

The Growing Role of Cloud in Africa's Burgeoning Fintech Sector





Introduction

The launch of Safaricom's M-Pesa in 2007 sparked a slew of innovation from bright entrepreneurs and researchers across Africa working to address one of the continent's largest inefficiencies: money. In 2007, you could count the number of fintech startups in Africa with a single hand, today the number of active fintechs operating across Africa is reported to be nearly 1,000 according to Briter Bridges.

Over the years, the African fintech ecosystem has witnessed substantial change with early innovation focusing on payment gateways and mobile money, the industry is now seeing acceleration across several different sub-sectors including InsurTech, InvesTech, RegTech, and Digital Assets (i.e., Blockchain & Cryptocurrency).

Fintech applications and companies require a high level of agility and responsiveness from their systems for the scale and expansion. The availability and growing utilization of cloud services like AWS are playing a key role in enacting the visions and strategies of countless African fintech startups.

Leveraging cloud in one's business model provides startups with valuable tools to operate lean hardware models, processing & tracking payments, storing crucial & sensitive data necessary for KYC, along with a plethora of other services, in turn enabling founders to save time, money, and bandwidth.

This white paper explores the evolution of Africa's fintech industry and the ecosystem enabler role that cloud service providers are actively playing across Africa.

The State of Africa's Fintech Industry

The fintech industry has witnessed a radical change in recent years - comparing the 2018 ecosystem to the 2022 ecosystem is truly an apples to oranges comparison. There are four key factors that have contributed heavily to the industry's acceleration in recent years.

1. African fintech emerging as a global asset class

Investing in African companies is quickly losing the misguided stereotypes it used to carry with international investors. From the qualitative perspective of the Africa Fintech Summit over the years, in 2018 we would often get questions from US investors in particular asking, "Why does this matter," and "Why should we be involved?" Since then, this has changed considerably; when the team speaks with foreign investors, rather than asking us why they should be involved, they ask "How can we be involved?"

According to data sourced from the African Private Equity & Venture Capital Association (AVCA), 2021 witnessed \$5.2B USD in startup funding going to 604 different companies in a variety of different verticals. With an average deal size of \$1.4M USD, much of the investor focus, as seen in **Figure 1**, is characterized by early-stage and accelerator/incubator funds, with 6 of the top 10 most active investors in 2021 being headquartered outside Africa.

Active African Startup Investors (by 2021 deal count)

Investors	Headquarters	Total Investments (2021)
Launch Africa	Mauritius	66
Y Combinator	US	37
Kepple Africa Ventures	Japan	35
Flat6Labs	Egypt	31
LoftyInc Capital Management	Nigeria	29
Techstars	US	27
Future Africa	Nigeria	26
4DX Ventures	US	17
Norrsken	Sweden	17

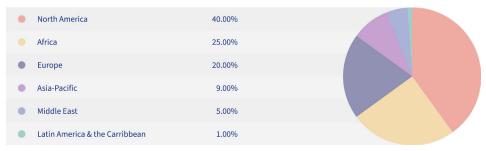
^{*}This data was sourced from Max Bayen's Africa: The Big Deal database

¹ African Private Equity & Venture Capital Association's Venture Capital in Africa Report - April 2022

Figure 2 describes the geographic distribution of investors participating in 2021 startup deals in Africa. 75% of funding flowing to African startups is coming from outside the continent and 60% alone is flowing from North America and Europe.

Utilizing data sourced from the same AVCA report, fintechs specifically received 31% of the total startup deals by volume in 2021 while receiving 60% share of the total startup deals by value in the same year. From these two data points alone, we can extrapolate that in 2021, fintech startups were the preferred sector by investors. One reason for this could be that a thriving fintech industry is an enabler for many other verticals, from education, to healthcare, energy, eCommerce, ride-hailing and beyond.

Geographic Share of Investors participating in 2021 VC deals in Africa



This graphic is a reinterpretation of data presented in the 2021 AVCA Venture Capital in Africa Report.

Figure 2

In 2021, we witnessed 8 +\$100M USD funding rounds for fintech startups in Africa². Looking at **Figure 3**, we see a high concentration of United States investors (52.08%) followed by China (16.67%) investing in 2021's +\$100M USD mega rounds³. The vast majority of participating investor types are traditional venture capital firms (57.69%) with corporate venture capital and private equity firms making up 21.15% and 17.31%, respectively.

