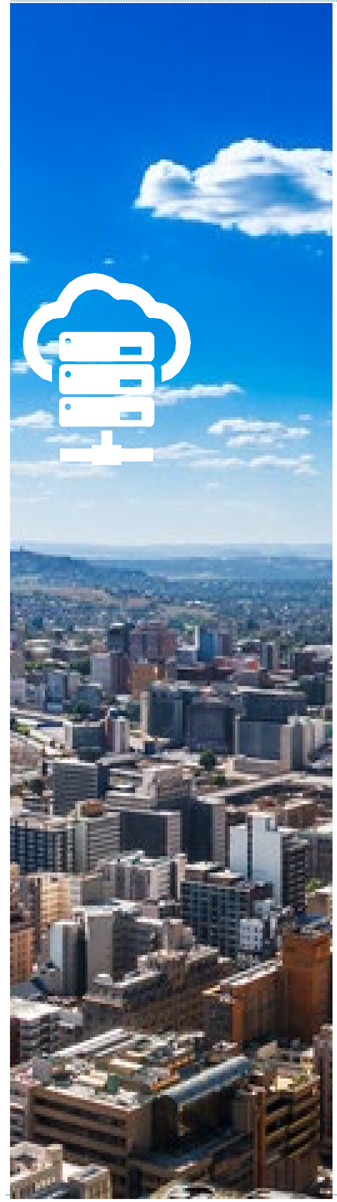
THE RISE OF THE AFRICAN CLOUD

AZURE, AWS, VMWARE AND THE BATTLE TO TRANSFORM AFRICAN ENTERPRISE MARKETS

Report summary & table of contents

MARCH 2019

The rise of the African cloud



- **The African cloud has arrived.** By the end of the year 2019, at least four hyperscale data centers will become operational in the African continent, offering hundreds of enterprise and consumer services from within Africa's shores. At least two more are expected in 2020, as the battle between global cloud providers intensifies, with Microsoft, AWS, Google, Huawei or VMWare all jockeying for contracts to build the African cloud.

- **Africa is a tricky place for cloud services, to be sure.** Many countries don't have broadband speeds adequate, and affordable enough to support reliable cloud service usage. Where cloud services are built upon a reliance on third party providers, provider distrust is deeply ingrained in many African enterprises, having been nurtured by decades of failing underlying infrastructure, promises not kept, and SLAs often barely worth more than the paper they're written on. Where the public cloud thrives on an open, decentralized Internet, many African governments profess a preference for a more centralized, monitored model – and some are prone to shutting down the Internet altogether.

- **As is typically the case in Africa, however, shortcomings as above also point to considerable opportunity. Look beyond the obstacles, and the picture emerges of a unique occasion to build the foundations for Africa's ability to enter the fourth industrial revolution.** While the cloud services sector is in its early stages of development, the impact of cloud services is already far-reaching. African banks are making investments in machine learning and artificial intelligence tools to improve the customer experience and credit risk; new "digital banks" are emerging, that are, at least in part, cloud-based. In Kenya, government-managed Huduma centers are using VMWare's virtualized infrastructure to enhance public service delivery. Large retail firms are using compute capabilities and AWS databases to transform how they reach a predominantly mobile and digital customer base. And scores of African cloud-native startups are leveraging the cloud to disrupt entire industry sectors.

- **The African cloud may be small, but it is already here indeed, and it is growing fast**. For African markets, cloud, virtualization and the broader evolution towards serverless computing are the most disruptive technology developments since the advent of the mobile payment revolution. Few other segments in the African ICT space are as likely to generate an incremental $2bn in top line revenue over the next five years, and at least as much in adjacent enabling ecosystem revenue. And in true African fashion, market dynamics are not uniform. At the same time AWS and Huawei were announcing cloud services to be offered from South Africa, French cloud services provider OVH was closing its Dakar-based West Africa office, citing low service take-up.

