

## 7 THE NEW OIL

*'This is not being dramatic, this is not an exaggeration – for young Nigerians and young Africans, technology is literally freedom. In Nigeria, the path to money usually lies in politics, oil and gas or telecommunications, and those sectors are notoriously hard to break into. Before the tech space arrived in Nigeria, if you talked about getting a job you would hear people say that you have to have connections. That's basically our term for nepotism: you have to know someone to get a job in those sectors. But in tech there is a very real meritocracy at work. You are only limited by your own skills and that is really something for us. This is a path that no one else controls.'* Odunayo, 28

*'Technology is a great equaliser. In my parents' time, you were stuck with the hand you were dealt. You were dealt Nigeria, and Nigeria was all you had. My generation has technological tools that can get us out. We can go online and work for overseas clients. There are business and income opportunities with clients who are in Dubai, Spain, the US or the UK. We can be paid for our skills in dollars and that creates an alternate reality. We have better purchasing power, we can bridge the gap, we can access more than the hand we were dealt. It's a huge opportunity.'* Davies, 30

*'From the point of view of a digital artist, I don't need to pay rent for a studio, my studio is basically my laptop, and I can just wake up and start working at my desk. I also don't need to worry about buying and priming a canvas and all that. But starting out in digital art I never really thought about*

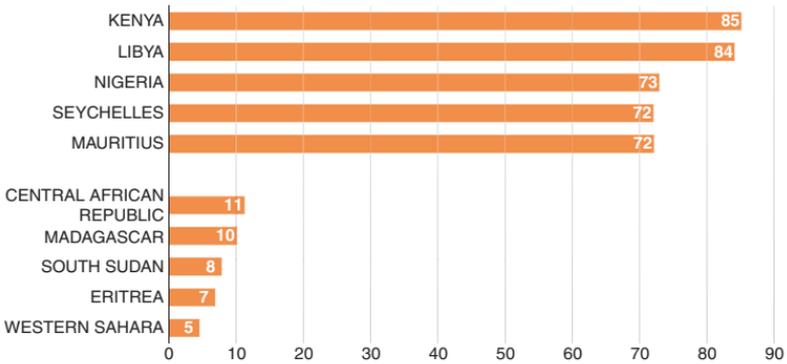
*all that. My dad introduced me to the Internet. When the Internet came, in the early 2000s, he took me to a cybercafé one Saturday. It was far from home, and we walked there together. I sat with him, he opened the computer and created my first email account, showed me how to visit websites and send emails. After that, whenever I had money – it cost 100 naira for one hour, which was a lot back then – I would go to buy an hour, browse the Internet. I started creating abstract works using Word. Those were my early works and I've gone on from there. Now, I'm showing my work at art fairs around the world. In 2021, I headlined an African art fair in London and my work was auctioned at Christie's, the first time they auctioned a [digital work] by an African. I'm super excited to be leading the way for Africa, so Africans can see what is possible. Because this is what is possible – a digital artwork made by an African can sell for US\$70,000 and higher.'*  
Osinachi, 30

\*\*\*

Technology has changed our world. Though we may complain about the overarching influence of the Internet and mobile telephony on our daily lives, they are also vehicles for connection, freedom of expression and freedom of opportunity. Arguably, nowhere has their influence been more powerfully felt than in sub-Saharan Africa, where there has been an extraordinary technological takeup, particularly by this young cohort.

Even the oldest members of the Soro Soke generation had very limited access to internet technology – as recently as a decade ago, fewer than 5 per cent of sub-Saharan Africans had access to the Internet.<sup>1</sup> Today, internet penetration varies widely but as of December 2020, approximately 85 per cent of Kenyans and 73 per cent of Nigerians had internet access.<sup>2</sup>

Access is improving each year – in October 2021, tech behemoth Google announced plans to invest US\$1 billion



