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Is the Mobile Network Ready For 5G VoNR?

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Toni Eid,
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Open RAN Again!

Why does the Open RAN debate continue? When the hype of the Open RAN technology began over three years ago, Telecom Review was keen to highlight its good and bad sides. And yet this debate is being raised once again.

As several years have passed on several Open RAN deployments, telecom operators have learned their lesson that Open RAN may save money, but it's not the smoothest path to take!

Why? Because such operators have compromised their security for the sake of savings, whether CAPEX or OPEX. There are many stories to tell, particularly with multiple vendors getting involved with Open RAN. Few of the operators are willing to admit to issues such as the security of networks causing delays or crashes, concerns over financial transactions, conflicts between hardware and software suppliers and content issues.

As a result, there are threats to a multitude of services in many locations, from North America to the Middle East and Asia, where there is minimum Open RAN implementation.

The single RAN may cost you more, but at least you can hold someone responsible on their end and ask them to fix any problems that arise.

I'm looking forward to the MWC 2023, which will re-emphasize the Open RAN debates, revealing which side operators take and their best assurances of being cost-effective without compromising technology.

I hope that we will look at the issues of Open RAN not only from the cost side but also with examples of concerns that most stakeholders have been able to avoid until now.

It's time to discover if Open RAN is providing more opportunities or more challenges to the telecom industry today.

Is the Mobile Network Ready For 5G VoNR?

The growing need for faster speeds and instant, reliable services is driving telecommunications providers to improve networks and services in order to meet the dramatic increase in communication demand. As data consumption increases, the various network segments and the interfaces between them must grow their capacities to serve this traffic.

With 5G deployment well underway, service providers must rethink voice services to better capitalize on these new opportunities. If service providers are serious about delivering on the promise of standalone 5G, voice-over new radio (VoNR) must be part of their 5G strategy. Voice is used as a fundamental service in cellular mobile communication systems.

5G Voice in Other Terms

A 5G world will continue to see voice as the master of communication, and there will be even more use cases for consumers and businesses where high-quality voice and communication service experiences are crucial. 5G voice is the regular mobile phone call service that service providers offer on 5G smartphones through Voice over New Radio (VoNR) and Video over New Radio (ViNR) technology.

For a service provider, there are many aspects of mobile network evolution to consider behind the scenes to secure a high-quality mobile voice service everywhere. The network infrastructure used for 4G voice (VoLTE) today will also be used to enable 5G voice calls on 5G smartphones and other 5G devices.

VoNR, also referred to as "Voice over 5G" or "Vo5G," is the capability in 5G mobile networks that facilitates voice calls. Until recently, mobile operators have been deploying 5G non-standalone (NSA) networks — 5G networks reliant on a 4G core. Although this evolution of next-generation mobile technology was a big step forward toward "true" 5G, customers using 5G today still enjoy VoLTE calls and even 2G and 3G calls. As customers continue to expect more from their 5G experience, it's critical that mobile operators match expectations with reality. Also, VoNR services operate through an IP Multimedia Subsystem (IMS), using a 5G radio and core network architecture to provide voice services for cloud-native 5G autonomous networks.

Benefits With Challenges

Operators obviously need to see a benefit for including VoNR in their 5G deployments because there are high costs for its inclusion and maintenance. They need to see a return on their investment. Using Voice over 5G New Radio, the voice calls will be able to take advantage of the lower latency of the 5G networks as well as being able to provide better sound quality. In addition, it will accelerate the migration towards VoLTE and VoNR, as the migration from 2G/3G voice services in the legacy network to VoLTE and VoNR can enhance network efficiency, lower OPEX and make good use of the low-frequency band.

Furthermore, VoNR will support emerging 5G applications Indeed, many 5G applications (such as AR/VR) depend on real-time and high-quality video and voice calls. VoNR can provide enhanced user plane capacity to support all of these applications. In the much longer term, Vo5G or VoNR will enable a 5G-only network, i.e., a 5G standalone network, or 5G SA, to provide all the services that are required of it. With 5G set to become the dominant mobile technology generation having a first-rate voice capability is crucial. Moreover, it will also be possible to provide high-speed data activities at the same time, which are often simultaneously required for presentations, demonstrations and video conferencing.

There are several challenges associated with the implementation of VoNR technology:

- Interoperability: Ensuring that VoNR is compatible with existing 4G and 2G/3G networks is a major challenge. This requires careful planning and coordination between different network operators and vendors.
- Latency: VoNR is designed to provide ultra-low latency, which is critical for certain use cases such as gaming and industrial automation. However, achieving such low latency levels can be tricky, requiring careful network design and optimization.
- Quality of Service (QoS): Ensuring a consistent level of voice quality over a 5G network can be difficult, as the network conditions can vary greatly depending on the location and the number of users.
- Interoperability: Ensuring that VoNR is compatible with existing 4G and 2G/3G networks is also a challenge that should be met with careful planning and coordination between different network operators and vendors.
- Latency: VoNR is designed to provide ultra-low latency, which is critical for certain use cases such as gaming and industrial

> A 5G world will continue to see voice as the master of communication

automation. However, achieving such low latency levels can be arduous and requires careful network design and optimization.

- Quality of Service (QoS): Ensuring a consistent level of voice quality over a 5G network can be demanding as well, as the network conditions can vary greatly depending on the location and the number of users.

