chapter 3 Value Added Services

Bulent Unsal,
head of telco, EMEA south
SAP Middle East

5G is the fifth-generation mobile communication standard which promises to deliver twenty times the performance, extend the software defined network, and weave in new capabilities such as edge services and new security features. For the first time, performance intensive and mission-critical applications can be provided through a mobile network.

5G is one of the series of what are called; "transformative technologies". The others include 'artificial intelligence', 'the Cloud', and 'the Internet of Things'. These are said to be shaping tomorrow's world, singly or together.

In the simplest terms, 5G is a collection of tools that should allow 'higher speed' internet to be available by 'wireless' rather than by cables and phone lines brought into the home or office.

For example, a 5G network coupled with SAP software can guarantee a level of connectivity and response time to a robotic arm that's performing a remote surgery, so we can wrap a new business model around this and charge for this as a service. In a similar vein, we can also expand this to remote equipment diagnostics and novel retail experiences as well using 5G as a platform for innovation. As a result, we see 5G as a game changer as we look to the next two to five years.

What could be the general impact of 5G on society?

Basically, 5G networks will bring three important capabilities which are;

1. **Enhanced mobile broadband (eMBB)** – mainly speed but also include coverage, capacity and data rate. eMBB will bring high-speed mobile broadband to crowded areas, enable consumers to enjoy high-speed streaming and will allow enterprise collaboration services to evolve.

2. **Massive machine-type communications (mMTC)** – mainly connecting everything using low data rate and low energy. 5G is expected to drive IoT through the deployment of a considerable number of

low-power sensor networks.

3. **Ultra-reliable and low-latency communications (URLLC)** – mainly low latency. 5G's low latency and safety characteristics will play well in the evolution of intelligent transport systems, enabling smart vehicles to communicate with each other, and creating opportunities for connected, autonomous cars and trucks.

5G is an opportunity to empower citizens and businesses. 5G will play a key role in transforming cities into smart cities, allowing citizens and communities to realize and participate in the socio-economic benefits delivered by an advanced, data- intensive, digital economy.

5G promises to deliver improved end-user experience by offering new applications and services through gigabit speeds, and significantly improved performance and reliability. 5G will build on the successes of 2G, 3G and 4G mobile networks, which have transformed societies, supporting new services and new business models. 5G provides an opportunity for wireless operators to move beyond providing connectivity services, to developing rich solutions and services for consumers and industry across a range of sectors – and at affordable cost.

How is 5G related with the service provider challenges?

Service providers have two main challenges; A. their cost is increasing & B. their ARPU is decreasing. Therefore, by pursuing different strategies, ranging from a consumer focus to expanding into new enterprise opportunities, service providers primarily see benefits in 5G in two areas. The first is as a cost-effective technology to handle the ever-growing data traffic demand from consumers; the second as a possibility to break the declining average revenue per user trend by offering new advanced 5G services.

Service providers may find new sources of revenue in various B2B2X opportunities, given that 5G excels in many key technology areas, such as peak speeds, latency and positioning accuracy to mention a few. Many industry use case applications can be created or enhanced by 5G. A shift in the value chain is therefore possible, with service providers able to address many new vertical use cases driven by the business transformation that new advanced technologies such as 5G, AI and IoT will bring.

The 5G network will drive disruptive change and transformation across all industries by bringing together wireless connectivity, mobility, IoT, cloud computing and big data. At the same time, telecom operators have the opportunity to become the best enablers for industry applications and trustworthy business partners for industry customers; supporting them through continuous technical innovation and industry cooperation.

By taking advantage of the rapid and reliable communication capabilities of 5G networks, as well as the enormous number of connections 5G can support, 5G will enable operators to better serve customers in all industries. Telecom operators will be able to position themselves as the 'best enablers' for industry applications.

What's the impact on SAP?

From a technical perspective, 5G has a significant impact on SAP solutions as we weave edge services, data management, analytics and digital supply chain solutions into the IoT and 5G stacks. This will entail the development of custom APIs and the creation of microservices. More importantly 5G has a critical impact on our ability to spark customer innovation conversations regarding our Intelligent Enterprise story as well as to support hyperscaler adoption.

Service providers are seeking to unlock revenues from these technologies in the enterprise using 5G, but they lack the business process expertise to enable these services without support from partners such as SAP. As we position 5G and our data platform/Intelligent Enterprise story with customers, we have two guiding principles underpinning our sales motion: our **customer driven innovation** and an **ecosystem approach**.

There are significant challenges for enterprises regarding data management and data strategy. SAP's data management platforms will be key components of how we enable 5G adoption for our customers across 25 industries. And with the growth of edge computing, service providers are well positioned to deliver data management as a service and platform as a service, so the value chain for SAP's software stack and telco's infrastructure capabilities will be closely tied together.

