

chapter 8

Fixed Wireless Access



Paul Colmer,
EXCO member, Wireless Access
Providers Association (WAPA)

How many Africans have connectivity and could therefore reasonably participate in the digital economy? Just 22% according to the International Finance Corporation (IFC), a member of the World Bank Group. Statista paints a more optimistic picture, suggesting that as many as 43% of Africans have internet access as of December 2021.

The African Union has committed to the laudable goal of connecting every African, business and government on the continent by 2030. What remains to be seen, however, is the method by which they hope to support that achievement.

Even Statista, the more optimistic of the two sources, reveals that the global average is 66% of people have internet access, reaching as high as 80% in Europe. There is clearly room for improvement.

Mind the gap

The reality today is that there are 26 submarine cables that connect from Africa's East, West and

Mediterranean shores to the rest of the world. The latest, Equiano, currently provides the biggest chunk of throughput at 144Tb.

Together, Equiano and all the other undersea cables have delivered several benefits for Africans, not the least being more affordable connectivity. That benefit alone supports numerous other downstream benefits, including business and industrial growth, as well as new jobs. The IFC says that some areas have experienced employment growth as high as 10% as a direct result of increased connectivity. The East Africa Submarine Cable System (EASSy) for example, says the IFC, "contributed to a 14% increase in East Africa's GDP since 2009."

We recently collaborated with the Dynamic Spectrum Alliance (DSA) on a study in South Africa over several months. Three further studies were simultaneously conducted by the DSA and its partners for Nigeria, Kenya, and Indonesia, all with similar findings. The findings show that South Africa alone could benefit by up to nearly US\$58 billion over the next 10 years by enabling 1200MHz license-exempt in the 6GHz band, known as WiFi 6E, helping the country to bridge the digital divide, as well as improving access to remote education, work, and commerce.

It clearly demonstrates that international

connectivity must be made accessible at regional and local levels to convey its benefits to bridging the digital divide. Over 160 wireless internet service provider (WISP) members at WAPA use fixed wireless access (FWA) to connect communities. WISPs are the backbone of connectivity in South Africa's outlying centres, providing hundreds of thousands of people with connections and including them in the digital economy.

In fact, we conducted a census of the industry in South Africa and released the report in November 2021. WAPA member WISPs generate over R3 billion in annual revenues, connect more than 200,000 homes, and directly employ 3,000 people.

Challenges galore

One of the major hurdles is the cellular stranglehold on connectivity in many regions across the continent. Mobile operators appear to take an aggressively optimistic view of broadband cellular coverage. In South Africa they claim 99.9% coverage using 3G, 97.7% on 4G, and 7.5% on 5G as of 2021, as published by the Statista Research Department. However, the inability to complete an uninterrupted conference call while on the move may bring these figures into question.

Regardless, coverage paints only one half of the picture. Accessibility is the other half, and cost precludes many from participating online. Two of the five most expensive places in the world to buy 1GB of data are in sub-Saharan Africa and, the Worldwide Mobile Data Pricing 2022 report by Cable.co.uk says, sub-Sahara Africa is the "second-most expensive place in the world for mobile data generally." The average price in sub-Saharan Africa is US\$4.47 per gigabyte, according to the report.

This is even more onerous for a majority of the population that has among the lowest per capita incomes worldwide. Yet another disadvantage is the per-gig billing model that is perhaps overdue for

some of the industry's famous innovation.

Even though poverty levels have generally declined in Africa from 2010 to 2019 according to the United Nations Conference on Trade and Development's (UNCTAD) Economic Development in Africa Report 2021, 34% of African households still survive on less than US\$1.90 a day. 59% do so on less than US\$3.20 per day and 80% on less than US\$5.50 per day.

There are 1.3 billion Africans, which means that a shade over 1 billion Africans survive on less than US\$5.50 per day, all of them people the African Union has committed to connect by 2030. The opportunity is to lift a billion people out of poverty, by today's count, and they would thereafter contribute billions of dollars to the economies where they live, every year.

But that's not going to happen if you try to charge them US\$4.47 for 1Gb of data. It's over 80% of their daily income. Consider that, to be a part of the global digital economy, the average American consumes 34GB of data every day, says the New York Times. Verizon UK's website has a handy calculator that suggests just 30 minutes of web browsing per day will use 1Gb in a month. Add another 30 minutes for streaming movies, music, calling via an app, and social media and you get to 25GB. That's barely even trying, considering that most meetings are now conducted online. In fact, Fortune Magazine says people spend 21.5 hours a week in meetings.