- **This report is about the near term economic, commercial and investor value opportunity offered by the rise of the African cloud.** Building on Xalam's established analysis of African enterprise and digital infrastructure markets, 18 months of research and 100+ interviews and conversations, The Rise of the African Cloud explores the readiness of African markets for thriving private and public cloud services; it analyzes cloud demand and use case patterns, at segment level, from financial services to the public sector and startups; it estimates and projects cloud services market size; it details the competitive strengths of global hyperscale cloud providers and how their battle is translating in the African context; it outlines the impact of cloud services on Africa's managed service provider ecosystem and telcos' evolving enterprise businesses; and it breaks down the investment case within the African cloud value chain, from enterprise connectivity to data centers and SaaS.

- **This report does not pretend to have all the answers. But it does pretend to offer, at long last, the most comprehensive picture available on African cloud services markets.**

Xalam Analytics

They are using the African cloud

SidianBank
NEDBANK
Pick n Pay
M-KOPA SOLAR
ONEFi
PAYGATE
Ecobank
The Pan African Bank
Standard Bank
SPAR
TUSKYS
Pay less, get more, Everyday
we farm
nomanini
Interswitch
huduma
KENYA
LUNO
EQUITY
Bank
The Listening, Caring Financial Partner
Diamond
Your Bank
You need it, We've got
NAKUMATT
SITA
Mukuru
sign up, send it, sorted!
Genghis Capital
Investment Bank
CANDANDO
LifeQ
Kytabu
NSIA
BANQUE
health
Department:
Health
REPUBLIC OF SOUTH AFRICA
Bank Zero
mutual bank
be the change
KCB
Making the Difference
NAIROBI CITY COUNTY
Career Junction.co.za
Better jobs. More often.
GEORGE
THE CITY FOR ALL REASONS
JRA
konga.com
OLX
TymeBank
Pineapple
JUMO
harambee
YOUTH EMPLOYMENT ACCELERATOR

PART I

BREAKING DOWN AFRICA'S READINESS & DEMAND FOR CLOUD SERVICES

PART II

THE NUMBERS: HOW BIG, AND WHERE IS THE VALUE IN THE AFRICAN CLOUD OPPORTUNITY?