**Figure 26** African countries with highest and lowest percentage of population with internet access

Source: [www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country](http://www.statista.com/statistics/1124283/internet-penetration-in-africa-by-country)

in Africa over the next five years to deliver better access to fast and cheaper Internet.<sup>3</sup> This growing connectivity is empowering a generation with opportunities that would have been unthinkable as little as 10 years ago. The World Bank's International Finance Corporation predicts that by 2025, the internet economy has the potential to contribute US\$180 billion to Africa's economy, growing to US\$712 billion by 2050. Increasing internet penetration across the continent to 75 per cent has the potential to create 44 million new jobs, it says.<sup>4</sup> Even governments are beginning to recognise the potential of technology. In June 2021, when the Lagos state government announced its intention to construct West Africa's biggest technology cluster, Lagos state governor Babajide Sanwo-Olu described technology as 'the new oil', highlighting its potential to generate wealth and jobs for its young population.<sup>5</sup>

Tech talent in Africa is at a historical peak and continues to rise annually. There are 690,000 professional developers across Africa<sup>6</sup> and the continent has seen an extraordinary growth of tech hubs, too, most championed by young

people – places where tech talent, innovative thinkers and entrepreneurs come together to create new digital products and businesses.<sup>7</sup> Google recently launched its Africa Investment Fund, through which it will invest US\$50 million in local start-ups and provide them with access to its employees, network and technologies.<sup>8</sup> Technology enables this skilled young workforce to compete for jobs and projects abroad on a more equal footing and to earn higher wages in foreign currencies.

In a country and continent where youth unemployment is a major issue, the tech sector not only offers this cohort access to well-paid jobs but also the possibility to build an industry based on meritocracy. In the past, bright young Nigerians would vie for jobs in the public sector or oil and gas industry, fields that are rampant with nepotism. To be able to build successful businesses and find jobs, independent of corruption, is liberating, both for individuals and for society.

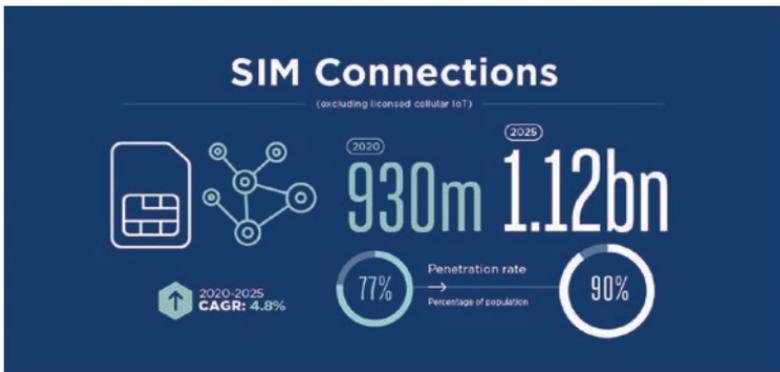
Oduunayo Eweniyi, 28, who co-founded PiggyVest, now employs 70 staff. ‘The youth unemployment rate is very high. I graduated from university with a first-class degree in engineering, but I was faced with the very real possibility of not getting a job’, she says. ‘Being able to work in tech, I created a job for myself and we’ve gone on to create jobs for other people, running into the hundreds. And that’s not possible anywhere else, only in tech. Your limit in tech is your imagination, you are the only one in your own way, which is amazing. You can’t say that for literally any other sector here. Every day when we take stock of the work we’ve done and the team we’ve built, the path the company has charted and everyone else who has come up with their own company as a result of PiggyVest, it is all a joy. Because that’s many people who’ve moved from unemployment to working.’

PiggyVest is an online savings and investment platform that is largely accessed by mobile phone and it is the mobile

telecoms revolution that arguably has had the largest impact in sub-Saharan Africa. According to research conducted in 2020 by the Berlin Institute for Population and Development, in the year 2000 just 550,000 out of 122 million Nigerians had fixed-line phone connections.<sup>9</sup> Connections were not expected to grow significantly: the technical challenge of installing infrastructure was simply too great and the costs unlikely to be recouped. Then, in 2001, South African company MSN installed a much cheaper mobile network. Almost overnight, mobile telephony became a mass phenomenon – by 2004, there were nine million subscribers in the country; by 2019, 185 million Nigerians had a mobile contract.<sup>10</sup>

This is a statistic that is repeated across the region. As early as 2016, *The Economist* found that mobile phone ownership in sub-Saharan Africa (then at 40 per cent) was more widespread than access to electricity.<sup>11</sup> By 2020, there were 930 million SIM connections in the region, representing 77 per cent of the population.<sup>12</sup>

The use of smartphones, which enable greater access to mobile technology, is also growing. In Nigeria, one of the countries with the largest number of mobile internet