Based on those numbers it's easy to see why so many Africans are excluded from the digital economy.

Hurdling the obstacles

There is unlikely to be any significant change if we continue doing things the way we always have in the past. Mobile operators have no history that indicates they will close the digital divide in Africa.

Developing the solution

The WAPA project that investigated the use of TV White Space (TVWS) as part of an international consortium, including the United States Development Agency (USTDA), unearthed many interesting concepts. Not least was a sustainable new connectivity model.

The model is unsuitable for the incumbent mobile operators because it would disrupt their one-fee-for-all, per gigabyte billing model. However, it is sustainable for smaller service providers, community-oriented entrepreneurs, and start-ups like the WISPs. For the equivalent of about US\$0.60 a day or less we proved that it is feasible to provide uncapped connectivity. That's affordable for households earning incomes of less than US\$180, which puts it within reach of the 80% of Africans who earn US\$5.50 per day.

What could be

This is the potential game changer that Africans need to sustain the backbone of an inclusive

digital economy. Already back in 2011 a McKinsey report showed that the internet accounted for 21% of GDP growth for mature economies in five years. The World Bank's World Development Report 2016 noted that connectivity fosters education, business, work, and job opportunities. These aspects partly formed the foundation of how Singapore was transformed from a third-world country when it gained independence in 1965 into the economic global powerhouse it is today.

So much is possible when we transform connectivity and digital inclusivity. Poor farmers might, for example, be reliably assessed for credit by major financial institutions using mobile phone records. It could release them from being forced to pay the ruinous interest rates of local moneylenders.

WISPs could charge much lower fees than current cellular prices for uncapped connectivity, which is ultimately what people need to participate in the digital economy. But it requires the release of underused spectrum without attempting to opportunistically capitalise to the detriment of marginalised members of our society. ■



Amy Saunders,
editor, *African Wireless
Communications Yearbook*

Connectivity across the African continent has come on in leaps and bounds in recent years, with billions of dollars of investments helping deliver digital transformation for both voice and data markets.

In MENA, the GSMA reported that mobile internet users reached 307 million in 2021; 50% of the population is expected to be online by the end of this year. 4G, MENA's leading technology, accounted for almost 270 million or 41% of

connections in 2021. This is expected to hit 44% by 2025. 5G adoption, meanwhile, is expected to account for 17% of the market share by 2025, some 116 million connections.

Meanwhile, in sub-Saharan Africa, 28% of the population, 303 million people, had subscribed to mobile internet in 2020, according to the GSMA. This is expected to grow to 40% by 2025. 4G accounted for 17% of connections in 2021, forecast to expand to 33% by 2025. An additional 41 million connections, 4%, are expected to be 5G by 2025.

It's clear that internet use among African inhabitants has been increasing, however, most of this internet connectivity is mobile.