Top Investing Regions for 2021 +\$100M USD Fintech Rounds

US	25	52.08%
China	8	16.67%
UK	5	10.42%
Africa	5	10.42%
Asia-Pacific, ex. China	3	6.25%
Europe, ex. UK	2	4.17%

Type of Investment Firm for 2021 +\$100M USD Fintech Rounds

VC	30	57.69%
Corporate VC	11	21.15%
PE (incl. VC/PE)	9	17.31%
Government	1	1.92%
Individual	1	1.92%

This data was compiled and analyzed from a variety of public news sources by the research team.

² OPay Series C, Wave Series A, Flutterwave Series C, Chipper Cash Series C + Extension, MFS Africa Series C, JUMO Unknown Series, and MNT-Halan PE rounds.

2.Accelerators and incubators are bringing more than expertise - they are bringing recognition

African startups are not alone anymore. The expertise and assistance available to African startups, and more specifically fintechs, has grown significantly over the years. Y Combinator is perhaps one of the globe's most widely recognized startup accelerators. The first African startup to participate in Y Combinator was Senegal's Wave, participating in the Winter 2012 cohort.

Between 2012 and 2022, 81 African startups have participated in the famed accelerator program with 47 of those startups being fintechs. Beyond Wave, the likes of Flutterwave (S16), Paystack (W16), Aella Credit (W17), NALA (W19), and Bamboo (W20) have also been participants in Y Combinator cohorts. However, while the number of African startups participating in YC has increased, the percentage of startups from Africa being invited to the program remains low, averaging 2.31% over the past 11 years; this has been improving over time as 4.78% of YC startups selected in 2022 were headquartered in

Africa. Looking at **Figure 4**, one can see how the presence of African startups in Y Combinator has changed between 2012 and 2022.

Y Combinator is far from being the only accelerator/incubator program that has been expanding its presence and influence over the African fintech ecosystem. Norrsken, a Swedish VC and startup enabler, recently completed the construction of its East Africa headquarters in Kigali, Rwanda. Plug & Play, Techstars, and 500 Startups have also been actively expanding their footprints in the continental ecosystem with the opening of new offices and the hiring of local experts.

Beyond the influence of the large, international programs, local incubators/accelerators have been deepening their focus and expertise to better enable them to assist startups in their own communities. A great example of local accelerator/incubators busy at work on the continent building their cohorts and supporting startups include the Tony Elumelu Foundation, The Grindstone Accelerator, The Baobab Network, and the Co-Creation Hub.

Over the last 11 years, 3,453 startups have gone through YC, with 2.31% being African companies and of the 81 African startups to go through TC, ~58% of them were fintech startups.

African Startup Representation in Y Combinator, 2012-2022

			Total		2022			2021		20	20	20	019	2018	20	17	2016	2015	2012
	Startups nbinator		81		30			17		1	0		7	3	8	3	3	2	1
	Fintech Stanbinator	rtups	47		22			9		4			4	2	:	2	2	1	1
	Global Star nbinator	tups	3499		628			718		42	2	3	69	278	24	40	226	218	149
	e of African nbinator	Startups	2.31%		4.78%			2.37%		2.3	7%	1.9	90%	1.08%	3.3	3%	1.33%	0.92%	0.67%
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Heyfood	Touch & Pay	Remedial Health				Avion	Sendbox	Influss Health	Kidato	CrowdForce	Avion	Credpal			Tress				

^{*}This data was collected from the Y Combinator Startup Directory.

^{**}Please note that 2013-2014 did not have any African startups participating in YC.

3. Development in regulatory frameworks

Fintech regulation in Africa is complex when you recognize that there are 54 different countries with 41 different central banks and many other regulatory bodies dividing their jurisdiction of the African financial technology industry. In contrast to the United States, African central banks generally act as regulators in addition to making monetary policy decisions. The Central Bank of Egypt has been one of the more active regulators on the continent in recent years. Egypt has a strong banking sector and an active but firm regulatory framework when it comes to financial regulation. In 2019, Egypt launched its Regulatory Sandbox while also announcing a \$57M USD fund to support startups and financial digitization projects in the country³.

Nigerian regulators have also been actively working on several different initiatives and documents providing further guidance to startups, banking institutions, and telecom companies in relation to financial technology. One of these has been President Buhari's Nigeria Startup Bill which has been in the works for several years and recently was signed into law⁴. In recent years, Nigerian regulators have launched several frameworks providing deeper context to companies working as Payment Service Banking (PSB), Digital Asset Service Providers (DASP), and Mobile Money Operators (MMO).