**Figure 27** Predicted growth in Sub-Saharan African SIM connections, 2020–2025

Source: [www.gsma.com/mobileeconomy/sub-saharan-africa/](http://www.gsma.com/mobileeconomy/sub-saharan-africa/)

users worldwide, some 75 per cent of web traffic is generated via smartphones.<sup>13</sup> Nigeria's smartphone market is expected to triple to more than 140 million by 2025<sup>14</sup> and the country's mobile economy is set to grow by 19 per cent between 2019 and 2025 – the highest rate in sub-Saharan Africa, which is the fastest-growing mobile technology region in the world.<sup>15</sup>

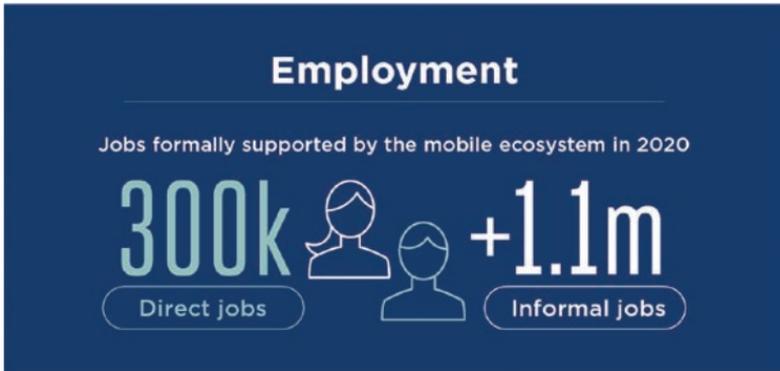
The GSMA is an industry organisation that represents the interests of mobile network operators worldwide. Its analysis suggests that mobile technologies and services generated 9 per cent of GDP in sub-Saharan Africa in 2019 – a contribution that amounted to more than US\$132 billion of economic value. The mobile ecosystem also supported almost 1.1 million jobs.

In some areas – such as the mobile financial sector – sub-Saharan Africa has become a global leader. By the end of 2018, there were almost 396 million registered mobile money accounts in the region, representing nearly half of the global total.<sup>16</sup> Mobile money transactions average close to 25 per cent as a share of GDP in the region, against just 5 per cent in the rest of the world.<sup>17</sup>



**Figure 28** Predicted growth in sub-Saharan Africa mobile industry contribution to GDP

Source: [www.gsma.com/mobileeconomy/sub-saharan-africa/](http://www.gsma.com/mobileeconomy/sub-saharan-africa/)



**Figure 29** Sub-Saharan African jobs formally supported by the mobile industry ecosystem, 2020

Source: [www.gsma.com/mobileeconomy/sub-saharan-africa/](http://www.gsma.com/mobileeconomy/sub-saharan-africa/)

‘Today, more people in sub-Saharan Africa use mobile money than people in the rest of the world’, says Catherina Hinz, director of the Berlin Institute. ‘People who formerly had no access to bank accounts can now transfer and withdraw money and take out loans or insurance via mobile phone.’

Tamara Ojeaga, 39, who runs Rude Activewear in her spare time, is also chief client officer at Kantar’s Insights Division in Lagos. She says: ‘Banking in Nigeria is so future forward and fast moving that you don’t even need cards at the ATM, just a phone code. There is even SMS banking for data-less phones. And we access everything from banking, to content, culture and entertainment through our phones. There is literally an app for everything.’

Omomi, a healthcare app developed by Nigerian doctor Charles Akhimien, is an example. It provides mothers and pregnant women with information about children’s health and connects them to doctors in real time. Health provision in poor, remote rural areas is a challenge but with an app like Omomi, trained medical personnel can answer questions on common childhood illnesses within

minutes and there's also an online community that allows women to share information.

Mobile telephony is just one form of technology that is enabling the continent to bypass traditional routes to development: a process known as leapfrogging. 'African countries have already taken a leap forward, leaving more developed countries behind', says Hinz. 'In Europe, for example, drones as suppliers of blood reserves or medicines are still dreams of the future; in Ghana or Rwanda they are a reality. Small buses in Nairobi offer WiFi to their customers but if you travel by bus on German country roads you can often search in vain for an internet connection. In rural areas in some African countries, they are using eco-friendly, high-tech solutions that use less water, leapfrogging the approach taken in developed nations. There are a lot of shortcuts developing countries can use and we are starting to see that.'