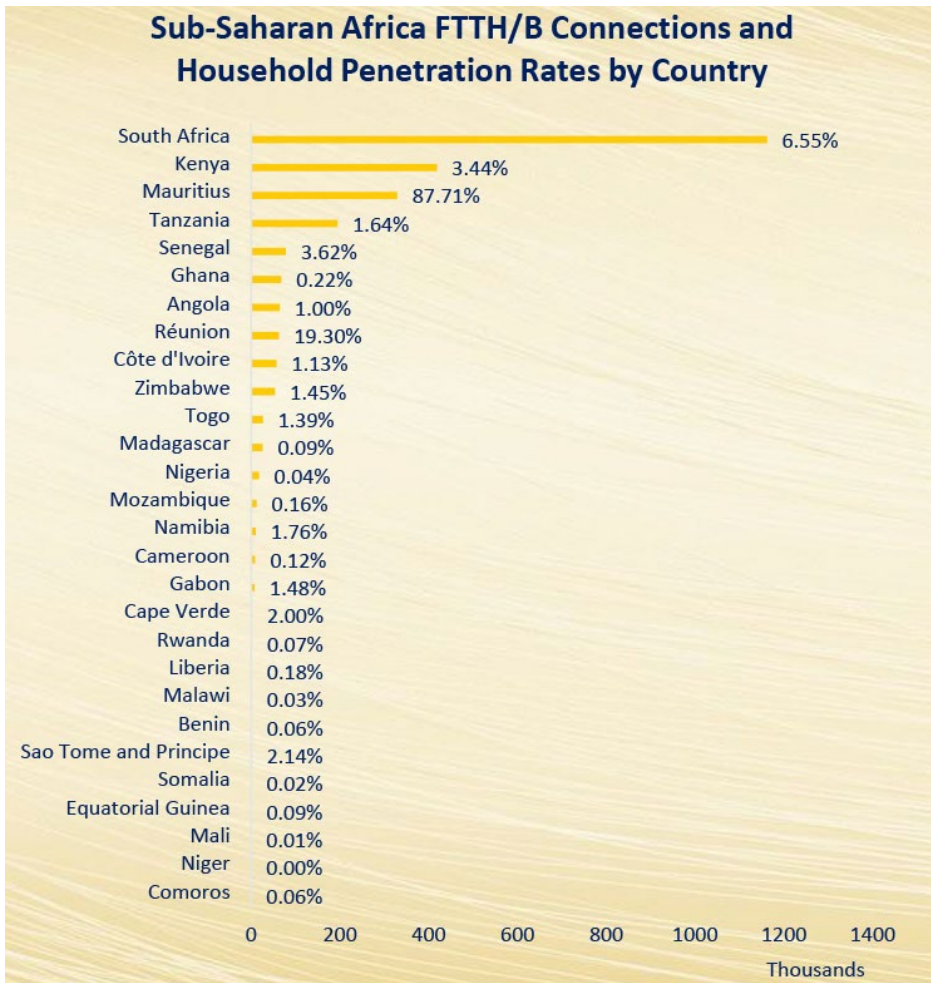
Unfortunately, mobile broadband is unable to meet the download speeds and latency levels of a fibre connection, meaning millions of African users remain underconnected.

Unmet connectivity needs in sub-Saharan Africa

According to the 'Africa Digital Infrastructure Market Analysis 2021 Report,' the COVID-19

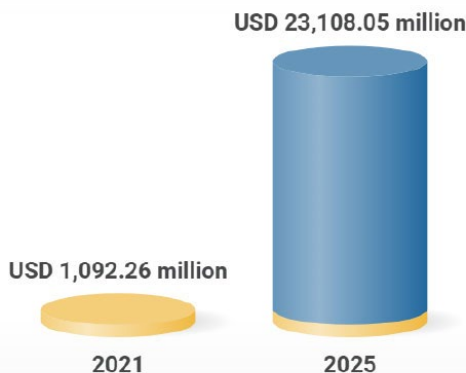
pandemic highlighted some major gaps in the digital divide within Africa. The African Economic Outlook 2021 reported that the information and telecommunication sector was the only sector in Africa with a growing GDP during the 2020 lockdowns.

Many markets in sub-Saharan Africa, especially Niger, Central African Republic, Chad, and South Sudan are underdeveloped. sub-Saharan Africa has just 15% 4G mobile connections. Social



Global 5G Fixed Wireless Access Market

Market forecast to grow at CAGR of 114.5%



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media penetration in Chad, Niger, Central African Republic, South Sudan, and Malawi is less than 3%. Central Africa Republic has just 20.76% of network coverage. In South Sudan, only 14.67% of the population own a mobile device. Many regions either do not have access to the internet, have poor quality internet or affordability of data and internet connecting devices remain high.

To narrow the digital divide in sub-Saharan Africa, urgent government intervention is necessary. 500 million first time mobile subscribers require targeting and a huge percentage of the population aged over 15 years old has yet to buy their first own mobile devices. More than 1 billion people live in areas that are not covered by mobile broadband. Development of 4G to provide higher bandwidth, lower latency and improved spectrum efficiency is needed.

In most markets in sub-Saharan Africa, fibre broadband is a niche service focused on main cities and urban areas. Household penetration of

fibre broadband remains below 2% in most sub-Saharan African countries except for Mauritius, South Africa and Kenya. South Africa is the only country in sub-Saharan Africa that exceeded 1 million fibre broadband subscribers as of 2021, while Mauritius has achieved almost ubiquitous fibre coverage with over 87% of the households enjoying the fibre broadband.