PART III

WHO WILL WIN THE AFRICAN CLOUD? A MARKET COMPETITIVE ANALYSIS

PART IV

THE MARKETS: KEY COUNTRY FOCUS ANALYSIS

TABLE OF CONTENTS

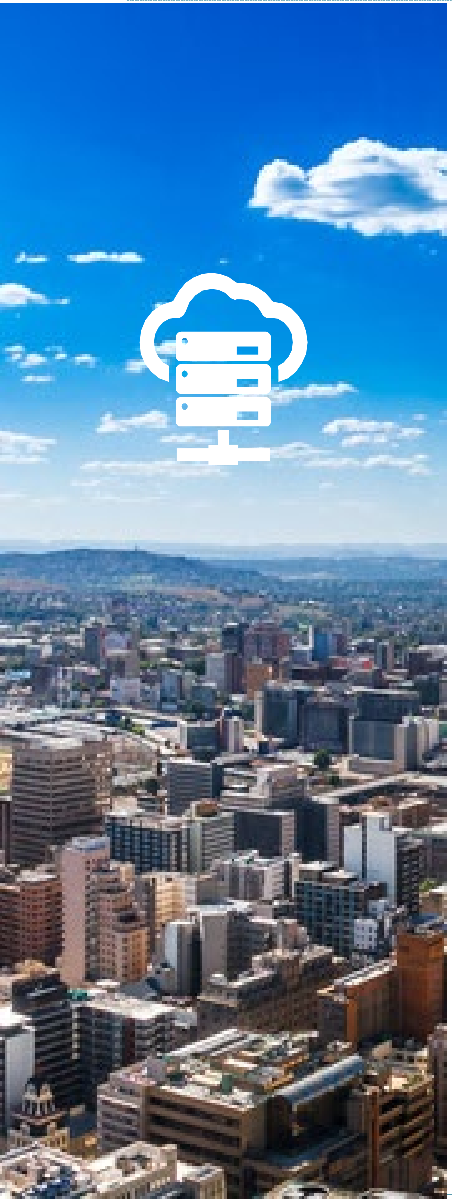
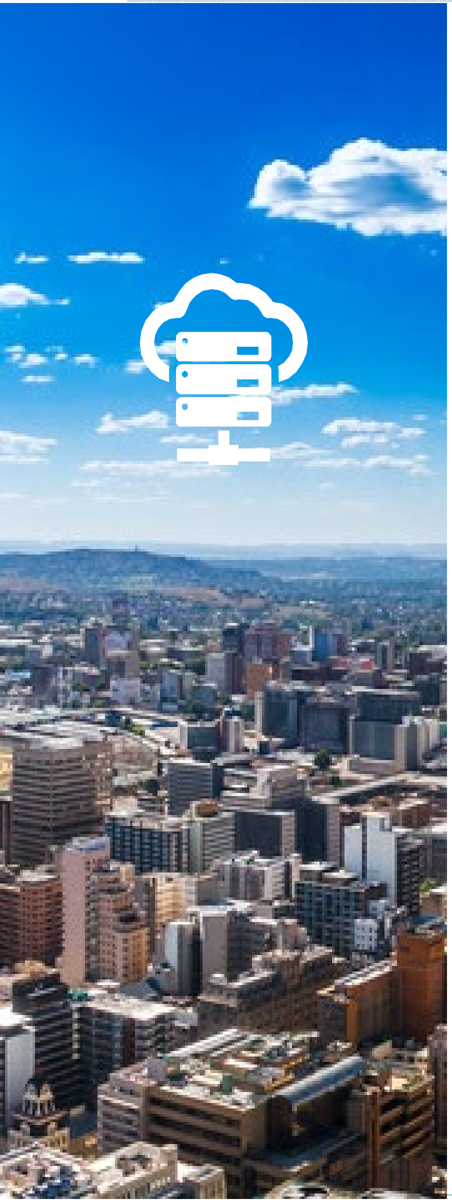