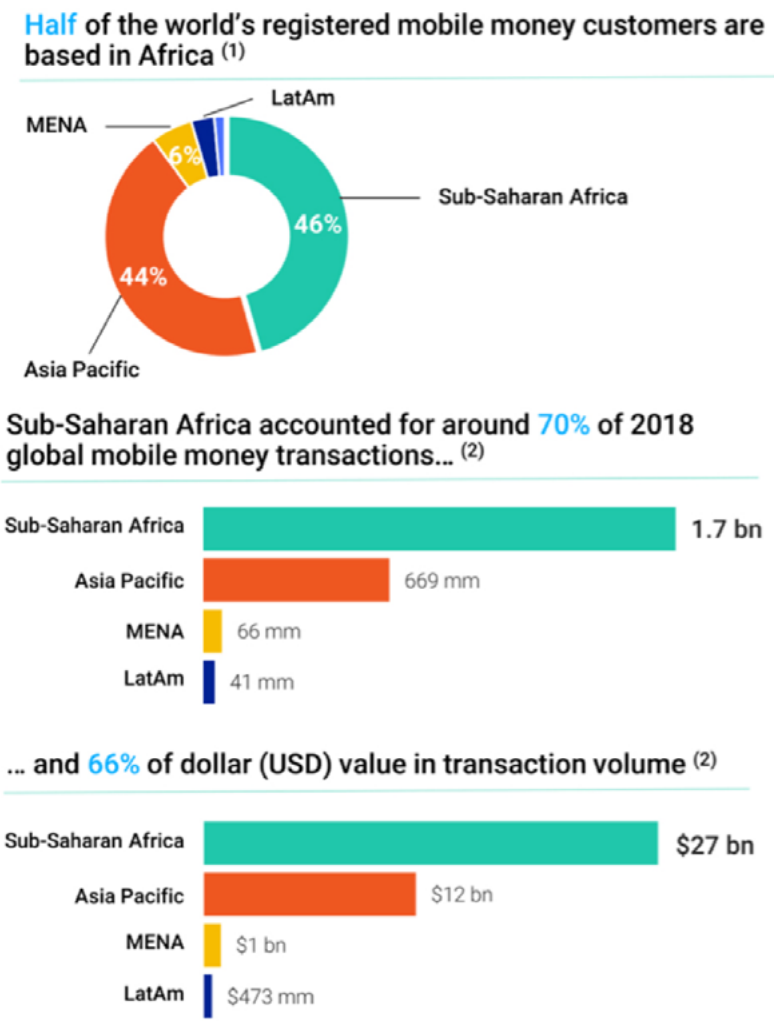
Intelligent connectivity services enable service providers to bundle SAP's data management platform, including edge services, with next-generation connectivity, providing enterprises the technology foundation to scale from on premise and cloud to the edge of the network for data transmission optimization, latency-sensitive use cases, and deterministic performance of business processes. Enterprise customers can make their assets and employees at the edge operate more efficiently by processing business semantics from mission-critical applications such as SAP S/4HANA at the edge for real-time action. For example, a 5G network coupled with intelligent connectivity services from SAP can help ensure the level of connectivity, latency, and coverage that is required for scenarios from remote equipment diagnostics to novel retail experiences. And the service provider can wrap a new business model around this and charge it as a service. ■

Leo Holtz,
research assistant, Africa Growth Initiative – Brookings Institution

Financial technology, or "fintech" as it is widely known as, is accelerating financial inclusion in sub-Saharan Africa—a region that traditionally suffers from limited access to formal financial services, such as credit, insurance, and banking. While in recent years the opportunities made possible by this technology have opened doors for many in the region—especially low-income households—users of fintech are utilizing the tool in more sophisticated ways, as reported in a recent paper by Financial Technology Partners, a boutique investment banking firm, which reveals promising investment trends in the African FinTech industry.

The population of Africa will likely continue to utilize the region's rising cellular and internet penetration and adopt emerging digital payment, banking, insurance, and lending services. As such, the report's authors speculate that Africa's demand for financial services—especially as the population remains largely un- or under-banked while also being the world's second-fastest-growing payments and banking market—will soon bypass traditional banking systems. Importantly, the continent is

Figure 1. Composition of sub-Saharan Africa's mobile money utilization



Source: Financial Technology Partners, "FinTech in Africa: Leapfrogging Legacy Straight to Mobile," 2019.

already the largest adopter of mobile money transfer systems (Figure 1), comprising nearly half of the globe's registered mobile money customers, approximately 70% of global mobile money transactions, and two-thirds of the transaction volume by value. Despite this success, challenges to the use of the tool in new and innovate ways persist: Indeed, the authors contend that lingering low penetration of cellular and internet networks, particularly in rural Africa, suggests mobile money services still have significant growth potential in the region.

The steep influx of capital raised by African fintech start-ups provides evidence of the current and future prominence of digital financial services across the continent (Figure 2). This digital industry has experienced consistent growth since 2016 in terms of both the number of transactions and financing volume.