Fixed wireless access

Fixed wireless access (FWA) is considered an enabling technology for delivering fast, cost-effective connectivity for enterprise, businesses, hospitals, homes, etc. in areas where the laying of fibre is prohibitive due to price, physical environment, etc. The next stage of FWA uses 5G technology like mmWave spectrum and beamforming, providing a significant boost to wireless broadband services.

FWA has proven a promising technology the

world over, with ResearchAndMarkets' '5G Fixed Wireless Access Global Market Report 2021: COVID-19 Implications and Growth' stating that the 5G FWA market is expected to grow at a compound annual growth rate of 114.5% from US\$538.9 million in 2020 to US\$23,108 million in 2025. The increasing adoption of 5G is expected to fuel 5G FWA growth during the period.

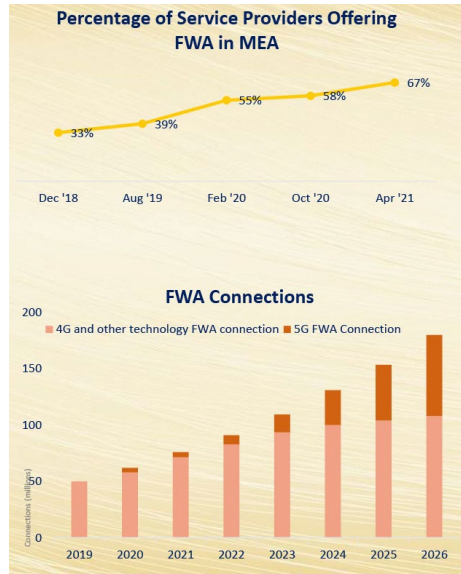
FWA is expected to prove a particular boon to African nations, where fibre connectivity is lacking due to high investment costs and low population density in rural areas. Expected to deliver fibre-like services with improved download and upload speeds and latency, 5G FWA allows for the relatively rapid establishment of affordable broadband, helping close the digital divide and bringing Africa's diverse economies into the digital now.

The advantages for deploying FWA for operators include:

- Fast time to market - deployment is less complex and costly than cable/fibre, and subscribers can be brought onto the network more quickly, delivering a fast return on investment (ROI).
- Ease of deployment - FWA is suitable for sparsely populated or remote areas as well as urban and suburban environments, supporting multiple use cases and deployment scenarios.
- Plug and play - FWA is very simple to install.
- Low cost - existing cell towers can be adapted to offer FWA.

The 'Africa Digital Infrastructure Market Analysis 2021 Report' states that FWA is a fast solution to meet growing broadband service demand, particularly in the areas outside fibre coverage.

Ericsson reported that more than 70% of all service providers were offering FWA services, globally in 2021. Connections are forecast



to exceed 180 million by the end of 2026, accounting for more than 20% of total mobile network data traffic globally. Out of these, 5G FWA connections are expected to grow to more than 70 million by 2026, representing around 40% of total FWA connections. Service providers' adoption of FWA offerings has increased by 12% during the last six months of 2021, and more than doubled since the first measurements in December 2018. Almost 90% of service providers that have launched 5G also have a 4G and/or 5G FWA offering.

Over 2021, the highest regions for FWA growth were those with the lowest fixed broadband penetration, namely the Middle East and Africa, Central and Eastern Europe, Asia Pacific and Central and Latin America.

Network slicing

With the rollout of 5G and 5G FWA, additional pressure is being placed on networks, adding

strain in maintain quality of service (QoS). Duly, network slicing is expected to be paired with 5G FWA to enhance both monetization and utilisation of the new service, enhancing average revenue per user (ARPU) and average revenue per account (ARPA).

Network slicing enables operators to divide a network into multiple virtual 'slices,' which can be optimized for a specific target application or service. Network slices are isolated and provide resources (bandwidth, latency, edge computing resources) requested by a particular application. The end user of each network slice can then be serviced with different priorities, routing, levels of network performance and security capabilities. Slices can be managed and deployed in minutes, and each has key performance indicators used for service assurance. Potential applications of network slicing include extreme mobile broadband (eMBB); ultra-reliable low latency communications (URLLC); and massive machine-type communications (mMTC).

Africa gained its first 4G/5G FWA network slicing in August 2022 in a pilot by Nokia and Safaricom over Safaricom's commercial network in Kenya. The trial utilized a multi-vendor network environment and included RAN, transport, and core as well as software upgrades.