South Africa has also witnessed tremendous regulatory development recently. The Fintech Association of South Africa worked closely with the Payments Association of South Africa and recently launched the Payments Industry Body (PIB) which brings together banks, Payment Service Providers (PSP's), and other fintech applications together. Additionally, the Reserve Bank of South Africa recently made a breakthrough announcement that cryptocurrency would be classified as a 'financial asset.'

Egypt, Nigeria, South Africa, and Kenya not only lead the continent in funding, but they also lead the continent in fintech regulatory development as well. However, as the fintech industry has grown, we have witnessed other countries beginning to invest more time and thought into fintech regulation.

Ghana has made significant progress in building the regulatory infrastructure necessary for encouraging fintech growth and development. Earlier this year, the Bank of Ghana (the country's financial regulatory authority) launched its regulatory sandbox, focusing efforts in supporting companies utilizing blockchain technology, e-KYC, remittances, and crowdfunding⁵.

One of the most exciting trends however is how regulators are beginning to share best practices with their counterparts in other African nations. Last November, officials representing the Central Bank of Egypt and the Central Bank of Congo met to discuss best practices from Egypt and how they could potentially be applied in the Democratic Republic of the Congo⁶. In June of 2022, the Central Bank of Namibia and the Bank of Ghana partnered with each other to exchange best practices in areas of Central Bank Digital Currency (CBDC) and fintech regulation⁷.

Cross regulator and bilateral collaboration has taken a more active role across the African fintech landscape; for example, in South Africa with the creation of the Intergovernmental Fintech Working Group (IFWG). This group brings together the Reserve Bank, National Treasury, Competition Commission, Credit Regulator, Financial Sector Conduct Authority, the Financial Intelligence Centre, and the South African Revenue Service. This group of South African fintech regulators was created to help demystify the nuances of the regulatory landscape, provide a space for safe experimentation, and actively advance the mechanisms in place regulating the local fintech industry.

Fintech regulation is rapidly changing across the continent and fintechs are beginning to gain the clarity and structure necessary to safely and lawfully scale across the continent.

³ Fintech Futures. Regulatory sandbox at heart of Egyptian fintech boom. News Article - 14 September 2020

⁴ Benjamin Dada-Lagos considers the adoption of Nigeria Startup Bill. News Article - 14 June 2022

⁵ Bank of Ghana's Bank of Ghana Sandbox Pilot Press Release - February 2021

⁶ This closed-door bilateral discussion took place on November 16, 2021 during the Africa Fintech Summit Cairo and included the Central Bank of Egypt's Head of Regulatory Sandbox, Ahmed Monir, and the Central Bank of Congo's Director of Payment Systems, Frédéric Siazo.

⁷ Business Ghana. Namibian Central Bank builds partnership with Bank of Ghana. News Article - 26 June 2022

4. Focus on digital infrastructure development

Africa's momentum in digital transformation is perhaps one of the largest 'group projects' on the face of the planet. There is no single entity or organization spearheading the charge, rather continental stakeholders have aligned in a way where much of the continent's political and corporate mission is to further advance digital infrastructure.

A great example of digital infrastructure advancement accelerating on the continent is SpaceX's announcement that its Starlink satellite internet service had obtained regulatory approval in Mozambique and Nigeria⁸. While the service is not currently affordable to a vast majority of the very people it is expected to help, the service's regulatory approval brings about more competition in the local internet industry and serves as a proof-of-concept, showing that regulators are working hand-in-hand for the advancement of digital transformation in their respective countries.

What may be the most exciting movement for digital transformation has been the focus on developing 4G and 5G mobile networks across all corners of the continent. Large swathes of Africa still to this day do not have access to 4G networks, but this is changing and many companies are already setting their sights on establishing 5G networks. Currently, only a handful of countries have launched 5G networks including Ethiopia, South Africa, Zimbabwe, Nigeria, and Mauritius, but much of this service remains confined to large metropolitan areas9.

Figure 5 describes the average cost of mobile data in countries across Africa. The figure shows that while several African countries have relatively affordable mobile data, 5 of the top 10 most expensive countries for mobile data are located in Africa. The financial support that is going into digital infrastructure initiatives is coming from a variety of different sources including the United States, Europe, and China. In a report published by the IFC in 2020, it is believed that developments in digital infrastructure have the potential to add \$180B USD to African GDP¹⁰, thus further advancing and enabling the expansion and mass adoption of tech-based products and services, including Fintech, HealthTech, EdTech, and AgriTech.