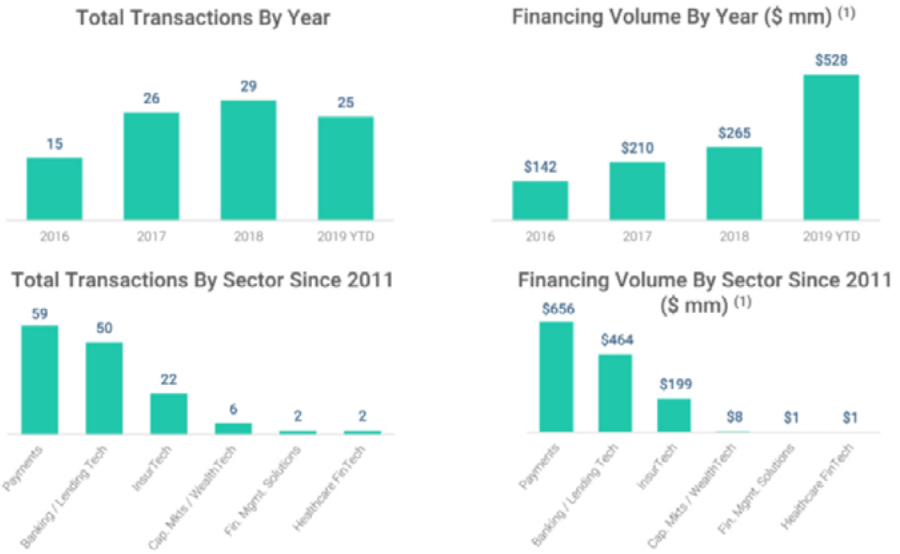
In terms of types of services, FinTech firms specializing in digital payments dominate sub-Saharan Africa's fintech investment landscape by both financing and transactional metrics. Meanwhile, FinTech dedicated to digital banking and lending services follows closely behind in the number of investment transactions, but receives 40% less financing than digital payment services.

Notably, many of the region's local FinTech start-ups are based in sub-Saharan Africa's tech hubs: Nigeria, Kenya, and South Africa. However, due to FinTech's geographic concentration in Africa and its limited, but expanding, access to financing and business scaling, the authors indicate that African FinTech firms predominantly operate within their country of origin or regionally, and, consequently, Africa's digital payment systems are highly fragmented.

The proliferation of mobile financial services, according to the authors, indicates fintech's potential to revolutionize financial inclusion in sub-Saharan Africa. For investors, write the authors, demographic trends in the region, such as a sizable fast-growing population, the expanding middle class, and the significantly underdeveloped financial services industry, signal the region's burgeoning demand for digital financial technologies.

For African consumers, FinTech innovations provide access to vital financial services and so the authors recommend improving the penetration of telecommunications infrastructure, which will continue to enable equitable access to finance for all Africans. ■

Figure 2. African fintech investment flows over time



Source: Financial Technology Partners, "FinTech in Africa: Leapfrogging Legacy Straight to Mobile," 2019.

Jeppe Dorff,
chief product and technology officer, Clickatell

When we celebrated New Year's Day in 2021, the world had already had ten months of dealing with the Covid-19 pandemic. Despite that, companies were still trying to wrap their heads around how best to serve customers and staff in a shifting world. Right after our medical workers, technology was one of the heroes of the pandemic and particularly telcos leaned heavily on tech as entire support teams and contact centres were suddenly forced to work remotely.

2021 was when Clickatell saw telecommunication companies, and MNOs (Mobile Network Operators) in particular, really grasp the immense opportunity of chat. Global statistics painted a clear picture of how consumers wanted to engage with each other and their favourite brands. In fact, by early 2021, the adoption of chat was growing faster than any other digital channel with WhatsApp reporting over 2 billion global users and Facebook Messenger over 1.3 billion users.

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With their contact centre agents struggling with the new environments, equipping them with solutions that would allow them to engage with customers on the channels of their choice became mission critical for telcos worldwide.

Clickatell saw a significant spike in our engagement with MNOs in 2021, much of the interest driven by the result we had achieved with MTN. This included helping MTN South Africa become the first global telco to launch chat commerce functionality via WhatsApp in 2019, which would have made a big difference to how they were able to handle the sale of wireless subscription bundles in an environment where on-the-ground sales support was often interrupted by lockdowns and Covid protocols.

When it came to empowering telcos to keep serving customers, we bolstered our contact centre offering and launched our Chat Desk and Chat Flow solutions. Combining the power of live chat with our Chat Desk, a live-agent digital contact centre solution, and unassisted chat with Chat Flow, a chat commerce workflow builder, providing automated chat with drag-and-drop, no-code, functionality, significantly accelerating "time to market" for our partners and customers.

By making customer service accessible with popular chat apps, telcos can eliminate long hold times for agents in contact centres, and meet consumers' needs faster and more conveniently in the chat apps that they already use daily.

Early 2021 saw a material shift in how businesses were thinking about how they were engaging with stakeholders. While many were still speaking about customer experience, Clickatell saw a move toward 'total experience'. This can be thought of as customer experience, user experience and employee experience combined.