Safaricom is now able to support new types of enterprise network services, including fast lane internet access and application slicing. In addition, Nokia is enabling secured FWA slice connectivity to enterprise locations, as well as to private or public application clouds. Nokia's 4G/5G slicing solution supports LTE, 5G NSA and 5G SA technologies with slice service continuity between the networks. This enables slicing services for all LTE and 5G devices.

This is just the beginning of network slicing in Africa, and indeed the world. More progress can be expected soon, and more R&D outlining

which applications and use cases can be best supported by the technology.

Is FWA the answer to Africa's connectivity challenges?

FWA still has a long way to go, in Africa and abroad.

Key factors limiting market growth include standardisation of spectrum allocation; high infrastructure costs; opposing impact of mmWave technology and the environment; compatibility challenges between traditional and 5G networks; power dissipation in MIMO; and inter-cell interference.

Big picture proponents believe that in the long run, FWA will be unable to compete with multi-gigabit fibre, however, it will still play a valuable role in bridging the connectivity gap, and certainly represents a viable solution for the 10-30% of the global population who will never have access to fibre – many of whom reside in Africa.

Ovum (now OMDIA) reported in its 'Fixed-Wireless Access Drives Broadband Development in sub-Saharan Africa' that while FWA technologies are readily accessible, prices have remained out of reach for many, meaning mobile broadband is still more accessible. Moreover, service providers have primarily targeted urban and semi-urban regions, or specific industrial targets, where they feel they will achieve the greatest return on investment (ROI).

However, Ovum estimated that in future, there will be an addressable market of around 142 million households for FWA in sub-Saharan Africa. The analyst recommended that for operators wanting to make FWA services more accessible and affordable, flexible tariff choices and manageable CPE costs are required. In doing so, they may also win mobile customers using 4G to affect a household broadband connection via a MiFi device or smartphone tether. ■



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Mpho Sefalafala,
CEO, FibrePoynt



Justin Farnell,
business development, FibrePoynt

Following the very challenging circumstances of the previous two years of lockdowns, we have thankfully seen quite a healthy recovery in the South African economy in 2022. The telecoms sector has experienced a strong pick up with fibre network rollout leading the way, together with surging demand for data connectivity. The belated issuing of 5G spectrum to the major mobile operators has also been very welcome and should help the MNOs meet demand and reduce their cost of delivery.

That said, all the major South African fixed and mobile service providers have still not fundamentally addressed the elephant in the room: namely how to offer genuinely affordable internet connectivity to the broader population, who are struggling with the soaring cost of living. 1Gb of prepaid mobile data is still around R70 and a typical uncapped 5G or fibre monthly connection is R500 plus: this is simply too expensive for the

“South African fixed and mobile service providers have still not fundamentally addressed the elephant in the room: namely how to offer genuinely affordable internet connectivity to the broader population, who are struggling with the soaring cost of living.”

majority of South Africans.

FibrePoynt (a division of Poynting Group based in Samrand, Gauteng) has developed and patented a fixed wireless solution that significantly reduces the capital cost (by half in the case of FTTH) of delivering broadband access whilst offering low cost, fast WiFi data access. They have identified over 5 million homes across South Africa that can afford an uncapped router connection of around R300 and have an average mobile spend of between R70 to R100 a month. The prime market for these services is the townships, but we are also looking to connect densified rural communities and old towns.

The approach that FibrePoynt has taken is to focus on designing and manufacturing an end to end, solar powered WiFi solution: from the beamforming antenna and ruggedized enclosure, the meshed networking and WiFi chipset, IoT controller for the solar panel, the cloud billing and authentication platform and android mobile subscriber application, to automated dashboard and analytics. This is a significant differentiator from the plethora of WiFi vendors currently in the market, who tend to focus on either the hardware or the software components, rather than enabling a systems integrator or business partner to deploy a fully operable and licensed solution rapidly and brand the service as their own.

Our business development efforts over the past year essentially focused on signing up value added resellers (VARs) to take the solution to market (under their brand) in designated territories across South Africa that we feel are both densified, under serviced and suitable to deploy outdoor WiFi.