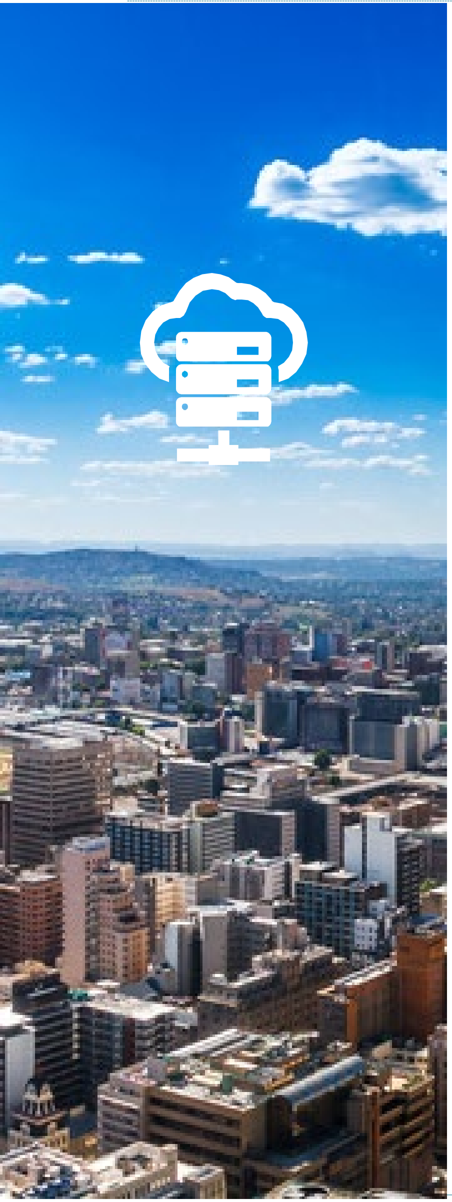
TABLE OF CONTENTS

Xalam Analytics

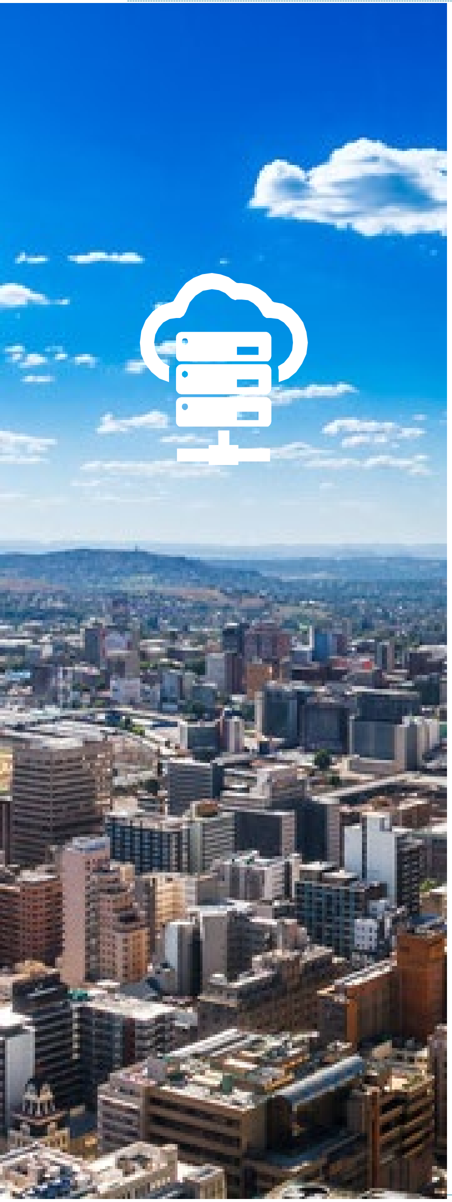


PART IV COUNTRY ANALYSIS

KEY CHARTS & FIGURES



Markets & companies covered in this report



This report focuses on Africa at a broad level, with countries covered at varying levels of depth. Countries and players covered are as follows:

MARKETS COVERED WITH GOOD DEPTH

- The core analysis of the report is driven by insights and data generated primarily from these markets;
- We provide a country-focused analysis of the cloud market, key players, revenue outlook;
- Specific country-focused profile, key trends, projections and other analysis:

- South Africa
- Nigeria
- Kenya
- Ghana
- Cote-d'Ivoire
- Egypt
- Morocco

OTHER MARKETS COVERED

- The core analysis of the report is driven by insights and data generated primarily from these markets;
- Key trends and dynamics are explored and highlighted throughout the report - but no specific country profiling