According to data sourced from GSMA, the African continent has made significant strides in digital infrastructure since 2014. 4G coverage in Sub-saharan Africa was only 5% in 2014 and by 2020, this figure increased to 51%¹¹. Despite the change and advancement happening in terms of digital infrastructure access, it will likely be several years before the entire continent has access to the internet. However, this has not stopped Africa's technology startups from building; as a larger proportion of the continent gains access to the internet (4G & 5G), it is reasonable to expect technology startups to continue gaining customers for many years to come.

Average Price of 1 GB of Mobile Data

29 Algeria \$0.48 114 Cameroon \$1.53 39 Libya \$0.61 121 Guinea \$1.74 40 Ghana \$0.61 125 Niger \$1.85 42 Somalia \$0.63 127 Burundi \$1.86 45 Morocco \$0.69 135 South Africa \$2.04 46 Réunion \$0.70 139 Lesotho \$2.20 48 Nigeria \$0.71 144 Benin \$2.27 50 Tanzania \$0.71 146 Angola \$2.33 51 Western Sahara \$0.72 149 Malawi \$2.42 55 Sudan \$0.75 151 South Sudan \$2.51 60 Eswatini \$0.84 155 Liberia \$2.63 61 Kenya \$0.84 155 Liberia \$2.63 61 Kenya \$0.84 160 Mauritania \$2.74	Global Ranking: Least to Most Expensive	Country	Avg. Cost in USD	Global Ranking: Least to Most Expensive	Country	Avg. Cost in USD
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84 Djibouti \$1.12 192 Gambia \$4.60 93 Tunisia \$1.21 195 Chad \$5.10 95 Mayotte \$1.23 219 Central African Republic \$8.93 98 Sierra Leone \$1.26 220 Equitorial Guinea \$9.57 103 Uganda \$1.32 222 Namibia \$10.52 105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	79	Comoros	\$1.08	186	Zimbabwe	\$4.26
93 Tunisia \$1.21 195 Chad \$5.10 95 Mayotte \$1.23 219 Central African Republic \$8.93 98 Sierra Leone \$1.26 220 Equitorial Guinea \$9.57 103 Uganda \$1.32 222 Namibia \$10.52 105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	81	Rwanda	\$1.10	188	Cape Verde	\$4.30
95 Mayotte \$1.23 219 Central African Republic \$8.93 98 Sierra Leone \$1.26 220 Equitorial Guinea \$9.57 103 Uganda \$1.32 222 Namibia \$10.52 105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	84	Djibouti	\$1.12	192	Gambia	\$4.60
98 Sierra Leone \$1.26 220 Equitorial Guinea \$9.57 103 Uganda \$1.32 222 Namibia \$10.52 105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	93	Tunisia	\$1.21	195	Chad	\$5.10
103 Uganda \$1.32 222 Namibia \$10.52 105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	95	Mayotte	\$1.23	219	Central African Republic	\$8.93
105 Mozambique \$1.33 225 Seychelles \$12.66 106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	98	Sierra Leone	\$1.26	220	Equitorial Guinea	\$9.57
106 Zambia \$1.36 226 Togo \$12.94 119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	103	Uganda	\$1.32	222	Namibia	\$10.52
119 Madagascar \$1.52 228 Botswana \$15.55 112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	105	Mozambique	\$1.33	225	Seychelles	\$12.66
112 Guinea-Bisseau \$1.53 231 São Tomé and Príncipe \$29.49	106	Zambia	\$1.36	226	Togo	\$12.94
	119	Madagascar	\$1.52	228	Botswana	\$15.55
113 Senegal \$1.53 233 Saint Helena \$41.06	112	Guinea-Bisseau	\$1.53	231	São Tomé and Príncipe	\$29.49
	113	Senegal	\$1.53	233	Saint Helena	\$41.06

This data was sourced from the Worldwide mobile data pricing 2022 dataset organized from research conducted by Cable.co.uk

⁸ Space News· Starlink approved in Nigeria and Mozambique· says Elon Musk. News Article - 27 May 2022

⁹ Business Insider Africa. Ethio telecom launches Ethiopia's 5G network, one of few in Africa. News Article - 11 May 2022

¹⁰ IFC. e-Comony Africa 2020. Research Report - 2020

¹¹ GSMA. Mobile Internet Connectivity 2021: Sub-Saharan Africa Key Trends. Research Report - 2021

The Evolution of Africa's Digital Financial Services Tech Stack

Africa's fintech industry is built on a balance between competition and collaboration. Partnerships have been the backbone of the African fintech industry and rarely a day goes by without a major partnership announcement hitting the tech news airwaves. What started as a simple industry focused on financial software and payments, has evolved into an intricate and advanced industry consisting of digital challengers, enablers, and fintech-adjacent services.