Current Market

A VoNR call has been made and verified over a live multi-vendor ecosystem consisting of core and radio 5G SA-related nodes from many telco providers so far, including Huawei and Ericsson. This innovative milestone is an important step towards the commercial introduction of seamless 5G voice services in the cloud-native network. Also, the 5G VoNR achievement is the latest in a series of milestones completed by Qualcomm Technologies and ZTE in their ongoing collaboration to support the evolution of 5G. The successful 5G VoNR call is an important step toward bringing 5G native voice services to more service providers, enterprises and consumers. It will also support the further development of 5G SA.

In addition, T-Mobile has made another technology breakthrough by turning on commercial voice-over-5G (VoNR) service in limited areas of Portland, Oregon. The addition of VoNR takes T-Mobile's standalone 5G network to the next level by enabling it to carry voice calls, keeping customers seamlessly connected to 5G. VoNR customers will notice faster call setup times in the short run, which means less delay between dialing a number and the phone ringing. Also, Verizon launched 5G Voice over NR (VoNR) on its latest commercial 5G network.

Likewise, the Indian telecom operator Vodafone has successfully demonstrated 5G Voice over New Radio (VoNR) in partnership with Nokia. "Once deployed, the VoNR solution will enable the Indian carrier to offer its subscribers high-definition voice over 5G, as well as several advanced voice applications and use cases in the future," it was announced. The VoNR trial was done using Nokia's portfolio of solutions, including its AirScale 5G RAN, 5G Core and IP Multimedia Subsystem (IMS) voice core.

VoNR vs VoLTE

VoLTE (Voice over LTE) and VoNR (Voice over New Radio) are both technologies that allow for voice calls to be made over a 4G LTE or 5G network, respectively. The main difference between the two is that VoLTE is based on 4G LTE technology, while VoNR is based on 5G technology. Amid this, there are other differences, like the frequency of operation. Firstly, VoLTE is defined by LTE radio, while VoNR is defined by 5G new radio in the SA (Standalone) scenario, as per LTE radio in the NSA (Non-Standalone) scenario. The second difference is that VoLTE provides high-definition voice quality and faster call setup times compared to traditional circuit-switched voice calls over 2G or 3G networks. VoNR is the new standard for voice calls in 5G; it provides better voice quality and faster call setup times than VoLTE. The third difference is the core: VoLTe is an EPC (Evolved Packet Core), while VoNR is a 5GC (5G core).

There will likely be a learning curve ahead for VoNR, especially during the early stages, and there will surely be a period of optimization for VoNR just as there was for VoLTE. 5G is an enabler for future innovations. New use cases, such as VR/AR, Industrial and IoT, will no doubt drive demand for new services, but also for existing services. Voice services will evolve alongside those new use cases on the 5G network. Regardless of what 5G may be, voice-over 5G will be one of the key services for 5G's successful technology migration, evolution and innovation. TR

> The network infrastructure used for 4G voice (VoLTE) today will also be used to enable 5G voice calls on 5G smartphones and other 5G devices

Grace Najjar, Regional Managing Director, Middle East and North Africa, Project Management Institute (PMI)

Najjar : 'We Believe That Project Leaders Are the Change Makers of Tomorrow'

Project Management Institute

Telecom Review Africa conducted an exclusive interview with Grace Najjar, regional managing director, Middle East and North Africa, Project Management Institute (PMI), to discuss the main aspects of supporting sustainability. Najjar tackled the subject of how to empower women in the ICT sector. She also shared some thoughts on PMI's main achievements in 2022 and what its plans are for the future.

What are the main aspects of supporting sustainability, and how is PMI contributing to them?

Project managers are leaders who are empowered to implement and deliver on strategic goals. The ESG framework, more than ever before, is invited to embrace, implement, plan and drive all of the aspects and impacts of sustainability and ESG. PMI is calling out the need to close the gap and empower people and organizations to better deliver on their ESG and SDG goals.

We believe that, more than ever before, project leaders are the change-makers of tomorrow, helping us and having a better connection with societies. Also, project leaders are invited to build effective communication and make sure that all of the stakeholders are properly engaged. Those leaders are the ones who can influence, throughout this communication, the achievements of the SDG goals and make sure that all of the metrics and alignment have been prioritized and the stakeholders are supporting the achievements of success when it comes to compliance with the ESG goals and framework.

As a "for-purpose" organization, we at PMI encourage the mindset of connecting projects with purpose, which will increase retention, improve productivity and pave the way for real action.

A GlobalData survey published in 2022 said that two-thirds of executives believed the COVID-19 crisis has acted as a catalyst for increased focus and action on Environmental, Social and Governance (ESG) issues. Yet the report also found that inadequate governance practices make it more likely that companies will fail to meet ESG goals. (These efforts are complex and challenging to implement. PMI research shows that almost 40% of organizations reported major barriers to improving social impact, with just 33% of projects delivering improvements for the environment. This is primarily due

> The opportunities are great for us women who already possess the required innate talents

to a lack of financial resources and organizational commitment. Such commitment is only likely to come about if the C-suite is engaged and explicitly recognizes that improving planetary resilience improves business resilience.)

Our recent Global Megatrends 2022 report highlights climate change as one of the six trends that are impacting our world — that there is a need for project professionals to integrate emissions targets into key performance indicators, build emissions management into ways of working and engage with all stakeholders about sustainability practices.