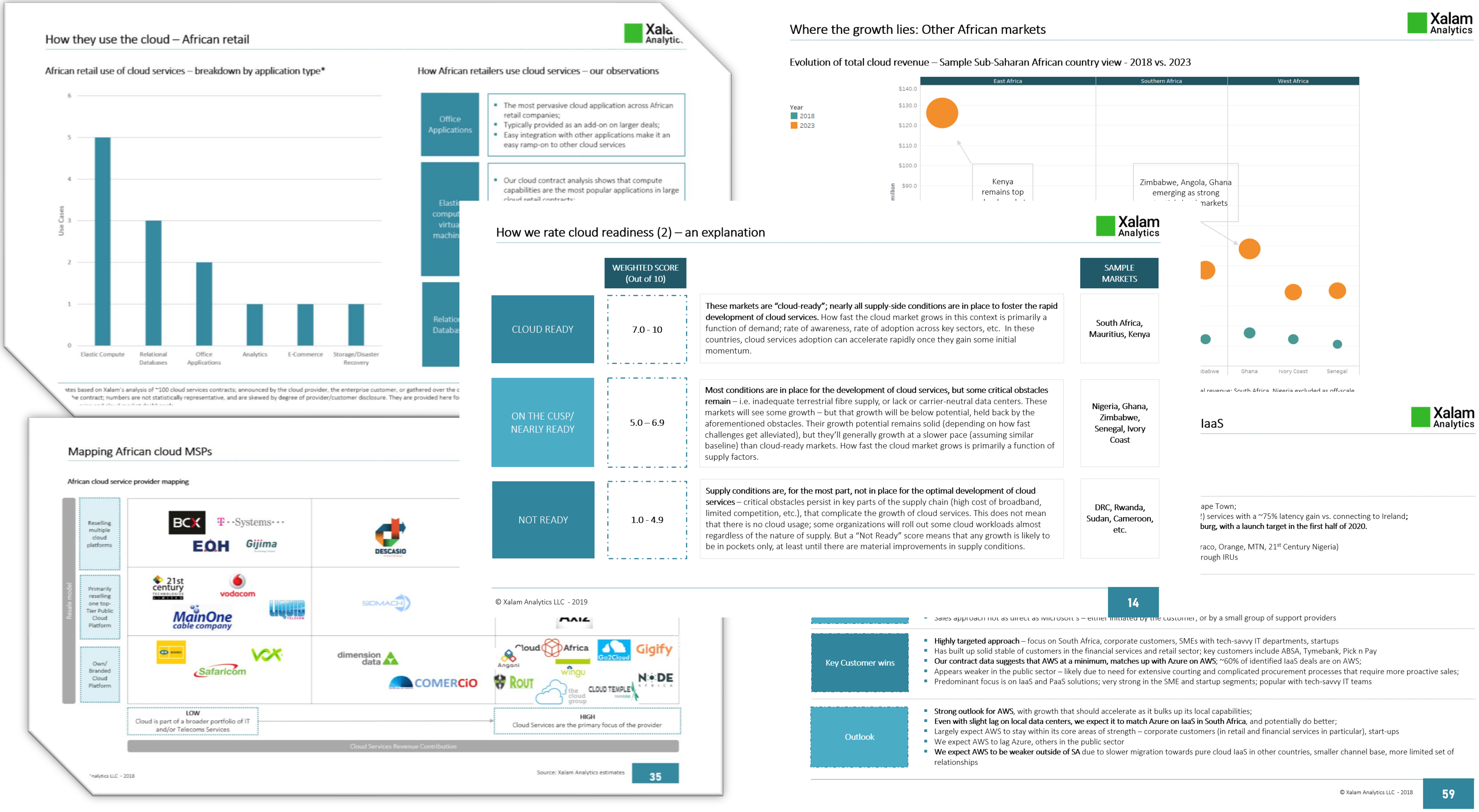
- Tunisia
- Senegal
- Tanzania
- Uganda
- Angola
- Zimbabwe

COMPANIES MENTIONED

- 21st Century Limited
- Absa
- Amazon Web Services
- Angani
- Bank Zero
- BCX
- Cloud Africa
- Cloud Temple
- Comercio Nigeria
- Descasio
- Digital Ocean
- Dimension Data/Internet Solutions
- Dotmodus
- Equity Bank
- Gijima
- Globacom
- Google
- Huawei
- IBM
- Inwi Business
- Konga
- Liquid Telecom
- MainOne
- Maroc Telecom
- Microsoft
- M-Kopa
- MTN Business
- Nedbank
- Node Africa
- Nutanix
- OLX
- Oracle
- Orange Business Services
- OVH
- Pick n Pay
- Routed
- Safaricom
- Sage
- Siatik
- Sidian Bank
- Sidmach
- SITA South Africa
- Spar Group
- Telecom Egypt
- Teraco
- Tymebank
- VMWare
- Vodacom Business