We targeted areas where the air isn't too congested with other WiFi providers. To date, we have deployed MRO-networks in areas ranging from Tongaat in Kwa Zulu Natal, to Soshanguve, Soweto and Cosmo City in Gauteng. The Cosmo City site is earmarked as a flagship site for massive growth in coverage.

The emphasis has been on working with predominantly black business entrepreneurs who have strong roots in the neighbourhood they wish to own and operate networks. Gaining the community's acceptance and support of a new service provider requires on the ground engagements, marketing, and promotions. The response has been fantastic, the community

“The key to technology adoption is one of trust and education transfer.”

sees the value of the service we provide, and our infrastructure investment is in safe hands. It really is Ubuntu in action.

Furthermore, the key to technology adoption is one of trust and education transfer. On both fronts, the bottom-up community engagement approach is really delivering results. Going forward some of the many learnings from this year, and the traction we've gained, I believe will be major drivers in the year ahead. ■

Looking ahead: One of the most remarkable features of building a sustainable and profitable WiFi business has been the level of digital token transactions we are seeing across the networks.

The FibrePoynt mobile application has been integrated with the Flash 1Voucher which enables subscribers to purchase their mobile or router WiFi data packages electronically at a retail point of sale. Besides removing the need to collect physical cash in the townships, the solution goes to the heart of why the Kasi Economy is booming. The Flash vendors (many of which are self-employed Spazas) are paid a commission every time they sell a voucher, the customer has the option to purchase electricity, DSTV, mobile data and now our partner WiFi data. Once the transaction is completed, FibrePoynt has a transparent and auditable ledger that is all managed through the cloud billing platform. These digital transactions currently represent over 80% of revenues and this trend is expected to grow even more next year. The opportunities for Pan-African expansion are massive. Just look how MPESA transformed Kenya mobile commerce. So, we see enormous potential

for taking the solution into Africa in 2023.

As mentioned earlier, the FibrePoynt solution is solar powered. Besides being the greenest network in South Africa, there are other key benefits, most notably the fact that in a country beset by loadshedding, FibrePoynt's networks are off the Eskom power grid! It speaks to a huge opportunity in provisioning internet and solar power to low-cost housing across Africa, in one integral solution.

Finally, it's one thing to offer the townships with low-cost WiFi but the greater challenge is still reaching the towns and villages in South Africa that don't enjoy access to the fibre backbone in the Metros. The cost of backhaul to these communities is still prohibitive, and it will only be when the likes of Elon Musk's Starlink is given license to operate in South Africa that we will see a game-changing drop in the cost of connecting the more remote locations across the country. Will it happen next year? Probably not, but the day we can drop a 30cm dish into a village in the Transkei and break out with FibrePoynt WiFi access will certainly be a case study I'd love to feature in this magazine!



Lux Maharaj,
director of sales, Africa, Parallel
Wireless

Parallel Wireless' OPEN Ran Urban Solutions continues to expand in both LATAM and NA markets, as well as in Europe, the Middle East, and Asia. Parallel Wireless anticipates deployment of its Urban Solution in several OPCOs in Africa by the end of 2023 following extensive and successful lab and field testing with Tier 1 MNOs. We are currently moving forward with Open RAN projects in Nigeria, Tanzania, and the Democratic Republic of Congo.

The topic of moving from legacy network architectures to ORAN is not a new one. There is an ongoing misconception that Open RAN lowers costs compared to traditional RAN vendors. However, the true benefit of Open RAN is the freedom of disaggregating between software and hardware. If an operator acquires a network from a closed RAN vendor, and would like to switch to an alternative vendor, this will result in swapping hardware and software while with Open RAN the operator might replace the software vendor without the need to swap the hardware. This allows MNOs to own their hardware investment even if they decide to switch vendors.

The cellular network industry is undergoing significant changes, with Open RAN being the next logical step in network evolution. Parallel

Wireless is committed to being a disruptive force that moves the industry forward with innovative solutions. Moving to cloud-based solutions is a natural progression for telecom companies, and Parallel Wireless is poised to lead these opportunities. The emerging opportunities we're seeing are with network operators that haven't yet expanded to 4G and or 5G, or operators that want to upgrade their existing network to a new network, or operators who would like to expand their coverage.