In other words, embedding sustainability practices into every function, process and decision across the value chain will require cross-enterprise collaboration.

- There's also an opportunity for organizations to incentivize learning, such as leaning into resources — like PMI's partnership with Green Project Management — or investing in certifications for employees.

- PMI is proud to partner with Green Project Management to ensure that they have the tools and insights they need to integrate sustainability into every aspect of planning projects and delivering value. (Green Project Management is a social enterprise helping drive sustainable and regenerative development practices.)

- Our strategic partnership aims to equip project managers with the tools and expertise needed to deliver greater value on global sustainability strategies, goals, and visions.

- The partnership will provide PMI's global community of more than 2.1 million certification holders, members, volunteers, and other stakeholders with an introduction to GPM's industry-leading models and deep expertise in advancing sustainability through innovative practices in project management. The collaboration will foster joint research opportunities and projects in support of the advancement of sustainable and regenerative development in the realm of project management.

- To deliver on the Sustainable Development Goals (SDGs), and mitigate the impacts of climate change, we must do everything we can to ensure that projects and project management are positioned to make the biggest impact, and partnerships are critical to making forward progress.

As a woman leader in this industry, what would you say to other women who may aspire to follow in your footsteps?

The construction industry is facing serious pain points and fragmentation despite the fact that it is one of the most growing and impactful industries in the world, especially with respect to. GDP. This means more skillsets are needed, especially when it comes to managing conflicts, problem-solving, different ways of working in an agile mindset, effective communication, implementing more innovation when it comes to managing the usage of materials, and smoothly leading and managing the supply chain. That said, our research at PMI has shown that despite all the growth in the industry, there remains a high number of construction problems such as delays, cost overruns and scope creep. It is worth mentioning that, for every $1 billion spent on construction projects, $127 million is wasted, according to PMI's Pulse of the Profession research, 2020.

I believe in such a situation. The opportunities are great for us women who already possess the required innate talents — what relates more to the dynamics of better stakeholder alignments, managing complexities, and better problem solving and risk management, as well as the emotional intelligence that we women have. This is what the industry is looking for. Therefore, my message is for women leaders to get into their leadership roles and continue developing their talent and skills that are more relevant to the industry, so they can help with the transformation needed. Women's skills and competencies are critical.

What were the main achievements of PMI in 2022, and what are your goals for the future?

At PMI, we are committed to the advancement of the project management profession and empowering project leaders to help shape the Project Economy that we live in.

PMI is contributing to the skill development and capability building in nations and introducing all our offerings and career framework from entry level up to the transformation leadership level. This includes our Project Management Professional (PMP)® certification, which gives you the ability to spearhead tangible change and reduce the amount of time and resources wasted by

> Our focus is on providing sustainable solutions to empower leaders, as we work together on the ESG framework, towards the SDGs

working smarter in an agile and effective way. Our PMP updated with the new standards is providing the skillset and mindset for project managers.

We are partnering with organizations and governments and providing individuals who are seeking professional career development, with a career framework to step into the world of Project Management; in a world that is really aspiring for fewer inefficiencies, we are a partner for success.

And as mentioned above, our focus is on providing sustainable solutions to empower leaders as we work together on the ESG framework towards the SDGs.

We continue to serve our large global and regional community, highly engaging with them during impactful top summits and industry-specific events. We are touching on the importance of project management in a career. PMI is always positioned as the thought leader and partner for organizations and governments across all platforms in the region.

This is especially true as various industries, including construction, are trying to solve the pain points of the talent gap. PMI is empowering all to help turn their ideas into reality, bring in more agility within the leadership, take project management into strategic leadership, which would help manage the risks ahead, proactively drive success vs. reacting, and make sure all investments are leading to successful outcomes in a timely manner with the desired objectives.

We are supporting ambitious leaders to solve the complexity that we are living in. We are working on skilling and upskilling the communities, as talent is key and considered to be the fuel of tomorrow. We are even contributing to empowering the local communities, supporting the naturalization of talents, and we are the partners that uplift all skills and get more nationals to get into the needed roles and be part of the successful project leadership and project professionals.

I am proud to mention that in our MENA region, Dubai Municipality won the Project Management Office of the Year® Award 2022 from PMI. Their PMO office has added tremendous value to the municipality through its support of successful strategic initiatives and has demonstrated superior organizational project management capabilities. It has also been recognized as having helped in establishing a vision for value delivery, adding a positive and clear impact on business results as well as the advancement of the project management profession.

Dubai Roads and Transport Authority (RTA) has won the 2022 PMI Large and Mega Project of the Year Award in recognition of the success of the development of the seven metro stations to meet the high demand of Expo 2020. RTA is a showcase of the best collaboration and innovation from around the world. At the planning phase, the number of passengers using Route 2020 was expected to reach 125k commuters per day during the event and was expected to rise to 275k commuters by the year 2030.

Both Dubai Municipality and RTA have recently become part of PMI's Global Council, creating, along with other members of leading organizations from around the globe, meaningful opportunities for learning and networking and advancing the future of the profession, addressing common challenges, capturing workable solutions and sharing knowledge with peers across sectors.

