



# Making 5G pay

Much is said about the potential for 5G and the doors it will open for new opportunities. However, the real challenge in Africa is going to be how to monetise this exciting new technology. Jon Howell and Smita Sarkar investigate

**A**frica will have to wait till 2022 to be introduced to the new generation of 5G cellular mobile technology, poised to offer reliable delivery of much higher data speeds than current data networks, a theoretical 20Gbps download and 10Gbps upload along with enhanced coverage. So does that mean that 5G will stay on the back burner for Africa?

"5G rollout in Africa will be much slower than Asia and Europe," says Kim Craven, managing director of Lifecycle Software. "There is less demand for high-speed, higher-cost bandwidth, more need for lower cost and accessible mobile services."

There will be pockets of opportunity for operators though. Affluent cities like Johannesburg will lead the way and, like in Europe, the replacement of fixed-line services with mobile broadband will be the way ahead for monetising 5G.

"Replacing copper and fibre infrastructure means cost effective and more reliable services that can be

offered on a like for like basis, with unlimited data bundles being key to the uptake of the services," explains Craven. "This mobile broadband offering, along with VoLTE and other IP-based voice services, will be key in allowing the initial 5G rollouts to see ROI and fund growth into the interactive consumer base in later stages of its evolution."

Craven predicts that, other than affluent city areas, 5G handsets and 5G use will be minimal, with rather slow growth over the next 2-3 years. Significant growth in consumer use will only come when Asia and Europe have evolved their use of the technology and have found real world everyday use cases for the technology that Africa can adopt.

He isn't the only one who sees difficulties for African 5G. South African operator Cell C looks at 5G as an inevitability but they warn that unless the industry makes drastic changes to the traditional models of network rollout it's unlikely that it will make the impact that is hoped

for. "The implementation of the nascent 5G technology has been hyped in the South African media, but the capital investment in LTE and LTE-Advanced (around R80bn over the last three years for industry) will be small in comparison to the investments needed to cover the same footprint with 5G technology," warns Cell C.

But other operators are much more positive about the technology's future. They feel that Africa with its increased mobile data usage, huge population, and a lack of fixed-line internet connectivity can prove to be a lucrative market for 5G and "this promise of high-speed connections will help operators leverage multiple untapped applications, especially in a market like Africa," according to Anil Krishna, head of African region at Comviva Technologies.

James Gray, director at Graystone Strategy, agrees. "If the 5G infrastructure is extended into rural areas, the super-fast broadband will offer

a real potential boost to communities to get access to high speed data via routers," he says. Although he warns that the big challenge with super-fast mobile data is the rate at which data can be consumed and costs can be run up, if users are not on large data bundles.

Perhaps consumers shouldn't be in the forefront of any operator's plans. Speeding up the ROI on their 5G rollouts will involve looking at what the technology can enable, for example enriched content services, enterprise applications, and IoT services. "Once 5G arrives, operators will be able to leverage their network and infrastructure to create new monetisation opportunities," says Clémentine Fournier, regional VP Africa at BICS.

According to Martin Morgan, VP marketing, Openet, one of the initial uses of 5G will be fixed wireless access (FWA). In countries where fixed line broadband penetration is low, the opportunity is to use 5G FWA to offer a real alternative to fixed-line broadband services. "There is also the option of leveraging 5G for remote health and education programmes and looking at partnerships with government agencies to use 5G FWA to deliver such services," he says. "But the question shouldn't be just about getting customers to pay. There are many innovative models such as partner-funded and ad-funded models that can be rolled out too."

Sami Saber, managing director, Middle East and North Africa, Syniverse, remarks that customers won't necessarily buy a new handset to get higher speed. Operators will need to develop use cases that fit the local market and address local consumer needs. "With the lack of fibre infrastructure in some countries, 5G has become a credible and fast alternative. Fixed-mobile broadband for many operators represents the shortest route to 5G monetisation, which can be enriched with services like Internet Protocol television (IPTV) and video on demand (VoD)," he says.