Market Map

MADECA

@ airtal

	Mobile Money	M-PESA	airtel money	🛟 baga.	MIN
	Remittance	7wise	% nala°	چِّ پہر mukuru	Lemonade Finance
	Neobanking	Tyme	a sparkle	acarbon acarbon	€ kuda.
	InvestTech & Savings	thndr	piggyvest	Franc	Money Fellows
End	InsurTech	turaco	OKO	Š Pineapple	Amunleek 1
Front-End	Cryptocurrency & DeFi	Yellow	PATRICIA	PA%FUL	fònbnk
	Super Apps	G©ZEM	mnt 6 Halan	∅ SafeBoda	O vodapay
	Lending / Finage & Buy-Now, Pay-Later (BNPL)	Payhippo	aella	%-FairM oney	[]"LipaLater"
	Point-of-Sale (PoS)	Yroco®		pesapal Paparan Angham, Angham	○ OPay
	Bill Pay & Airtime	3 fawry	Zeep ü	 ≪YANDA	nomanini
	SME & Banking Digitizing	< team apt	JUMO	MarketForce	🤣 Oze
	FX & Treasury	AZA FINANCE	TREASURY ONE Unacking Value	verto	eversend
	FX & Treasury Wallet Providers & Connectors	AZA FINANCE U Ukheshe	TREASURY ONE Wallets drice	Verto Ohipper	eversend thepeer
			Unlocking Value		
End	Wallet Providers & Connectors	W Ukheshe	wallets africa	⊕ Chipper	thepeer
Back-End	Wallet Providers & Connectors KYC/AML & Onboarding	₩ Ukheshe	wallets _drica VerifyMe*	⊕ Chipper ' ThisIsMe'	thepeer
Back-End	Wallet Providers & Connectors KYC/AML & Onboarding Payment Gateways	₩ Ukheshe SMILE IDENTITY WIFS AFRICA	wallets Africa VerifyMe*	⊕ Chipper ThisIsMe ⊘ flutterwave	thepeer Interswitch
Back-End	Wallet Providers & Connectors KYC/AML & Onboarding Payment Gateways USSD	₩ Ukheshe SMILE IDENTITY WIF'S AFRICA CO Clickatell	wallets africa VerifyMe paystack Africa's Talking	← Chipper ThisIsMe* Continue flutterwave DPOGROUP	thepeer Interswitch Stax
Back-End	Wallet Providers & Connectors KYC/AML & Onboarding Payment Gateways USSD Cash-in Cash-out	WUKheshe SMILE IDENTITY WIFS AFRICA ○ Clickatell MoneyGram MoneyGram MoneyGram	wallets africa VerifyMe* paystack Africa's Talking	Chipper ThisIsMe* ✓ flutterwave DPO GROUP	thepeer Interswitch Stax Fawry
Back-End	Wallet Providers & Connectors KYC/AML & Onboarding Payment Gateways USSD Cash-in Cash-out Payment API's & Integration	WUKheshe SMILE IDENTITY WIF'S AFRICA ○ Clickatell MoneyGram Process grander S Stitch	wallets africa VerifyMe paystack Africa's Talking	Chipper ThisIsMe* Interval the property of th	thepeer Interswitch Stax Fewry klasha

^{*}This graphic is a simplified characterization of the African fintech tech stack and does not fully encompass or describe some of the services offered by the various listed companies.

The market map presented on the previous page does its best to depict the depth and breadth of the African fintech ecosystem. From this graphic however, one can come to the conclusion that the sector is quite unique from financial tech stacks in more developed countries and regions. One area where this is visible is how USSD is utilized.