Covid rapidly accelerated this evolution and

savvy companies understood that it wasn't just about having good tools for end-users. As workforce dynamics changed during 2020 and into 2021, it became apparent that employees are users as well. They have similar expectations to the brand engagement internally as consumers have. They also want it easy, fast, and frictionless. By adopting a total experience philosophy companies can leverage technologies to help them transition to a more human-centric entity.

Clickatell also saw an acceleration of Robotic Process Automation (RPA). As digital transformation made it onto the executive agenda, the bottleneck most often becomes existing processes and procedures which in many instances are manual and haven't been invested in. RPA, BPA and other automation tools became part of the toolkit that was going to solve the total experience paradigm.

When it comes to MNOs the RPA sub-field of hyper automation (which Gartner describes as "a business-driven, disciplined approach that organizations use to rapidly identify, vet and automate as many business and IT processes as possible.") is blossoming. Total experience relies heavily on this. For instance, if your customer wants to do simple, repetitive transactions, like airtime or data top-ups, why should they have to deal with a human? It wastes their time, MNOs' staff time and adds cost layers of cost. For example, MTN Chat allows their 15.5 million customers who are WhatsApp users to buy bundles within the chat platform and plans to offer additional self-service options.

Additionally, total experience would enable MNOs to automate staff engagement. This would allow them to perform simple administrative tasks and queries without having to engage with colleagues, driving further efficiencies into an already overworked and often diminished workforce.

This year 5G became more a reality in Africa, when Safaricom rolled out a commercial 5G network in Kenya. The technology brings expectation of faster, more robust communications, but also the ability to leverage technologies, like hyper automation and others across the African business network.

Work we are doing in Nigeria shows that adoption of new technologies, like 5G, not only benefits local MNOs' bottom line and spur their further growth, but in turn will have huge knock-on effects on other socio-economic imperatives such as digital inclusion and even financial inclusion. ■

Looking ahead: We believe the opportunity for chat to play a significant role in how local MNOs engage with customers is also encouraging. 2020 data shows 93% of Nigerians aged between 16 to 64 currently use WhatsApp. The growth of chat commerce could change how Nigerians engage with local brands and, with the latest round of mobile banking licences granted, could also change how Nigerians engage with financial service providers.

In conclusion, it's difficult to look back at 2021 without seeing it as being an extremely challenging year faced by all. But we believe the twenty / twenty view of these pandemic years will shine a spotlight on just how beneficial the rapid acceleration of certain philosophies and technologies - like total experience and hyper automation - have been. The Clickatell team is the first to point out Africa never simply follows the trends. We believe the next three to four years could see innovation around these technologies not only allowing companies in Africa to forever change how they engage with customers, but could well result in African businesses, especially those in the telco space, leapfrogging their global counterparts. We are looking forward to playing a pivotal role in helping this happen.

David Lofti,
CEO, Evina

2021 was a year marked by the need for mobile operators to ensure financial security and overcome challenges because of the pandemic, such as the increase in mobile phone based fraud. Worldwide and more acutely in Africa, mobile operators play a significant supportive role to business and daily life. Increasing mobile use, significantly for payments is a growing profit area. Potential for monetisation of customer data exists, presently 1% of the potential is being realised, data that FinTech companies are eager to access. Mobile operators could become the main players in the payment ecosystem, but need to become the users of customer data, rather than just network providers and data sellers.

Fraud currently posses a significant problem for mobile operators and the payments system. 2021 has seen increased fraud, as more people went online and the physical payment system was suspended because of Covid-19.

In 2020 Africa saw US $4 billion in fraud and therefore Evina has championed the fight against mobile payments fraudsters.

Evina estimates that in Africa 19% of mobile phone financial issues were subject to fraud. Commonly attempts are made to make payments without the account holders' authority.

Evina estimates in Egypt 25.5% of transactions were suspect and this was 35.8% in Kenya.

Malware in applications or "malicious apps" is becoming more common and made up 17.6% of all fraudulent attempts across Africa in the period January to June 2021. Evina has detected a series of malicious apps, due to the level of fraud attempts on these apps. These included scanner apps, messaging apps, photo editing apps and even medical apps such as blood pressure apps.

1st half 2021 saw clickjacking account for 62.3% of attempts, also mobile carrier billing fraud and remote-controlled fraud saw 7.6%. Evina has helped mobile operators manage malware that takes control of devices to commit fraud. Fraud is increasing with mobile money and manipulation of individuals to make payment.

The cost to mobile operators in dealing with fraud is hitting their financial margins.

Evina's cutting edge technology is available to operators in the African market to cut fraud.

Evina's DCBprotect, which detects malicious bots and Evina's Eyewitness, which records fraudulent behaviour for payments was implemented by Vodacom allowing its millions of customers security and confidence in using network payments. Mariam Cassim of Vodacom commented, "The protection of our customers against all forms of fraudulent activity is our top priority ... Introducing Evina DCBprotect as the solution is a testament to our efforts to stay ahead of fraudsters and create a fraud-free digital environment ..."