One trend we're noticing is the shift toward Open RAN. This approach results in a reduction of OPEX and CAPEX in the long term. MNOs are now becoming more confident in introducing Open RAN as an alternative to traditional deployments. We're also seeing the emergence of RAN Cloudification, which can provide significant saving in site operations, removing all data processing from the site to a central data centre/cloud.

The cellular industry is undergoing significant changes and will undoubtedly move to Open RAN. Parallel Wireless sees itself in this process and will be a leading disruptor of the industry. The shift to cloud-based solutions provides new opportunities for innovation and disruption of the industry. The key benefits of Open RAN include simplified operations, increased flexibility, and scalability. These factors will contribute to reducing the total cost of ownership (TCO) over time. ■

Looking ahead: The pandemic forced the industry to rethink its strategies, business opportunities and plan more effectively.

The expectation is that Open RAN will be deployed in the new 5G deployments in parallel to the existing 4G networks. This structure seems to be the best way for CSPs who gradually want to deploy 5G networks with no interruption to the

current service.

At Parallel Wireless we provide unified ALL G (2G/3G/4G/5G) software-enabled solution. Our innovation and excellence in multi-technology, open virtualized RAN solutions, have been recognized with 65+ industry awards. Our customers include 50+ leading CSPs worldwide and we were recently named a 'best performing vendor.'



Ted de Boer,
regional sales director,
southern Africa, Siklu

The growth of Gigabit-speed fixed wireless access (FWA) services based on the millimetre wave (mmWave) frequencies of 60 and 70/80GHz (the V- and E-band, respectively) continued apace in South Africa in 2022. Significant progress was achieved in multiple markets and service applications, including residential broadband (particularly in the townships), network enhancements for WISPs and heavy industry. Still, much work needs to be done to realise its full potential.

2022 has shown that there is a need to expand into the V- and E-bands as even licensed frequencies are in reality ‘full up’ or cannot deliver enough capacity due to other factors like competing traffic loads and noise. For instance, the 5.x GHz bands for shorter range, ‘last mile’ hops (e.g., 500–1500m) are congested and new technologies that can deliver the required capacity are too expensive for the average integrator.

Recent studies have shown that using 5G FWA bands such as V- and E-bands costs 80% less than fibre, with the assumption of a lack of existing fibre available for leasing or sharing. In suburban areas, the costing comes out as 70% less, based on a fibre deployment requiring new poles or trenching. In urban areas with little existing fibre infrastructure, FWA would save up to 45%.

Siklu is seeing intense interest in using mmWave for applications such as backhaul using E-band for the longer hops from a fibre PoP and using V-band for neighbourhood connectivity to provide lower-cost internet service to townships in lower LSM areas

(the SAARF ‘Living Standard Measures’ classifications). It has been great to see the innovation coming from South African entrepreneurs and Siklu offers expertise and technology options to help them fully explore these opportunities.

Using municipal WiFi style projects to address the digital divide is another area where mmWave connections can deliver the needed capacity faster and more cost-effectively. One issue in these scenarios is filling in ‘fibre gaps’ and the WISP TCS took that to a new level by establishing hops as short as 300m. TCS have their own fibre backbone network and have been deploying wireless networking to create cost-effective backhaul links from customer premises to the backbone. Extending the fibre to fill these 300m gaps was considered, but even at that modest distance, TCS and Siklu determined that an E-band wireless option would still be considerably less expensive and faster to install.

Another factor with E-band links is that ICASA has enacted a ‘lightly-licensed’ scheme to use these bands – giving a user up to 30 days in which to register – and have taken other measures to facilitate access to them. It is also less expensive than other licensed bands at less than R1,400/year for a 10Gbps link. Another interesting point is that traditionally E-band has been used for much longer links – as much as 20km in certain conditions – and the TCS solution effectively demonstrates the versatility of E-band technology.

A further area of growth for mmWave resides in the critical communications connectivity requirements for mining and harbour operations. mmWave can provide the high capacity and ‘uptime’ required for these drivers of economic growth, which is a highly desirable benefit given the current constrained economic

conditions in South Africa and globally. Mining operations are in remote areas and there are options of building a private LTE network or teaming with an MNO for connectivity. However, private LTE, 5G or commercial cellular networks operate well for narrowband IoT connections but may run into bandwidth or latency issues for direct HD camera connectivity or backhaul. Fibre can meet these requirements, but it is often prohibitively expensive to deploy.

mmWave systems operating in the 60, 70/80GHz bands present an excellent solution. mmWave radios have extremely narrow beams, which is a key advantage when deploying and upgrading wireless networks. Narrow beams and abundant spectrum (over 24GHz to choose from) make it easier to design a network that would have zero impact on other wireless systems. When it comes to this type of RF planning, mmWave radios excel with regards to several considerations.