USSD plays a unique role in Africa. Apple's iPhone launched 3 months after m-Pesa in 2007 - the global smartphone boom had not yet truly flourished and would take several more years before Africa began widely accepting and using smartphones over feature phones. Feature phones still play a major role on the continent to this day. One of the benefits of mobile money has been that it can run on both a smartphone or a feature phone. In the US, the near extent of USSD utilization has been for code verification systems when logging into online or mobile banking applications, but in Africa, USSD plays a much more active role in the fintech industry.

Since the initial launch of mobile money, the industry has seen a massive change in tide. First generation mobile money is telecommunications company led and is distributed via GSM (Global System for Mobile Communications) while the new generation of mobile money is venture backed and focuses on smartphone users ¹².

	Africa	United States
Population (in millions)*	1,372.6 mil	332.3 mil
Median Age**	18	35
Number of Fintech Companies	968	22,289
2021 Total Funding Raised by Fintech Companies (in millions)	\$3,300.0 mil	\$47,800.0 mil
Population/Fintech Startups	1,417,975	14,909
2021 Fintech Funding (per capita)	\$2	\$144

This data was sourced and analyzed from a variety of different resources by the research team.

Figure 6

This year, one of the common questions of debate among African fintech thought leaders is, 'Does Africa have too many fintech companies?' **Figure 6** compares the state of fintech in the United States with that of Africa. In 2021, \$2 of investment went into Africa's fintech sector for every person on the continent, while in the United States, \$144 was invested into fintechs per capita.

Fintechs in Africa are just getting their start and the sector continues to experience near-exponential growth. While it is easy to summarize the market map of Africa's financial technology industry down to payment gateways, card providers, API's, etc., services like cloud services provided by Amazon Web Services and others play a crucial role in enabling the growth and scalability of the continental fintech ecosystem.

¹² Endeavor Nigeria's The Inflection Point - June 2022

Cloud Service Providers (CSP's) Role in African Fintech

Cloud computing services play a crucial, and often unexamined, role in the advancement of the African fintech stack. Cloud services enable innovators and entrepreneurs to focus on developing their products and services, without the headache of maintaining private servers and all the associated costs that come with private computing power.

Amazon's precursor to Amazon Web Services (AWS) was Amazon S3, launched in the United States in March of 2006 and launched in Europe a year and a half later in November 2007. Launched in 2020, Africa (Cape Town) was the 23rd AWS Region, and the first one in Africa. It comprises of three Availability Zones. The AWS Africa (Cape Town) Region adds to the list of AWS investments in the growth of South Africa, which include the launch of Direct Connect in 2017, the introduction of Amazon CloudFront to South Africa in 2018, and the launch of two new cutting-edge locations in Johannesburg and Cape Town.

Startups leveraging cloud services are enabled to build more sophisticated and scalable applications quicker and cheaper - leaving fintechs with several key advantages:

1. Agility

AWS enables fintechs to rapidly spin up resources on-demand, deploying hundreds or even thousands of servers within minutes. Fintechs can quickly develop and roll out new applications while also enabling teams to experiment and innovate flexibly and frequently.

2. Cost Savings

AWS allows fintechs to trade capital expenses for variable expenses - only paying for the service as it is consumed. Additionally, fintechs benefit from AWS' economies of scale, lowering variable expenses beyond what a startup can do themselves.

3. Elasticity

Fintechs can provision the perfect amount of resources for their needs and teams can instantly scale up or down aligning the needs of their business.

4. Time Savings

AWS empowers teams to focus on deploying applications and innovating to grow and differentiate their business instead of wasting resources on managing infrastructure and data centers.

5. Rapid Deployment

AWS helps fintechs deploy infrastructure in a matter of minutes. AWS works on the concept of 'Regions,' which are physical locations around the world where the company clusters data centers, also known as Availability Zones. With AWS, fintechs can leverage 87 Availability Zones across 27 Geographic Regions worldwide.

Cloud Service Providers

klaʊd 'sərvəs prə'vaɪdər / noun

The on-demand access and availability of computer system resources, specifically in the areas of computing power and cloud storage, that do not require the active management of the user.

African Fintechs Leveraging AWS: Case Studies

Amazon Web Services is utilized by many of the largest fintechs across Africa. In this section, we will highlight just four major fintech players that utilize AMS' services.



Flutterwave - AWS Lamdba



Flutterwave is one of the largest and most widely operational fintechs active on the African continent. Flutterwave provides a vast array of services to its business customers including the ability to process payments, sell goods and services online, build financial products, and much more.