Like Vodacom other mobile operators, merchants and payment aggregators in Africa are taking the initiative to protect mobile payments and make day to day operations,

"Fraud is increasing with mobile money and manipulation of individuals to make payment"

which is resulting in fewer complaints and increasing brand confidence.

Along with Vodacom, many other mobile operators, merchants, and payment aggregators in Africa have taken the initiative to protect their mobile payments and improve their day-to-day operations, resulting in fewer complaints, improved brand image, and increased business opportunities to boost the mobile payments industry in Africa.

Evina has launched a mobile money anti-fraud service this year. Fraud levels are hitting consumer confidence and raising concerns with regulators.

As a cybersecurity company, Evina strives to protect mobile phone transactions and the interests of users, which is why over the last 15 years we have invested in research and development to produce advanced technology with capabilities to identify between malware and a human user and when payments are being made legitimately and not under duress.

It's the only solution able to do so and it is why Evina has been recognized by the mobile ecosystem as the Best Direct Carrier Billing Fraud Solution at the industry-leading Global Carrier Billing Summit two years in a row, and Best Financial Clearing Solution by Juniper Research this year.

Today Evina's anti-fraud technology detects 99.94% of fraudulent transactions in more than 70 countries across the globe and protects more than 16 million transactions a day, with a large portion originating on the African continent. Our aim is to continue to fight mobile fraud with the most precise technology and to give support to mobile operators to assist them in their growth within the market.

Working together, Evina and mobile operators can shape the future of the mobile payment industry, making it more secure for customer's payments and to help operators increase their market size and profitability. Therefore, if there is one main thing we can learn from the mobile industry in 2021, it's that mobile operators need to manage mobile fraud to untap their financial potential and to progress their way to the top. ■

Looking ahead: Along with the increase in cell phone usage, mobile fraud worldwide is on a growth curve for the next few years, at least. Behind these fraud attempts are criminal organizations, and today all of their eyes are on Africa, characterized by many regions that lack adequate protection against mobile fraud and an avid and diverse usage of mobile phones.

According to the MEF's 2021 consumer survey on mobile payments, security is the number one reason users worldwide choose a specific type of payment. In fact, when users get defrauded using a specific payment method, they lose trust in this method and will lean more towards switching to a mobile operator that can offer a more secure method. Many mobile operators in Africa have lost clients due to this exact issue, heavily damaging their reputation, all because of fraud and unprotected payment channels. This phenomenon will be more and more common in the future as the competition between MNOs increases.

To add to the tense competition, international FinTechs and technology giants have noticed the potential to develop their mobile activities in Africa and enter the scene. African mobile operators must not succumb to the pressure, and instead mobilize their resources and set the 2022 battlefield, where trust and security will be the winning factors.

Tommy Eriksson,
CEO of Seamless Distribution Systems

This past decade, the world has fast tracked to technological transformation. The digital world revolves around connecting people and systems enabling them to share data anytime and anywhere through innovative digital solutions.

As we surface from worldwide pandemic restrictions, digital connectivity has become a societal lifeline.

The sharp growth in Mobile Financial Services and digitization of distribution are examples of how telecoms and service providers have catered to the needs of unconnected communities worldwide during Covid-19.

Telecom operators and technology service providers collaborated, bringing unbanked people into the financial system, enabling remote working. Recent years have seen greater push towards digital money and MFS (Mobile Financial System) plus more rapid moving of payment channels to mobile.

Rapid adoption of mobile money is partly due to its ability to enable telecoms to access new revenue streams by:

- Becoming facilitators of third-party retail goods
- Enabling management of all financial transactions through one platform.

In Kenya, payments and transactions facilitated through mobile money solutions now equate to one fifth of kenya's gross domestic profit.

With disruptive technologies like 5G and Cloud native, the telecom industry is in a dawn of new reality instead of incremental evolution. The change induced by these technologies will run significant interference in today's reality. This is signified by the pendulum shift from monolith architecture to cloud computing and microservices for increased flexibility and modularity.

With reliability, increased bandwidth, ultra-low latency 5G has been adopted by telecom operators because of its business benefits and ability to support AI, IoT and cloud. They regard 5G as a significant leap forward, with potential to trigger a series of other disruptive changes. It's evident there's increased emphasis on transformation from service-oriented architecture to cloud native approach, and especially microservices architecture within that. One predominant reason for transformation is a cloud native approach is more geared towards dynamic environment in a constantly evolving landscape. This not only makes scalability easier but also helps decrease their hardware footprint.

Within the digital transformative shift, IoT represents growth opportunity for service providers to become a hub for selling associated hardware, particularly networking and security equipment. The usage and value of IoT for telecom operators is more than just providing better connectivity to consumers. Instead of focusing solely on expanding network connectivity, telecom operators can reposition themselves as IoT access providers.