Equally, our MENA chapters made it to the top at the Global Summit in recognition of their volunteering efforts, motivational chapter leaders, and in acknowledgment of their contributions toward achieving PMI's goals. PMI Tunisia Chapter won the Category I - Chapters with 25 - 300 Members and PMI Lebanon Chapter won the Category II - Chapters with 301 - 1500 Members.

We are continuously contributing to this region by fostering well-being and creating more social impact in the region through our chapters, volunteers and communities at large. TR

> PMI research shows that almost 40% of organizations reported major barriers to improve social impact, with just 33% of projects delivering improvements for the environment

Unlocking the Potential of Youth With Telcos

As the world becomes increasingly digital, telecommunications companies are facing new challenges in attracting the younger generation as new customers. With the rise of new technologies, the younger generation has come to expect easy-to-use, fast and reliable services. Telcos need to keep up with these changing technology trends and offer new and innovative services to appeal to this demographic.

Supporting the New Generation

The younger generation is known for being tech-savvy and highly connected. They often use multiple devices and services to communicate and access information, which means that telcos need to offer fast and reliable network services, including 5G, to keep up with their needs. Telecommunications operators are supporting the young generation to push growth in several ways:

- Offering affordable plans: Telcos are offering more flexible and affordable plans to attract the younger generation as customers. They often provide unlimited data, low-cost international calling and the ability to customize plans to meet individual needs.
- Focusing on network coverage and speed: With the young generation's heavy usage of the internet, telcos are investing in network coverage and speed, particularly with the rollout of 5G. This helps to ensure that their services are fast and reliable and meet the demands of the tech-savvy younger generation.
- Providing digital services: Telcos are also offering digital services, such as online banking and mobile payments, to appeal to the younger generation's preference for online and mobile services.
- Building brand awareness through social media: Telcos are using social media platforms, such as Instagram and Facebook, to build brand awareness and reach the younger generation where they spend most of their time online.
- Creating partnerships with popular brands and services: Telcos are forming partnerships with popular brands and services that appeal to the younger generation — for example, music and video streaming services — to offer bundled packages and add value for customers.

In addition to offering competitive services, telcos also need to focus on building strong relationships with the younger generation, which can be achieved by being transparent, trustworthy and accessible. Telcos should make it easy for customers to get help when they need it, whether through online support or in person at a local store. They should also be transparent about their policies, pricing and service guarantees, so customers know what they can expect. Moreover, telcos need to understand the unique needs and preferences of the younger generation. This means understanding what services they value most and what their priorities are when it comes to communication and entertainment. By tailoring their services to meet these needs, telcos can better retain the loyalty of the younger generation as customers.

While telcos provide many benefits, it is important to be aware of and address the negative impacts that their services can have on the younger generation. It is up to individuals, families and communities to regulate technology usage and mitigate any potential harm. Examples of some negative effects on the young generation:

- **Addiction to technology:** The overuse of technology, such as smartphones and social media, can lead to addiction and a decreased ability to communicate and form relationships in person.
- **Cyberbullying:** The increased connectivity offered by telcos can also lead to the rise of cyberbullying and other forms of online harassment, which can have a serious impact on the mental health and well-being of young people.
- **Decreased privacy:** Telcos collect and store vast amounts of personal information, which can be misused or sold to third parties, resulting in decreased privacy and security.
- **Excessive screen time:** The heavy use of technology and digital services offered by telcos can also lead to excessive screen time, which can impact physical health and lead to poor sleep habits.
- **Cost:** The actual costs of using technology and digital services offered by telcos can quickly accumulate and lead to financial stress for families and individuals, particularly for those who are already struggling.

The Rise of African Youth

Africa's new generation is poised for growth, with numerous strengths and potentials that could drive progress. The first factor that could support growth in the new generation is the large, youthful population. Africa has the largest and fastest-growing youth population in the world, which could be a major asset for the continent's future. In addition; the new generation in Africa is well-educated and has acquired a range of skills and competencies that could be leveraged to drive economic and social progress.

Furthermore, Africa's digital economy is growing rapidly, and the young generation is at the forefront of this trend. They are using technology to start new businesses, access new markets and connect with people across the continent.

Africa also possesses an undeniable entrepreneurial spirit. The new generation in Africa is known for this and is, therefore, willing to take risks and pursue new opportunities. This could be a major asset for the continent's future. Overall, the new generation in Africa has many strengths and potentials that could drive such growth and progress, and it is ultimately poised to play a major role in shaping the continent's future.

Telcos need to adapt to the changing needs of the younger generation. By understanding their unique needs and preferences, telcos can remain competitive and attract the younger generation as customers for years to come. TR

Web3 Shifts Power From Platforms to People

Thanks to the centralization of the Internet, which has strengthened the online connections between billions of people, the World Wide Web now has a reliable and stable infrastructure. At the same time, a small group of centralized organizations control a significant portion of the World Wide Web and make unilateral decisions about what should and should not be allowed. Web3 solves this problem. Instead of being dominated by large technology companies, Web3 is decentralized and is created, managed and owned by people, not companies.

Why Do We Need Web3 Social Networking?

Web2 social networks like Facebook and LinkedIn have made connecting with friends, family, and colleagues as natural as breathing, but only when following their rules. And for those who don't like it, these Web2 platforms are happy to serve the customer a lengthy ban. As an example, Facebook employed a blanket ban on all crypto-related advertising, preventing legitimate startups from gaining traction. While that ban is over, Web3 organizations still need to jump through several hoops to advertise on the platform.