Flutterwave leverages AWS Lambda to run and operate its payment infrastructure - the bread and butter of Flutterwave's business model. Flutterwave was born on the AWS cloud which has enabled the company to drastically cut new business onboarding times and reduce operational costs.

"By running our code for key processes on AWS Lambda, we have reduced our infrastructure costs by \$120,000 a year."

Nujinim Egwegbete-OdukwuIT Security and Infrastructure Analyst, Flutterwave



TymeBank - ECS & EKS



TymeBank is one of the largest and most prominent neobanks on the African continent and was the awardee of South Africa's first new banking license in over 20 years.

TymeBank currently hosts 85% of its infrastructure on AWS and runs its mission-critical payments processes through Amazon ECS and Amazon EKS. By utilizing AWS, TymeBank was able to cut its infrastructure costs in half and has helped the company scale quickly and seamlessly.

"Working directly with the AWS engineering team, we have been able to grow and mature into the cloud... This has cut our monthly infrastructure bill in half which for us is a significant cost savings."

Dieter Botha CIO, TymeBank





Yellow Card - AWS Lambda, S3

Yellow Card Financial is one of the largest and most active cryptocurrency exchanges in Africa. Beyond giving people access to cryptocurrency, Yellow Card enables its users to send money across borders, and also runs local educational seminars across the continent to engage with individuals about the benefits and uses for cryptocurrency in Africa.

Yellow Card has been built on AWS since day one and has a low latency, high availability serverless stack built on the AWS cloud that leverages tools such as Amazon S3, SQS, SNS, Lambda, and more. AWS's serverless infrastructure has enabled Yellow Card to rapidly expand and facilitate payments in over 16 countries in Africa.

"It's important for us that everyone is able to access crypto and innovative payment technologies. AWS has been a great partner of ours to help ensure that we can facilitate rapid and reliable transactions for our customers as we scale across the continent and promote financial inclusion."

Justin Poiroux CTO, Yellow Card







Aella Credit is a Nigerian instant loans startup that enables individuals to access loans on its mobile application. Aella requires users to have a verifiable source of income and uses a mix of biometric, employment, and mobile phone data to build an alternative credit score for its users.

Through the use of AWS Rekognition - Amazon's identity verification protocol - Aella was able to instantaneously provide loans without the need for human intervention and has significantly decreased the number of verification errors.

"Identity verification is a major problem for financial services companies in Nigeria, and we can overcome that challenge by using Amazon Rekognition. That gives us a competitive edge as a startup."

Wale Akanbi Chief Technology Officer, Aella Credit

Conclusion

Africa's fintech industry has reached its inflection point. The stars of funding, expertise, regulation, and necessary tools available to founders are aligning in a way where consumers, companies, and governments alike will benefit greatly by the innovation that is taking place.

Conversations in the industry are not only about payments, mobile money, or digital banking anymore, rather these conversations include a variety of different sub-sectors and verticals. While there is still much work to be done in digitizing payments and the supply chain of money, it is a welcome and healthy sign for the industry that we are now seeing goals of insurance penetration, wealth creation, and inflation protection coming to the forefront.

Funding at record highs, increased focus by global accelerators/ incubators, regulatory framework evolution, and digital infrastructure development are playing major roles in changing the African fintech landscape, but an often overlooked and underreported enabler of the industry has been the presence and availability of cloud service providers. With the utilization of cloud in tech stacks, founders and engineering teams have the ability to focus on bringing new products and services to market quickly and seamlessly, without the headache of physical infrastructure management and deployment.

Similar to how accelerators and incubators provide founders with much needed advice and assistance in various areas, cloud holds the keys to unlocking much potential for each and every startup whether they are core fintech services, fintech-adjacent companies, or are utilizing embedded fintech applications.

Simply, without the agility, cost savings, elasticity, time savings, and rapid deployment capabilities that cloud service providers equip their customers with, Africa's fintech industry would not be where it is today.

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About Africa Fintech Summit (AFTS):

The Africa Fintech Summit is an initiative founded in 2017 that brings together financial regulatory agencies, Central Banks, VC/PE investors, fintech startups, telecommunication companies, and banking institutions to discuss the challenges and opportunities for financial technology to address issues of financial inclusion and the advancement of digitization and cashless society across the African continent. AFTS is a leader of insight and thought leadership beyond bi-annual conferences through the creation and promotion of content initiatives including a podcast, a weekly newsletter, and the publication of white papers and reports.

About Amazon Web Services (AWS):

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