With this technology solution, telecoms are able to turn unstructured data into actionable insights. By further leveraging data analytics, they are able to extract valuable information from data passing through their system with IoT technology.

Recently, the focus has shifted towards consumer services, and subsequently, data analytics and business intelligence has become the cornerstone of growth. To meet business objectives and digital agendas, more telecoms are making efforts to immerse data analytics into core business operations, not

only enhancing product offerings through personalization but also for data-driven and informed decision making.

With the way the telecom industry is moving, the new paradigm will be more focused on managing end-to-end services, instead of just managing networks. Telecoms need to pivot their digitization and automation efforts towards services instead of networks, which in turn will require disruption of existing business processes and models.

The telecom universe is also challenged in more than one aspect. Tech and automation may be moving at pace, but often, operating companies lag behind. This could be due to lack of right infrastructure, fragmented systems within the company, or their own resistance to the change.

In many cases, telecom companies running on their legacy systems tend to upgrade systems in small, incremental steps. They are disinclined towards complete evolution and make changes within small parts of their system. Additionally, concerns around data privacy hampers the complete transformation to cloud native and a XaaS approach.

Paradigm shift from traditional service-oriented architecture to cloud native approach and microservices architecture is a game changer for Seamless Distribution Systems (SDS). Equipped with microservices and advanced technology stack, SDS is able to achieve cost efficiency, increased scalability, and faster time to market. This approach proved to be more suitable to the unified product suite SDS offers, the plug and play modules that act as separate components instead of a single solution are more easily harboured within this architecture.

Impact of the pandemic has made it evident that there will be emphasis on distributed and remote functionality in the future which highlights the requirement for a consolidated sales and distribution, and convergence of physical and digital product offerings.

The SDS unified platform, with multiple encapsulated modules and solutions has the ability to integrate with all kinds of BSS requirements and third-party platforms. The foundation of cloud native makes the solutions and platforms compatible with any system and facilitates in supporting all kinds of deployments.

Apart from the enhanced performance through data-driven insights, the analytics engine also paves the way for an effective transformation from SaaS to XaaS strategy. ■

Looking ahead: SDS will focus on servicing and expanding within core markets across Africa and the Middle East region, where a strong network of clients and partners is already in place.

SDS's near future business growth strategy will be to envelop data analytics and immerse artificial intelligence across all product categories. The addition of powerful data analytics tools is critical for growth, especially considering that today customer journeys are more immersive than previously.

SDS is also constantly striving for an agile and flexible business model to keep pace with industry trends. SDS has been focused on automating indirect sales channels for telecoms, however, with more subscribers turning to digital apps to communicate, telecom operators, pivoting towards facilitating direct sales will be crucial.

SDS has an unwavering vision to enable higher control and last-mile visibility to telecom operators in an effort to help them monitor distribution chains, optimize processes and ensure smooth sales across all consumer touchpoints. Looking to 2022 only confirms how enhancing digital buying and selling experiences will be make or break for telecoms and that's precisely what we are looking to champion.

Osman Perksoy,
VP of digital Services, Enkudo

Enkudo is a company that enables digital mobile consumers to access globally supplied digital content and services through accessible payment methods such as Direct Carrier Billing (DCB) and mobile wallets. With a young and increasing population, Africa is one of our major target markets due to the relatively limited adoption of conventional banking and credit services.

Throughout 2020, Enkudo moved forward with multiple projects across the continent of Africa. We signed a contract with a major global mobile operator in Ghana, launched our platform with the second largest operator in Algeria, integrated with a leading Payment Services Provider in Nigeria, introduced a streaming video service in Tunisia and pursued qualified leads in various African countries. Overall, it was an effective year for us, and despite the challenges of the pandemic globally, we maintained a high pace of growth in Africa.

The complexity of business processes and the changing regulatory environment was the biggest challenge for Enkudo. For example, due to a Nigerian regulation enforcement, we had to introduce another local partner in the value chain, which added to the integration and the operations costs of our operations and squeezed our margins.

Another challenge was the low predictability of payment timelines and financial risks due to exchange rate fluctuations, as a result of the political volatility in some African countries. With one of our accounts, we experienced significant financial loss due to the sharp increase in exchange rates while we were on hold for delayed payments.

Finding proficient local partners that we can work in alignment with, is still not an easy task in Africa. Most local companies in the telecom space have limited experience in the digital services domain. In our engagements, we spent significant time and effort in the training of our partners regarding the fast-growing digital services domain.

Despite all the challenges, the opportunities in Africa remain attractive for Enkudo. We are still covering a small portion of the region and we plan to replicate our existing business engagements, especially across the local properties of large mobile operator groups.

Our first-ever integration with a Payment Service Provider was realized in Nigeria. We are very excited about this project, as it opens a whole new channel for charging for digital content and services. Digital Services business has potential to grow, not only through mobile operators, but also through Payment Service Providers (PSPs), Internet Service Providers (ISPs) and FTTx companies.