With 5G's core benefit over 4G being an increase in concurrent users from 4,000 to a 1,000,000 per km<sup>2</sup>, operators should think about targeting highly-concentrated populations where high-quality data access is limited. Mobiz CEO, Greg Chen,

says: In reality, perhaps the best way to monetise 5G is to utilise the additional bandwidth offered to reduce the overall cost of data on 3G and 4G networks thus increasing data consumption."

There are other alternatives to selling directly to consumers too. "Instead of end-users paying telcos directly for connectivity, operators in a 5G world will be able to generate revenues by charging the companies that are providing 5G-reliant services to their customers. This business-to-business-to-X (B2B2X) model can vary as X can either be a consumer or a business, leading to many different use cases. And by identifying and tapping into these opportunities, operators have the chance to ensure that they get a return on their 5G investments," says Fournier.

Business customers will be a critical part of the monetisation journey. Just as for consumers, 5G services need to be based on use cases designed specifically to address business problems, unlock new services, and enable new market offerings. "There have been a number of reports and studies from different industry experts about the expected explosion of IoT devices in the next decade," says Saber. "IoT remains a key driver of 5G, and, with ultra-low latency and speed, the potential is immense."

Morgan also thinks operators need to look at selling applications beyond connectivity to businesses. "We're already seeing the emergence of 5G powered smart factories in Asia and Europe," he says. "But to do this operators need to look beyond the confines of being a traditional telecoms company. Businesses will pay a premium for guaranteed quality of service for 5G, this could be for applications such as mission critical IoT and production lines in factories."

Fournier says the number of IoT connections is booming worldwide. According to the GSMA, between 2018 and 2025, the number of global IoT connections will triple to 25 billion, while global IoT revenue will quadruple to USD1.1 trillion. "In Africa, a continent that hosts over half the global population growth, there are already a number of practical IoT use cases in verticals



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such as agriculture: for example, wireless sensors for tracking animals, and measuring crop growth and soil moisture. Other examples include mobile money, and mhealth," she says.

As the connectivity to support the IoT becomes increasingly commoditised, the onus will be on operators to expand their role in the value chain. From providing the essential tools and capabilities for partners to build IoT solutions, to becoming the end-to-end IoT solution providers, the opportunity is there for operators to seize, she feels.

However, Craven has a note of caution. Although business take up of 5G services will be critical to the speed and commercial success of all 5G rollouts across Africa, he feels that existing IoT applications do not require 5G and it will only be when applications are developed specifically for 5G that IoT will drive significant commercial uptake.

Africa is a vast and diverse market. "South Africa and some north African countries, for example, are emerging markets, while others are considered 'frontier markets'," says Fournier. "In less developed countries there may be challenges, but these regions also hold opportunities for developing connectivity, use cases which are not possible elsewhere. In fact, some countries in Africa are arguably now leading the way in some markets, such as mobile money."

Operators shouldn't be discouraged though. "Despite the low ARPU across Africa (an average revenue per mobile user of between USD5-10), we have seen the emergence of new technologies such as 4G – albeit at a different speed to other continents," she says.

Craven thinks this is the critical point, that initially 5G has to replace services that people are already paying for in a commercial manner. "This means not only pricing 5G in line with existing services but significantly increasing broadband bundles to ensure it can be used without a large usage penalty," he suggests.

Ultimately, there could be technical limitations that will exclude those who are near the breadline. "Due to the increase in frequency adopted by 5G, its coverage per node will be significantly lower. Therefore many more nodes are needed to cover the same distance that 4G



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currently covers,” explains Chen. “This would mean that only densely populated areas urban areas would get to utilise this.”

Morgan thinks other business models might allow prices to be brought down. “5G will see many new partnerships as companies look to use 5G as a delivery channel for their services. It will be in the interests of these companies to have a large base that can use their services, so we will see such partner companies subsidising, or paying for, 5G access for some sections of the population,” he predicts.

He points to Peru and how Telefonica is using innovative approaches to overcome the high cost of connectivity and the relatively low incomes of consumers. “Telefonica is partnering with Facebook and national banks as part of their Internet Para Todos (Internet for All) scheme to deploy internet connectivity. The result is that they will have connected half a million people in only one year in Peru with a goal of connecting the entire population,” says Morgan.