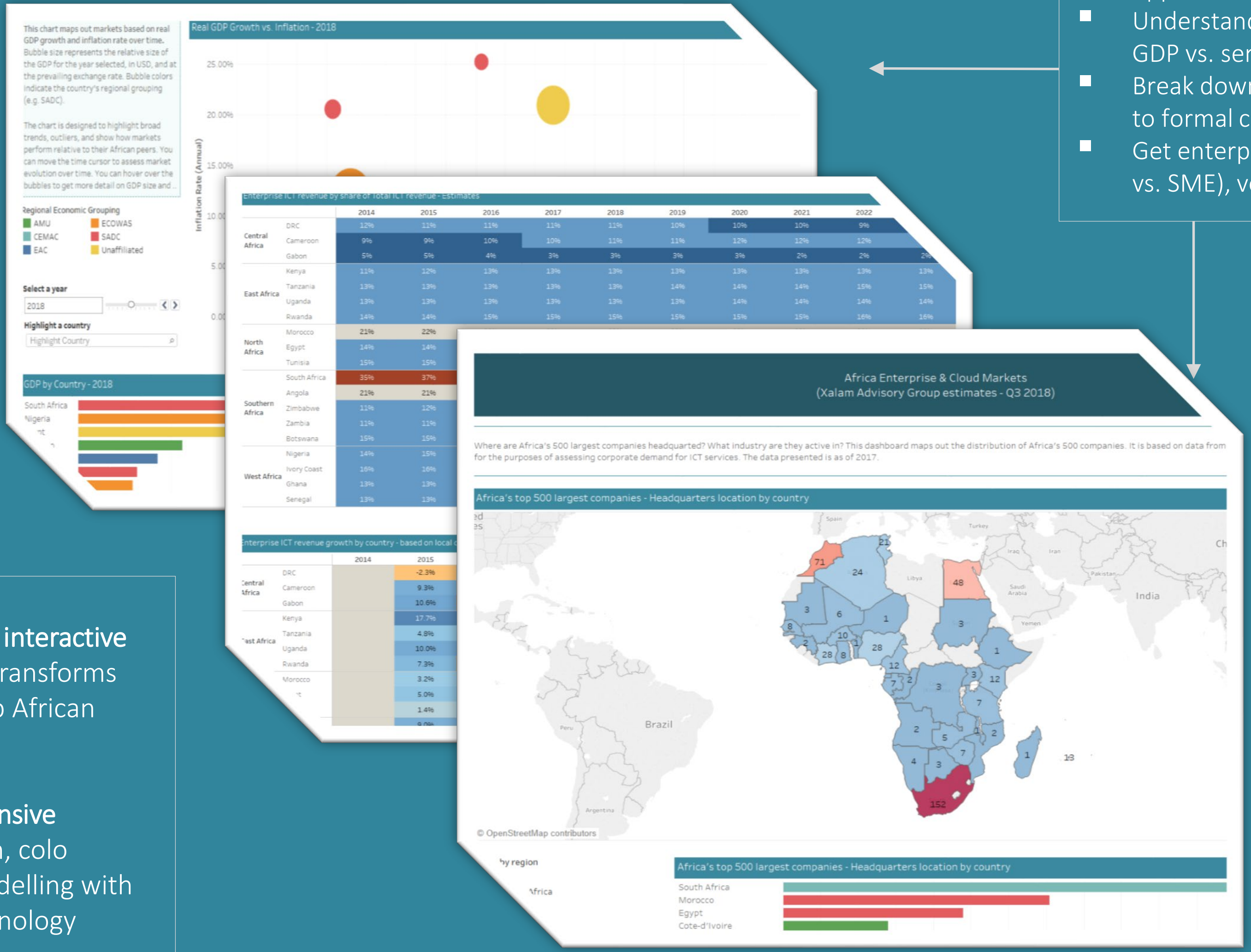
Our Views in 10 Questions – And Where to Find Them