As Africa continues to develop in the coming years, the consumption of digital content and services should grow exponentially. By establishing widespread connections in Africa at this early stage, we aim to build a strong foothold that will enable the expansion of our Enkudo digital services business in this region.

> "Most local companies in the telecom space have limited experience in the digital services domain"

Where digital content and services are concerned, we see that gaming remains as the strong category leader of the industry, followed by education and health and well-being. We believe that all these categories have been positively affected by the pandemic, as individuals changed their habits towards the consumption of personal entertainment, fitness applications and remote training services in the comfort of their homes. Overall, the pandemic has accelerated the digital transformation both at the enterprise and individual levels.

This year we also observed that all mobile operators in Africa have put digital services business in their list of top priorities. Globally speaking, most of the telecom services providers were caught off guard in the last decade, when 4G deployments and smartphones created a fertile ground for Over-the-Top (OTT) service providers to flourish. This paradigm shift jeopardized even the core services of mobile operators, such as voice and messaging, for which significant decreases in revenues were observed. During that period, mobile operators considered OTTs as a threat. That is not the case anymore. We see that the telecom space is more welcoming to digital service providers now and they look for opportunities to leverage the strengths of a partnership with them. We believe we will see this trend getting stronger in the coming years.

Enkudo's strategy for business growth in Africa has three main dimensions: broader coverage with new integrations to mobile operators, wider variety of content and services in our digital catalog and stronger content sales though performance marketing.

While we will continue adding new mobile operators from Africa to our customer base, to grow our pool of digital content and service providers we will utilize a digital marketplace solution that we started building in 2021. We are planning to launch Enkudo Digital Marketplace at the beginning of 2022 as a white-labelled solution, with a rich pool of content in various categories, such as games, streaming video, streaming music, mega promotions, well-being, edutainment, and others.

We believe that through this marketplace digital services will be rolled out to the end user a lot faster. The branding and look-and-feel of Enkudo Digital Marketplace are customizable based on the needs of the telecom operators. This solution will be powered by performance marketing tools that aim to maximize the Customer Lifetime Value (CLTV) for digital services business. ■

Looking ahead: Digital services will dominate our daily routines in the coming years in all aspects of our daily lives. We expect a quantum leap in the number and variety of services, with the support of new technologies in augmented reality (AR), artificial intelligence (AI), cloud gaming and 5G networks. The concept of "digital consumer" will be the focus of almost every business, and service providers will compete in the digital space more aggressively than ever before. The developments around super-apps, meta-universes, crypto-currencies, and internet of things (IoT) will shape the market for many companies, and new services that were not even imagined before will soon become available.

Overall, we expect exponential growth in digital services market with more players jumping in this domain from media, sports, entertainment, healthcare, finance, and government sectors. Our goal is to benefit from this growth by leveraging our robust technology and flexible business operations.

Prianca Ravichander,
director of partnerships and ecosystems at Tecnotree

The telecoms industry is embarking on a new era, with advancements in revolutionary technologies like 5G, artificial intelligence, and edge computing. Digital technologies are changing the world, with smartphones and other devices creating demand for new and personalised experiences. Customers are now 'always connected', and enterprises need to embrace new technologies to create more revenue and value for their services. These new technologies will not only alter how people consume content and interact with the environment but will also change the dynamics of the industry. The traditional telecoms market is transforming, with conventional offerings losing to new digital technologies. The same is true for the African digital market.

Tecnotree has an 18 year association with MTN, Africa'a largest mobile telecommunications services provider. Tecnotree's portfolio of capabilities have assisted MTN to provide leading digital services across Africa. Tecnotree has effectively worked towards implementing digital technologies that drive value for customers, the industry, and society, and seek economic growth by creating opportunities and improving lives. Tecnotree has contributed to bridging the digital divide in Africa through developing and launching new services.

The African market gives several challenges. Some are associated with high costs of mobile and internet, the difficulties in reaching rural populations, and lack of infrastructure for digital expansion. Internet availability in Africa is still low and connectivity costs are among the highest. Although the region represents a large percentage of the global communications market, because of these issues the potential market for digital services decreases.

With combined increasing competition and price pressure and with the regulation of the sector, Tecnotree needed to respond quickly to the industry's challenges. There was a need to find new ways to differentiate and remain relevant in the market. This required not only protecting traditional revenue streams but also developing new offerings and services.

The effects of the pandemic are still impacting – but even during lockdown and the challenges Tecnotree grew stronger in Africa. Tecnotree's strategy in Africa over the last year was to increase its contribution to the economy while growing in the market, with a focus on the following areas:

With the reality of 5G, there is a huge opportunity for the sector to create better customer experiences and engagement. In the last year, the African market has enjoyed growth and profitability, and given the rate of mobile connectivity growing in Africa, MTN chose Tecnotree as their strategic partner for the digital transformation journey across MTN Benin, MTN eSwatini, MTN Zambia, MTN South Sudan, and MTN Cote d'Ivoire.