For the Soro Soke generation, leveraging the Fourth Industrial Revolution is about thinking big, thinking differently and unearthing unconventional approaches to reimagine Africa in a digital way. Young sub-Saharan Africans are using tech-based solutions across agriculture, education, finance, healthcare and infrastructure, sensing an opportunity to develop African economies at lower cost and faster speed.

Odionye Confidence, 27, is the founder and president of Lagos-based drone specialists Beat Drone. Most farms in sub-Saharan Africa remain dependent on manual labour. Rather than shift the sector to mechanised equipment, which is high cost, difficult to deliver to remote rural communities and has a heavy environmental footprint, Confidence believes a new technology – drones – are a better solution for African farmers.

'We met Nigerian farmers and asked them what problems they face and what eats their money', says Confidence. 'Usually it is inputs – chemicals and fertilisers – that are both the biggest cost and challenge. They have issues



**Figure 30** Odionye Confidence, 27, founder and president of Beat Drone

Credit: Odionye Confidence

with accuracy: people spray too much or not enough and sometimes they don't spray in the right place. Many farmers had a chemical footprint per hectare that was too high. With drones, we are able to reduce the chemical footprint and water usage, and with better accuracy comes better yields. It also reduces costs. Drones use half the chemicals and only a tenth of the water. And a drone can do in 15 minutes what takes two people five hours. If you are flying a drone, you can be 1km away, you don't have any contact with chemicals, so it's a decent working environment, too.'

The company has seen growing demand for its services. 'We expect to have 45 drones in the air by the end of 2021. But the orders are far more than we can fulfil so we are looking to make our own drones and bring more people into the space', says Confidence.

Beat Drone is opening a drone factory: manufacturing will begin in early 2022. 'Our first Made in Nigeria drones will fly in December 2022, and we will be fully commercial in second quarter 2023', says Confidence. 'We hope



**Figure 31** Beat Drone technology in agricultural use

Credit: Odionye Confidence

to produce 3,000 drones annually for the Nigerian and African market. Because we will be manufacturing here, we can deliver drones more cheaply and they will be tailored to our market, too. Every area has its own distinct way of farming, and we know very well what we need here.'

Beat Drone has also opened an academy to train drone pilots in partnership with the University of Ibadan. 'We're training people how to use the equipment because the market is huge. Once people are trained, they can run their own business, make their own money. Our plan is to lease the drone to them. They will pay back over a number of years and then they will have full ownership of the drone.'

Confidence is typical of this generation of entrepreneur – running successful businesses driven by creative disruption and focused on delivering solutions to larger problems.

'As a business founder, you have to be able to look around, see these kinds of problems, and think, how can I fix it?', says Eweniyi. 'All of the founders I know, everyone is latching on to a problem and hacking away at it. I think

that's a uniquely African trait because in the West, based on Maslow's hierarchy, the problems are more abstract than the ones that we are dealing with. And we don't have a choice. No one else is going to come and fix it for us. And it's not just founders, it's all the young people in Nigeria. We have all realised that we are on our own. No one is coming. We have to fix our problems ourselves.'

Iyinoluwa Aboyeji, 31, has presided over two highly successful Nigerian companies, including talent network Andela and secure online payment system Flutterwave. He says solving social problems is not just about feeling good, it is also a way to ensure success.

'For me, like many other Nigerians who are entrepreneurial, we didn't start by trying to change the world, we were just trying to survive', he says. 'I was very focused on how much money I could make for a very long time. I wanted to prove to everybody I could make lots of money like [Mark Zuckerberg] did. But it wasn't until I got to a place in my life where I started to understand that technology represents an opportunity to serve people that I really got my big break. The big idea, the big lesson I learned from building businesses like Andela and Flutterwave, is that embedded in the challenges are the opportunities. So, take a crazy challenge like youth unemployment and turn it into an opportunity for remote working. Take an incredible challenge like financial exclusion and turn it into an opportunity for global payments. Do the things that are only possible to do here. You can still make money this way if that's what you care about. But this is about more than making money: it is a service to the country. It's about building a path to a future where prosperity is within everyone's reach.'