Rather, Web3 social networking offers five key benefits:

- Ethical advertising: Social media platforms are notorious for mining and sharing as much user data as possible, but the problem is that it's tricky to know what data they collect. Who says there's no other way to extract data? On the contrary, transparent social networks on the blockchain can remove that possibility with smart contracts that anyone can verify.

- Streamlined news feeds: Besides Meta's portfolio, there's virtually no interoperability between social platforms. As a result, we have to constantly cross-promote and double-up on posts to ensure that the followers see the content. With Web3, however, you can build a platform that aggregates content from all your connected networks, so you can keep your followers up-to-date rather than managing multiple platforms.

- Identity ownership: One of the biggest unlockings of Web3 social networking is identity ownership. Web2 social platforms can easily censor or ban an account if it doesn't comply with its terms of use; all it takes is one simple mistake for a Web2 social platform to delete your account and force you to start over. In contrast to Web2 platforms, Web3 revolves around giving people control over their online identity and preventing them from being accused/oppressed by authoritarian constraints.

- Automatic verifications: For every Web2 platform we want to use, including those outside the social domain, we need to go through a verification process, with privacy checks that are limited since there are no set standards in place. For example, on the LinkedIn platform, anyone could easily add that they worked at Google, and of course, it is possible for people to double-check this information. But this is tedious, and most people won't bother unless they know people who work there. On the other hand, fully functional Web3 infrastructures allow us to create a single source of truth (the blockchain) for identity and subsequent credential verification, which converge to protect us from scammers.

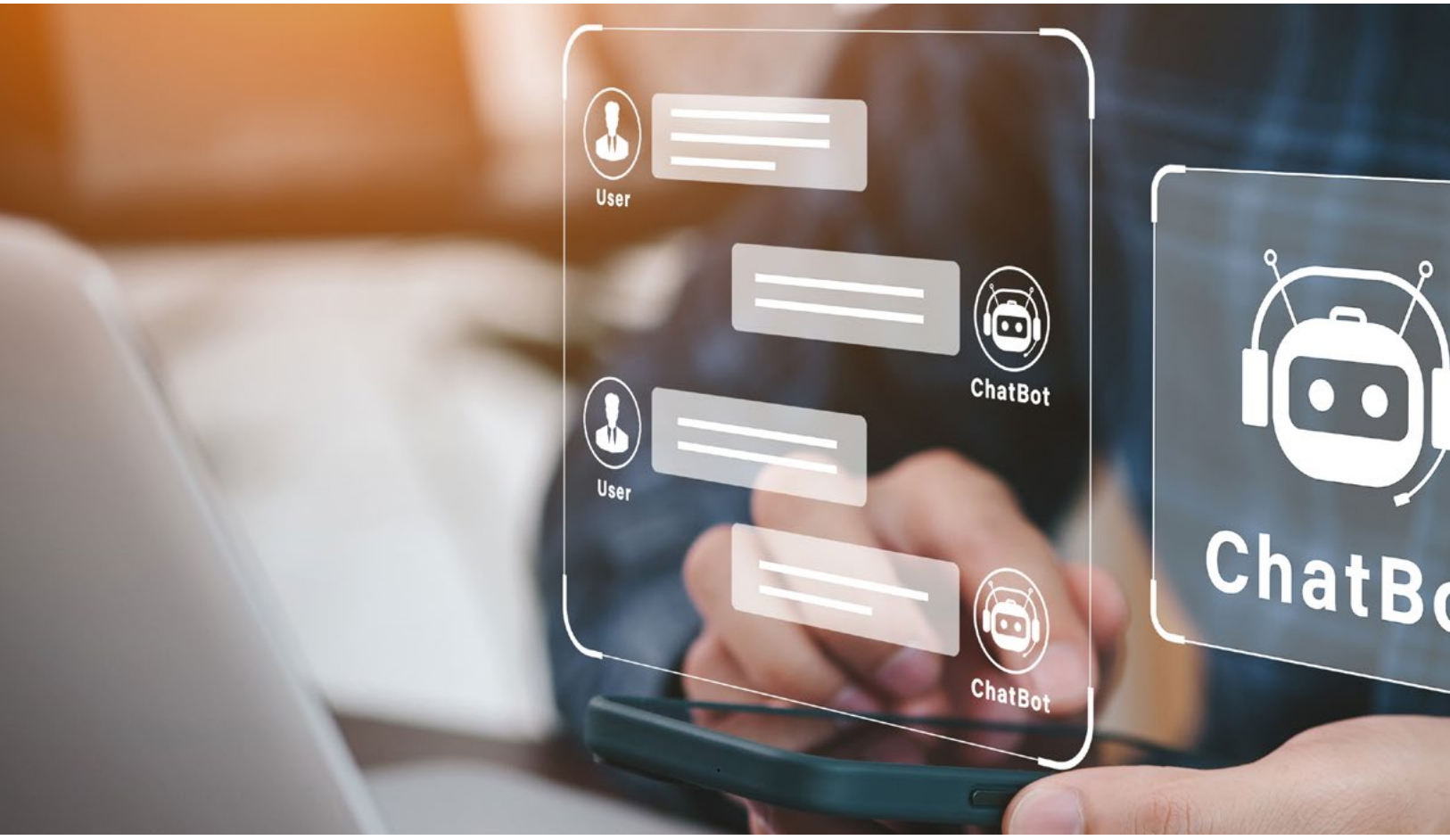
Web3 vs Web2

Building a social network on Web3 has significant advantages, one of which is being "composable." Web2 is all about privacy and exclusive information. In Web3, on-chain code is freely available, which means you can reuse the code from any project you want. This feature speeds up development cycles and allows developers to focus on the features that will make their protocol unique. Composability is the foundation of this Web3 interoperability.