For instance, mmWave has the flexibility to provide both ‘blanket’ coverage and the required data performance where needed. Networks at critical infrastructure sites are more uplink than downlink and the narrow beams of mmWave make signal and interference modeling and planning much easier. This will prove useful in cases where it might be necessary to increase transmit power. mmWave radios offer complete coverage of an area and hard to reach places with a combination of both point-to-point and point-to-multipoint configurations.

2022 has been marked by lots of evangelizing to promote the value and benefits of mmWave technology. Working in conjunction with WAPA, Siklu representatives have travelled throughout the country to visit existing and new customers and are meeting with regulators to explain how regulations can be updated to include the mmWave bands for a variety of service offerings. ■

Looking ahead: ICASA has made progress in granting greater access to E-band and we are hopeful that they will address the current limitation on using V-band for point-to-multipoint outdoor deployments. We expect such action as, with regards to the formulation of the National Radio Frequency Plan of 2021, multiple responses for the release of 60GHz bandwidth for outdoor PTMP use were submitted – but not acted upon. The omission of these applications from the new regulations has caused a delay in the roll-out of connectivity options that would help close the digital divide in South Africa.

Using V-band could greatly benefit the SA Connect program, which aims to provide 80% broadband connectivity in communities and government facilities with a minimum speed of 10Mbps, and 100Mbps for high-demand facilities

such as Home Affairs. ICASA remedying this situation would enable Siklu and partners to use the most cost-effective equipment to deploy fast internet service to the areas that need it most.

We see a tremendous opportunity for the municipalities of South Africa to ‘get smarter’ by leveraging their lighting infrastructure. As seen in a recent project in Tampere (Finland), Siklu is providing the mmWave broadband component of the new ‘BrightSites’ solution, from Signify. BrightSites is converting streetlights into a wireless connectivity grid which can facilitate a range of digital city services, such as: IoT, security and traffic monitoring, 4G/5G small cells, as well as ‘digital inclusion’ initiatives including municipal WiFi and residential broadband access.

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Intracom Telecom is a global telecommunication systems and solutions vendor operating for 45 years in the market. The company has become the benchmark in fixed wireless access and it successfully innovates in the 5G/4G wireless RAN transport and small-cell SON backhaul international arena. Intracom Telecom offers a comprehensive revenue-generating software solutions portfolio and a complete range of ICT services, focusing on IoT, SDN/NFV, Big Data analytics & data-driven intelligence, and Smart City solutions. Moreover, it addresses the Energy & Utilities industry, emphasizing on smart metering and end-to-end IT solutions. Intracom Telecom is also active in the defense sector providing security integrated systems for critical infrastructure protection and border surveillance. The company has extensive know-how and a proven track record in the market, serving fixed and mobile telecom operators, public authorities and large public and private enterprises. Intracom Telecom maintains its own R&D and production facilities, and operates subsidiaries worldwide.

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Parallel Wireless is a leading provider of centralized RAN over cloud-based Open RAN technology for wireless network operators. We design our Centralized RAN solution to introduce new innovations and reduce total cost of ownership (TCO), improve scalability options, and increase power efficiency for global MNOs.

We achieve this through full RAN centralization, RU-DU separation, and power efficiency. We are engaged with over 50 global MNOs and have been recognized with over 74 industry awards. We believe the power of software can unlock amazing opportunities for the telecom industry by helping customers reimagine their networks. At the core of what we do is our team of re-imagers who value innovation, collaboration, openness, and customer success.

Solutions

Customers

Company

Resources



FibrePoynt

FibrePoynt; Unit 4, N1 Industrial Park, 79 Landsmark Ave, Samrand, 0157, South Africa
www.poynting.tech
www.fibrepynt.co.za

FibrePoynt manufactures and sells solar-powered wireless broadband antennas, termed HomePoynts, that enable the implementation of a telecommunications network infrastructure system for last mile delivery of broadband data services to underserved high-density residential communities

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BSS/OSS Suite

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