Do African markets have the adequate infrastructure to support cloud services?	See Pages 20-23
What are the current levels of cloud adoption in Africa?	See Pages 25-26
What industry segments use cloud services the most, and for what purpose?'	P. 27-38
How big exactly is the African cloud services market?	P. 41-42
Where are Africa's largest cloud markets?	P. 43-44
What is the revenue upside for African cloud services?	P. 46-48
Where is the revenue upside for African cloud services?	P. 49-52
How do hyperscale cloud providers stack up in Africa?	P.57-68
Will global cloud players wreck the African MSP market – or will they rejuvenate it?	P. 69-77
Where is the investor value in the African cloud?	P.53-56


How they use the cloud – African retail
African retail use of cloud services – breakdown by application type*
How African retailers use cloud services – our observations
Office Applications
The most pervasive cloud application across African retail companies;
Typically provided as an add-on on larger deals;
Easy integration with other applications make it an easy ramp-on to other cloud services
Our cloud contract analysis shows that compute capabilities are the most popular applications in large
Use Cases
Elastic Compute
Relational Databases
Office Applications
Analytics
E-Commerce
Storage/Disaster Recovery
Where the growth lies: Other African markets
Evolution of total cloud revenue – Sample Sub-Saharan African country view - 2018 vs. 2023
Year
2018
2023
East Africa
Southern Africa
West Africa
Kenya remains top
Zimbabwe, Angola, Ghana emerging as strong
Ghana
Ivory Coast
Senegal
How we rate cloud readiness (2) – an explanation
WEIGHTED SCORE (Out of 10)
SAMPLE MARKETS
CLOUD READY
7.0 - 10
These markets are "cloud-ready"; nearly all supply-side conditions are in place to foster the rapid development of cloud services. How fast the cloud market grows in this context is primarily a function of demand; rate of awareness, rate of adoption across key sectors, etc. In these countries, cloud services adoption can accelerate rapidly once they gain some initial momentum.
South Africa, Mauritius, Kenya
ON THE CUSP/ NEARLY READY
5.0 – 6.9
Most conditions are in place for the development of cloud services, but some critical obstacles remain – i.e. inadequate terrestrial fibre supply, or lack or carrier-neutral data centers. These markets will see some growth – but that growth will be below potential, held back by the aforementioned obstacles. Their growth potential remains solid (depending on how fast challenges get alleviated), but they'll generally growth at a slower pace (assuming similar baseline) than cloud-ready markets. How fast the cloud market grows is primarily a function of supply factors.
Nigeria, Ghana, Zimbabwe, Senegal, Ivory Coast
NOT READY
1.0 - 4.9
Supply conditions are, for the most part, not in place for the optimal development of cloud services – critical obstacles persist in key parts of the supply chain (high cost of broadband, limited competition, etc.), that complicate the growth of cloud services. This does not mean that there is no cloud usage; some organizations will roll out some cloud workloads almost regardless of the nature of supply. But a "Not Ready" score means that any growth is likely to be in pockets only, at least until there are material improvements in supply conditions.
DRC, Rwanda, Sudan, Cameroon, etc.
© Xalam Analytics LLC - 2019
14
Mapping African cloud MSPs
African cloud service provider mapping
Resale model
Reselling multiple cloud platforms
Primarily reselling one top-Tier Public Cloud Platform
Own/ Branded Cloud Platform
LOW
Cloud is part of a broader portfolio of IT and/or Telecoms Services
HIGH
Cloud Services are the primary focus of the provider
Cloud Services Revenue Contribution
Source: Xalam Analytics estimates
35
IaaS
Key Customer wins
Highly targeted approach – focus on South Africa, corporate customers, SMEs with tech-savvy IT departments, startups
Has built up solid stable of customers in the financial services and retail sector; key customers include ABSA, Tymebank, Pick n Pay
Our contract data suggests that AWS at a minimum, matches up with Azure on AWS; ~60% of identified IaaS deals are on AWS;
Appears weaker in the public sector – likely due to need for extensive courting and complicated procurement processes that require more proactive sales;
Predominant focus is on IaaS and PaaS solutions; very strong in the SME and startup segments; popular with tech-savvy IT teams
Outlook
Strong outlook for AWS, with growth that should accelerate as it bulks up its local capabilities;
Even with slight lag on local data centers, we expect it to match Azure on IaaS in South Africa, and potentially do better;
Largely expect AWS to stay within its core areas of strength – corporate customers (in retail and financial services in particular), start-ups
We expect AWS to lag Azure, others in the public sector
We expect AWS to be weaker outside of SA due to slower migration towards pure cloud IaaS in other countries, smaller channel base, more limited set of relationships
© Xalam Analytics LLC - 2018
59