Moreover, Web3 is growing in its interoperability Currently, Web3 is not yet fully interoperable, and when it comes close, it can be clumsy and slow. However, it is getting closer to true interoperability day by day. The current interoperability of NFTs allows the development of protocols around them without the approval of individual collection creators. Above all, interoperability makes it more efficient to create unique products and services without having to adopt multiple technology stacks to juggle different protocol standards.

In addition, Web3 is open-source; interoperability and composability are nothing if developers have to ask permission each and every time they want to build something. The open-source nature of blockchain also eliminates project risk, as builders don't have to rely on other protocols and as developers can duplicate features. For example, many applications were created on Twitter until the company closed its API, which prevented further development. In the open-source world of Web3, Twitter and other such companies wouldn't have to deal with situations like this at all.

We can build all the Web3 social networking platforms we want, but the only way to unlock their value is to promote their adoption. The way to do this is to provide a seamless user experience. For Web3 social networks to become the norm, they must look like Web2 and have intuitive user interfaces and familiar onboarding processes, while offering the advantages that only Web3 can bring. TR



Accept or Reject: AI Chatbot as a Thinking Companion for Academia

Artificial intelligence (AI) is opening up a whole new world of opportunity with the emergence of an enhanced chatbot that could be a game-changer across industries, including the academic scene.

ChatGPT is a product of human-AI collaboration. Within this realm, human trainers are behind the finetuning of OpenAI's ChatGPT using supervised learning and reinforcement learning. ChatGPT's potential is making headlines because of its conversational capabilities in answering prompts that are input by users.

To give you a glimpse, the market size of conversational AI is expected to reach US$1.3 billion by 2025, growing at a CAGR of 24%. A good example of this model is a chatbot, one of which is ChatGPT. By definition, a chatbot is an interactive application developed using AI and designed to interact with humans through a textual conversation process. It is commonly integrated with various messaging services in sectors like retail, finance, etc.

Still, in its neophyte stage, the controversial ChatGPT is said to be a large language model that can generate readable text on demand in a wide range of styles and for a variety of purposes. These include writing essays, creating lesson plans, conceptualizing research and even answering exams. The AI chatbot does it all in a human-sounding text and with high efficiency, though its accuracy still has room for improvement.

Ongoing Discourse of ChatGPT's AI Chatbot

ChatGPT has brought mixed responses from school administrators, teachers, parents and students. There are ethical concerns about how AI fits into education and the potential for plagiarism and cheating, but when used correctly, ChatGPT can be a helpful tool for students inside and outside of the classroom.

A Harvard Graduate School of Education webinar discussed that banning artificial intelligence tools like ChatGPT in schools is the "wrong approach." In reality, these services could be transformative for the future of education.

New York City Public Schools, the largest school district in the US, announced in early January 2023 that it was banning ChatGPT across all district devices and networks over concerns "regarding the safety and accuracy of content." Other big US city districts like Seattle, Baltimore and Los Angeles have also blocked access to the app, and many others might follow suit.

Three Australian states — New South Wales, Queensland and Tasmania — have also banned the AI chatbot tool in public schools.

While English teachers are worried about the trustworthiness of future written assignments, Princeton University senior Edward Tian is working on an app that aims to identify and incentivize originality in human writing. GPTZero can help teachers identify whether their students are plagiarizing essays from ChatGPT. The creator said that humans deserve to know when something is written by a human or a machine.

Supporters believe that teachers and students should see ChatGPT as a helpful tool, similar to the role of a calculator in a math class. It cannot do a teacher's complete job on its own, but it can certainly help reach learning objectives.

Moreover, ChatGPT is smart enough to pass prestigious graduate-level exams with passing remarks.

In separate scenarios, the powerful new AI chatbot tool recently passed law exams in four courses at the University of Minnesota and another exam at the University of Pennsylvania's Wharton School of Business.

Professors at the University of Minnesota Law School assessed ChatGPT's ability to answer 95 multiple-choice questions and 12 essay questions and revealed an average grade at the level of a C+ student. This means achieving a low but passing grade in all four courses.

In similar regards, ChatGPT earned a B to B- grade on a business management course exam at Wharton. A Wharton business professor said that the AI chatbot did an amazing job at answering basic operations management and process-analysis questions. But on the downside, it struggled with more advanced prompts and made mistakes with basic math.

Additionally, ChatGPT has what it takes to pass the US Medical Licensing Exam. Led by doctors from a medical startup, researchers found that ChatGPT "performed at or near the passing threshold for all three exams" that are required to be licensed as a doctor.

Another study found that ChatGPT was only around 50% accurate on the Multistate Bar Examination, a multiple-choice test that comprises one part of the legal-practice licensing process in the US.

Outlook

ChatGPT is simply the latest in a long line of disruptive changes that the academia sector has absorbed — a category that includes the Internet, Wikipedia and calculators, etc.