Connecting the unconnected across Africa is a part of Tecnotree's five-year collaboration with MTN and their 'Ambition 2025 mission'.

Tecnotree believes in driving innovation with next generation products and services. The company constantly endeavours to create platforms that enable flexibility and digital transformation with the help of an agile architecture. This allows operators to launch relevant, market ready products and services. Tecnotree's products and customer management solutions facilitate personalized experiences based on understanding of customer behaviour.

Tecnotree products enable digital experiences across different processes with its leading-edge digital product DCBS (Digital Convergent Billing System), in MTN Ghana. With more than 18 million customer transactions, 2.5 million invoices and 20K master configurations, this was an incredible task delivered remotely, including entire migration, UAT, and end-user training. Another important launch was Tecnotree DLM (Digital Loyalty Manager), which successfully went live in MTN Uganda supporting 9 million users.

Investing in digital technologies is paramount for the telecommunications industry to increase growth and access.

The Leadership e-connect program across various MTN Opcos showcased Tecnotree's financial health along with updates on technology and innovations. Driving the spirit of teamwork and collaboration, the e-connect Program helped enhance the partnership and drive a successful digital transformation journey across various operating companies.

Tecnotree's efforts towards digitization goes beyond enterprise development. Tecnotree and MTN Uganda partnered to support the Christ Vision orphanage and the Love Foundation in Uganda, to create awareness about the rapidly changing digital world and the importance of digital literacy amongst children, which has the potential to improve lifelong opportunities.

One of the most innovative projects undertaken by Tecnotree in Africa was the launch of a unique technology platform that enables the monetization of over-the-top (OTT) services amongst mobile operators and service providers, accelerating growth in emerging markets. The end-to-end B2B2X platform is called Tecnotree Moments, and it's empowering Telcos to onboard pre-integrated partner offerings ranging from sports and gaming to media and entertainment.

The power of 5G is being used here for lifestyle bundling, partner lifecycle management, multiparty settlements, AI chatbot subscription management, identity management, and direct customer billing on a microservices-enabled architecture to convert ecosystem partners into instant revenue generators. The platform is flexible, with a low code/no-code, and one size fits all approach for partners, vendors, and customers. ■

Looking ahead: The fourth quarter of 2021 will see the launch of Moments multi-experience platform in North Africa. The platform offers digital services and products in the areas of sports/esports, gaming, education, and healthcare. With the initial support of eight global content aggregators and their ecosystems, Moments is expected to scale five times the number of partners by the end of 2022. These partner ecosystems are key to unlocking new digital services, accelerating revenue growth, and new experiences for the target market with 65 million consumers and 10,000 enterprises in the operator's target verticals.

Over the past year the telecoms industry across the world, not just in Africa, has highlighted the importance of adapting to technological changes. This means that in the case of uncertainty there is only a short window of opportunity to prepare yourself for disruption and pick up the pace on transformation and changing consumer demands. Telcos need to realign their business strategies to include omnichannel experiences and instant communication services for customers. The growing divide in the market, meanwhile, also suggests how adversity produces both winners and losers, and how the shift in the economy also creates opportunities for those who act bravely and surge ahead.

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Telenity FZE 1 Central The Office, 01.03 & 01.04 P O Box 9821 Dubai World Trade Center, Dubai – UAE
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Over-the-Top (OTT) players and App Stores have become the main provider of digital services to mobile consumers. With the deployments of 5G networks globally, telcos now have a fresh opportunity to offer a broad variety of digital services that will leverage the high-speed mobile connectivity and better quality of service on a next generation of devices.

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According to GSMA estimates, there will be >600 million mobile subscribers in Africa by 2025. To meet this demand, IDEMIA delivers innovative SIM and associated technology to mobile operators to ensure that consumers get secure mobile access across the continent. With a sub-region headquarters in South Africa, where we achieved BBEEE Level 1, IDEMIA is also present across Africa, including countries such as Ghana, Senegal and Nigeria.

As a testament of their trust in IDEMIA, customers, such as MTN, has awarded us with various honours including Supplier of the Year and Outstanding Quality & Delivery Performance.

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Our core expertise lies in helping our customers grow revenue through the power of digitalization. We combine years of experience in understanding our customers' needs, pain points and business goals around sales and distribution and leveraging automation and advanced analytics to help them achieve sales growth and OpEx optimization. We are driven to synergize distribution management for telecoms as we solve a variety of problems that impact different stages of the user journey.

Throughout this time, we have been obsessed with bringing unmatched efficiency across the value chain and helping converge all critical processes around sales and distribution in one integrated solution. Our end-to-end offerings facilitate the launch and growth of both direct and indirect channels while unifying customer experience across the board to ensure that telecoms never fail to deliver.

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Telenity Corporate Headquarters
Telenity Incorporated
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Our sister company www.enkudo.com brings together the operator and the 3rd-party digital content & service providers on our DSP platform to provide a first-rate digital experience to subscribers, to the benefit of all parties involved.

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