With IoT maybe a long-term goal and consumers being slow to adopt, are businesses in the position to pay for 5G services?

“The simple answer is yes,” says Saber. “Businesses have different priorities, such as revenue, customer experience, and cost. So a business will sign up to 5G if that can help improve their businesses in a high-priority area, for example. It just needs to be cost justified.”

Krishna is of the opinion that in the context of Africa, “select use cases certainly have the potential, particularly in the agriculture, health, and manufacturing segments. These businesses may not be averse to paying, keeping in mind the potential to generate return on investment.”

Operators have to look at the ROI for 5G, and it’s the same for those businesses who are considering purchasing 5G services. “If the pricing is linked to the value that the service or application over 5G delivers, and if it can demonstrate operational efficiencies, reduced wastage or more efficient use of manpower, then there is a business case to be made,” says Gray.

The business user marketplace is ready to pay for this believes Morgan. “There was a recent study by CapGemini of 800 industrial companies that showed that 79 per cent of industrial companies would expect to pay a premium for the guaranteed Quality of Service that 5G delivered, and 78 per cent said they’d pay a premium of enhanced speed and reliability, and 77 per cent willing to pay extra for enhanced security. There are numerous 5G features that enterprises will be willing to pay extra for,” he says.



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Fournier is keen to point out that despite the vastness of the African continent, and the remote nature of some towns and social groups, mobile and digital communications have been able to connect the previously unconnected. She is confident that 5G will help revolutionise several industries, including utilities, banking, health, transport and farming.

“For example, in some regions of Africa there is only one doctor for tens-of-thousands of people, they can now connect patients remotely to healthcare professionals, without having to travel long distances, and check medicine stocks in neighbouring towns. And by using smart agriculture technology, farmers across Africa have improved their control over the process of growing and harvesting crops, and rearing livestock,” she says.

For operators, a new generation of telecoms technology throws up all sorts of issues. “Not all operators are ready for 5G,” warns Morgan. “Some will be hindered by legacy systems, such as billing systems that were designed to bill voice calls and SMS. The good news is that there are new options to implement Digital and 5G BSS as an adjunct to legacy kit, or even on a new greenfield site for new digital brands.”

As part of its product portfolio, Syniverse offers data clearing which validates and transfers billing data, used for example when operators need to charge for roaming. So Saber is well placed to comment on how ready operators are, “to monetise 5G-era services, a supplier must be able to accurately charge for its product in an ultra-fast, low-cost way. Blockchain will ultimately address this

challenge. This technology, among other things, may eventually eliminate a large portion of the current process for revenue assurance.”

“However, operators are not ready for this quick charging, and it will require rapid infrastructure-level technology to deliver it. The good news is that solutions are now being tested that will allow this to come to fruition soon,” he says.

Fournier believes that there is huge potential for 5G across Africa, but there are significant challenges for operators to overcome. “First and foremost, is cost. To balance the level of investment and capitalise on the IoT opportunity, operators need robust platforms for customer management and billing. Opting for a cloud-based platform will minimise technical effort and upfront costs, making them more accessible to a broader market,” she says.

To leverage the power of 5G technologies, operators need to rethink their role and what value to deliver, and what business models to use. “5G will bring a new level of performance and new characteristics to telecom networks, enabling new services, new ecosystems and new revenue streams,” says Krishna. “Given that the use cases for enterprises will add another dimension in the form of newer revenue models and streams, the billing system will also need to accommodate such enterprise billing scenarios, in addition to the traditional end-user billing models.”

There could be other challenges to take on. For example, suggests Gray, “will operators be willing to collaborate to reduce costs by site and spectrum sharing?”

Perhaps it’s best to leave the last word for an actual operator. Cell C believes that at a basic level operators are ready. “Most operators will have prepared their physical infrastructure and software solutions. But whether they are ready to invest so heavily remains to be seen.”

It certainly appears that 5G has a lot to offer, as long as telecoms firms can afford to make the leap to the next generation and find new use cases to complement the more traditional business market customers. ■

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