It is yet to be proven how this tool can be utilized productively to help students hone their critical thinking and communication skills.

People are increasingly using the AI chatbot, which means the learning process will likely never be the same again. According to the CEO of one of the world's largest providers of online education, AI for online education gives us the opportunity to improve the experience of students.

An AI chatbot like ChatGPT acts more as a synthesizer than a critical thinker. In this case, it will perform well in a compare-and-contrast essay but is less able to create and defend a unique dissertation.

AI is not fully intelligent, as it is still limited by the amount of data it has been trained on. Cognitive ability and real-time reasoning are still human skills that are not easily integrated with technology. With ChatGPT, for example, the tool does not really understand the information it has. The AI chatbot merely processes and presents the language and facts that it has been fed, making it unreliable in some instances.

While some fear the rapid rise of AI as something of a nightmare, others view it as another testimony to a technological leap that schools will evolve to cope with.

When the beta version of ChatGPT was asked to write an article about its own impact on schools and universities, it confidently proclaimed that it had the potential to revolutionize teaching and learning. TR

Unemployment Climbs as Youth Lack Digital Skills in Africa

With 70% of sub-Saharan Africa under the age of 30, Africa has the youngest population in the world. With so many young people, the continent has a chance to grow, but only if the next generations are given the tools they need to reach their full potential. It is crucial that young people participate in decision-making processes and are provided with appropriate work and innovation opportunities.

A region's development prospects would benefit from having such a sizable young population, as they would typically represent a sizable and active workforce.

However, the lack of employment opportunities for young people in Africa continues to greatly restrict their potential. According to estimates from the African Development Bank, only one in six of the 420 million young people in Africa between the ages of 15 and 35 had wage employment in 2015. Another third of them were reportedly working in dangerous conditions.

Despite having a relatively sizable formal sector, Africa has one of the highest rates of youth unemployment and underemployment globally. This is influenced, in part, by labor market frictions, such as employers' reliance on

referrals through professional networks for hiring and the lack of information about job applicants' digital skills.

Lack of Youth Digital Skills Presents Challenges

With many different factors that are hitting the ICT field in Africa, we see that Africa is prepared to grow in this field. Internet access and penetration are expanding; according to several forecasts, Africa's digital economy will reach $180 billion by 2025 and $712 billion by 2050.

Therefore, we can't deny that Africa still has a long way to go despite all this progress in the digital and technological sectors.

The continent continues to have the lowest global internet usage rate. In comparison to the global average of 66%, only about 40% of Africa's population has access to the internet. The importance of expanding internet access is underscored by the positive effects the internet can have and by the young demographics of Africa's population.

Moreover, the lack of equal access to high-quality education is an obvious barrier, taking into account that the development of digital skills and the equitable adoption of fundamental digital skills as well as pertinent soft and hard skills are both essential components of primary and secondary education. In addition to qualified teachers, this calls for better enrollment across the continent, particularly among girls and in remote areas. In order to teach digital skills, schools must have access to the necessary equipment, infrastructure and connectivity, with a focus on underserved communities and rural areas.

Also, the uptake of digital skills can be significantly increased through technical and vocational education and training (TVET). However, it must be carefully planned and targeted, with direct employer input and solid ties to the labor market.

East African nations have successfully started to address

TVET challenges by adopting the Regional TVET Qualifications Framework, mainstreaming regional qualifications into national policies and qualification frameworks, and raising overall TVET standards.

African Youth Digital Skills Enabler: The NEET Program

The goal of the NEET program is to enable more young people in South Africa to access decent jobs in the digital economy.

After determining their needs, young people will be connected to appropriate opportunities and services using digital case management to connect them to decent employment and educational opportunities. Their development will also be tracked by the system. A total of 500 members of the youth services staff will receive system usage training before passing it on to others.

This ground-breaking system will improve stakeholder coordination processes by seamlessly integrating a range of services that will help modernize youth NEET labor intermediation services in the digital economy.

Moreover, there is a need for a comprehensive system-wide approach that considers the entire government and entire society to identify and propose solutions and systems that better connect the supply and demand of digital skills. Research and stakeholder consultation are needed to inform national digital skills initiatives that serve the needs of youth.

To help young people get ready, digital skills training will be offered. Several training programs will be developed, specifically designed to meet their learning requirements. These programs are based on a skills shortage, a review of national efforts, and demand assessments that will cover science, technology, engineering, arts, mathematics, innovation and entrepreneurship (STEAMIE) subjects. They will also provide opportunities to apply the acquired skills in real-world contexts.

