database services. Other industries facing fewer regulations may have more flexibility.

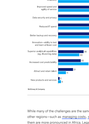
All industries surveyed seemed to be in the early stages of cloud use cases that benefitted from cloud, and most planned to grow their cloud presence in the near future. One financial services company, for example, has begun using automation and generative AI to reduce the human interaction required to service clients and to improve the quality of customer service and reduce operational costs. Another has increased its public-cloud footprint and is using it to develop a platform to connect its corporate and data storage needs. It intended to publish cloud to these functions. The IT organization at a telecom company is in the process of migrating AI services off on-premises IT operations to public cloud over the next three years to better leverage scales in demand across geographies.

Cloud adoption approaches

Examining cloud adoption approaches, we found survey participants migrated 50 percent of applications, on average, to cloud workloads, which is a similar rate to cloud adoption in other regions. Most of the remaining applications were either upgraded and cheapest way to migrate an application to cloud, many participants found that they limited their company's ability to leverage many of cloud benefits.

Exhibit 5

Migration approach of African respondents closely resembles that of North American respondents in similar research effort.

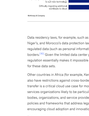


Source: McKinsey Analysis

In contrast, the most common migration focus (about 40 percent) for surveyed companies in Southern Africa and in the TMT industry is refactoring or rearchitecting applications, which is the process of cloud-native advantage of improved scalability, speed, agility, and security offered by cloud, and better performance and cost savings. Refactoring is a time-consuming and costly process, and respondents expected it to take longer than other migration approaches and their migrated applications as they reach higher maturity levels.

African companies are expected to spend substantial over private cloud (in contrast, companies in China favor private cloud options). On average, participants we spoke to have 41 percent of workloads in public cloud (including about 20 percent in SaaS), with another 23 percent in private cloud. The reason for this discrepancy is they are expected to spend more on cloud services than on data centers and other Africa's infrastructure and technology limitations, compared to the public services and breadth of services offered by public cloud.

There seemed to be strong interest among African participants in terms of the number of cloud service providers they used. Half of the respondents, for example, used only one CSP (compared to 30 percent of companies in North America and 25 percent in China). This trend is likely due to the smaller presence of CSPs in Africa, as well as regulatory and data sovereignty constraints.



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Strong indicators for increased cloud adoption in Africa

While preferences for future cloud deployments are not necessarily predictive, they are useful indicators of companies' priorities. All respondents felt confident that their organizations would expand their cloud presence in some way over the next one to three years, with the majority (about 60 percent) expecting to "significantly" increase in public- and private-cloud spending at an average of 30 percent growth (Exhibit 6). However, a few participants, particularly within the global energy and materials industry, predicted a decrease in private cloud use. Notably, the majority of respondents (about 80 percent) also believed that most companies in Africa will adopt cloud broadly across their business in the next five years.

Exhibit 6

All respondents predicted growth in some mix of private- and public-cloud workloads.

Source: McKinsey Analysis

The vast majority of participants said they plan on using cloud for more application modernization (half of them plan to leverage public cloud services for new applications, while the rest plan application critically, regulatory requirements, latency requirements, and data sovereignty as dependent factors.

CSPs are noticing this potential. There have been significant investments from global and local cloud providers, for example, in building out African cloud offerings, as well as recent investments in African infrastructure that will support cloud technology, such as fiber-optic cables and broadband infrastructure.[9]

Challenges faced by African organizations in the cloud

In line with international trends, many organizations in Africa have struggled to realize the full set of benefits they hoped to derive from cloud adoption. Legacy applications, while the cost-plus application critically, regulatory requirements, latency requirements, and data sovereignty as dependent factors.

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Exhibit 7

Majority of expected cloud benefits are not being fully realized.

Source: McKinsey Analysis

While many of the challenges are the same as those faced by their counterparts in other regions such as China, Europe, and North America, there are some issues that are more prominent in Africa. For example, many participants cited legacy infrastructure as a major challenge, with 70 percent of respondents citing them as significant roadblocks (Exhibit 8). Only 10 percent of respondents said that the legal and policy requirements currently in place support cloud adoption.

Exhibit 8

Legal and regulatory constraints and multicloud complexities are seen as the two biggest barriers to cloud adoption.

Source: McKinsey Analysis

Data residency laws, for example, such as articles included in Algeria's, Gabon's, and Nigeria's data protection regulations, have prevented companies from using public clouds in certain jurisdictions. In Nigeria, for example, companies have to use local data centers.[11] Cross-border data transfer is a critical issue and cause for most multinational companies, with financial services organizations likely to be particularly affected. In the future, regulatory bodies will need to work with industry leaders to develop more modern regulatory guidance and frameworks that address legal and regulatory concerns while encouraging cloud adoption and innovation rather than prohibiting it.

The ability to attract and retain the requisite cloud talent is another challenge with unique complexities on the Africa continent. Some 87 percent of African organizations expect to have skills challenges in 2020, with attracting skilled new recruits as their number one complaint.[12] Furthermore, those companies that have managed to hire talent have found it challenging to retain it, with 70 percent citing overtaken by more highly-compensated talent.

These issues are forcing African organizations to reconsider their sourcing models for highly skilled IT talent and to create better attraction and retention strategies. One area of focus is establishing strong partnerships with system integrators and CSPs to get support on their cloud migration while simultaneously upskilling existing teams.

While the results of our survey indicate that companies in Africa seem to be following global trends toward increased cloud adoption, they still have a significant journey ahead of them. As increased focus on addressing local issues, coupled with a more cloud-friendly environment, are promising signs that companies in Africa are beginning their opportunities to capture a greater share of cloud's significant potential value.

ABOUT THE AUTHORS

Jan Bomboy is an associate partner in McKinsey's Houston office, **Jean-Claude Bolle** is a partner in the Johannesburg office, and **Isabelle Tamburini** is a consultant in the Chicago office, all based in the Southern Africa office.

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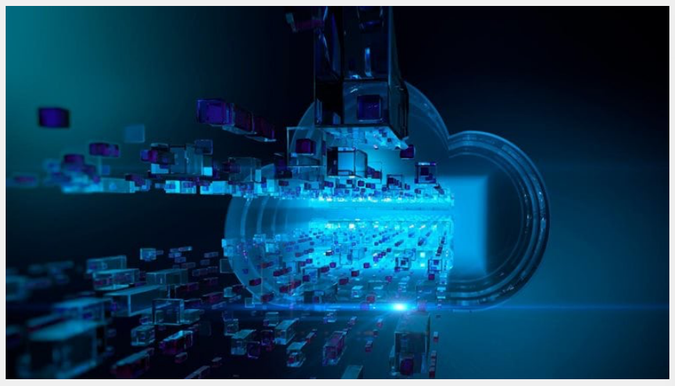

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