The analysis in this report is powered by the Xalam Africa enterprise & Cloud dashboards

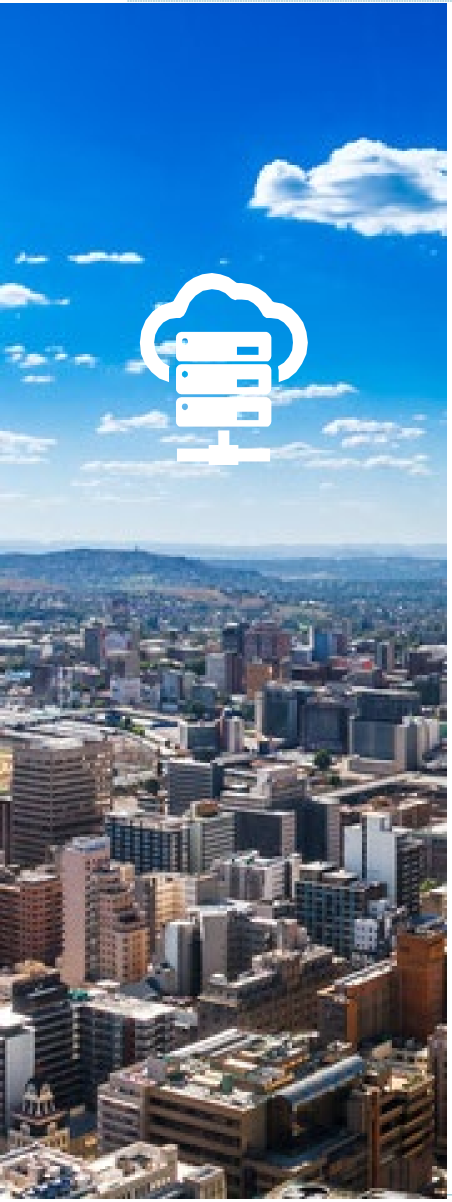
- Get an unprecedented view of the African B2B ICT opportunity;
- Understand market economic structure (e.g. agriculture GDP vs. services GDP),
- Break down B2B demand structure, from informal sector to formal corporate demand;
- Get enterprise revenue by service, segment (corporate vs. SME), vertical and more



- **Africa Public Cloud Revenue** – Hybrid vs. Public cloud, view by key category (IaaS, PaaS, SaaS), view by demand segment;
- **Detailed view of Africa's Top 500 companies**, by country, sector, etc.
- Access to the Xalam Africa cloud contract tracker

- **A powerful, AWS-based, interactive visualization tool** - that transforms how you see and absorb African market data
- **Combining years of extensive research,** data collection, colo market analysis and modelling with the latest analytics technology
- **Flexible access options**

Request a demo today – hello@xalamanalytics.com



Standard

1-5 Users

US$ 1,500

Report Delivered in PDF Format

Including:
125 pages
~65 Charts & Visuals

Premium

Enterprise-wide Licence

US$ 2,000

Package delivered in PDF, Excel, Winzip or Box, including:

Enterprise-wide Licence

Report in PDF – 125 pages & 65 Charts & Visuals

A 20 Slide Executive Synopsis

50+ Charts with underlying chart data in Excel format

Xalam Analytics

Reimagining African digital infrastructure data and insights. Xalam.

@xalamanalytics
www.xalamanalytics.com