The future of our continent depends on young school-leavers and graduates being able to break new ground in the digital landscape, which is why we believe that initiatives and programs like these are so important. Ideas that can improve the continent and their own country are residing in the minds of these young generations. But this will only come to pass if we take it upon ourselves to arm today's youth with the knowledge and abilities required to succeed in the workplace of the future. TR

SES and Ivanhoe Mines Partner to Deploy Low-Latency Satellite Connectivity in Africa

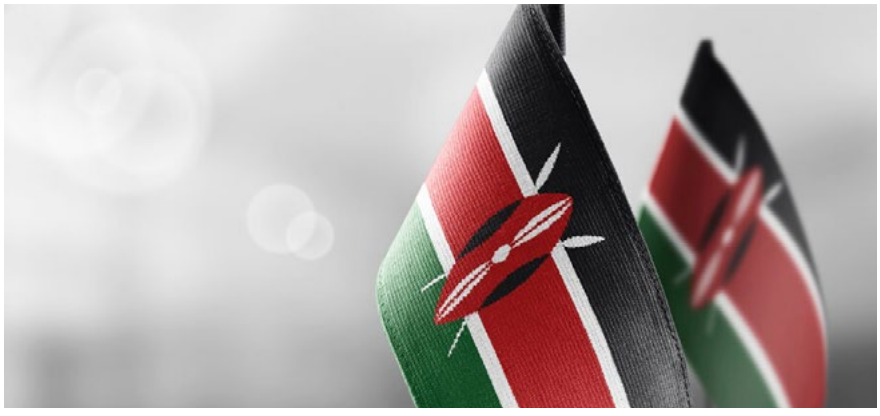
The Kamoa-Kakula Copper Project in the Democratic Republic of Congo will continue to enjoy high-speed satellite-based connectivity services as part of a new agreement between SES and Ivanhoe Mines. The enhanced partnership builds on a successful five-year relationship between SES and Ivanhoe Mines and comes at a time of significant investment in low-latency, high-capacity solutions in the region following the boom in the African mining industry.

The O3b constellation is powering connectivity for leading mining operators, driving a digitalization revolution for the sector that is helping to increase profitability while improving worker safety and accountability. This cost-effective model enables operators to scale connectivity as needed throughout the lifecycle of a mine, ensuring assets have the right amount of bandwidth at any given time to meet digitalization requirements.

Caroline Kamaitha, vice president of sales, Africa at SES, said, "We're proud to continue delivering reliable high-speed connectivity to DRC's mining industry through our O3b high-throughput and low-latency connectivity services, enabling mining companies to implement new services and applications that will improve workers' safety, digitalize operations and maximize profitability through increased agility and automation."

Anil Udayabhanu, head of technology at Kamoa Copper, said, "Our long-standing partnership with SES has already helped us to improve the profitability of our extraction and supported our goal of improving the safety and welfare of all of our staff. In addition to that, O3b connectivity services will also help us leverage the latest applications, communicate in real time and maximize our productivity."

Telecom Companies' Daily Earnings to Be Monitored in Kenya



The Kenya Revenue Authority (KRA) has announced plans to implement a system to better measure voice, Internet and SMS traffic. Using this system, the government hopes to fight fraud and improve its collection of the daily revenues reported by telecom operators.

The move is part of the Kenyan government's plan for economic recovery during the 2023/2024 fiscal year. The plan aims to raise around Ksh3 trillion (US$24.1 million) in revenue, and possibly as much as Ksh4 trillion. These ambitious fiscal projections, to which telecoms are expected to contribute, are contained in the draft 2023 budget policy statement, which was submitted for government review on January 24, 2023.

Safaricom's CEO, Peter Ndegwa, explained that if the move is approved by law, telecom operators would comply. "We have heard about the new draft proposals, which the KRA Commissioner General has spoken about; they're still at the proposal stage; I'm sure we'll be engaged as a critical stakeholder in this proposal. Of course, we'll always follow the law; if KRA has the right to do certain things and are approved in the normal way through Parliament, I'm sure we'll follow the law as we have always done," he said.

TCRA to Shut Down All Unverified Sim Cards

The Tanzanian government has extended the SIM card verification deadline until February 13. According to ICT Minister Nape Nnauye, after this date, unregistered SIM cards will be disabled.

According to Mr. Nnauye, who urged Tanzanians to comply with regulations, the new deadline will be the last. The ongoing SIM card verification campaign comes against a backdrop of increasing fraud involving mobile devices in the country. The new deadline extension is expected to allow all Tanzanian telecom subscribers to have their SIM cards verified to continue enjoying telecom services while at the same time helping combat cybercrime and fraud in the Tanzanian digital space.

As of January 19th, 58.4 million active cell phone lines had been verified out of a total of 60.7 million, leaving 2.3 million SIM cards not verified and likely to be deactivated.

Mama Money and Zimbabwean Bank Join to Tackle Remittance Market

Mama Money, a South African fintech that offers cross-border money transfer and banking services, has partnered with Zimbabwe's AFC Commercial Bank, effectively connecting to the bank's customer base, which includes 45 cash collection points.

The monthly remittance flows from South Africa to Zimbabwe range from US$30 to US$60 million through both formal and informal channels, and they account for over 10% of the country's GDP, according to the World Bank.

The capacity of the business is evident, but the cost of sending money to Zimbabwe "can significantly reduce the impact that remittances have as these funds are predominantly used for critical needs such as school fees, healthcare and housing." According to Mama Money, when it launched in 2015, the average cost of sending money from South Africa was 14%, but "today, the average cost of sending money from South Africa is 7%, which is much closer to the worldwide average of 6%," the company stated.

Mama Money facilitates money transfers to over 50 countries across Africa, Asia and Europe. It also offers banking services and money transfers to South Africa from Europe and other regions. Mama Money is one of the fastest-growing money transfer operators, with over 720,000 users.

etisalat Egypt by e& Signs Financing Agreement With CIB

In accordance with e&'s evolving corporate identity, leading tech-telco operator Etisalat Egypt by e& signed a financing agreement with Commercial International Bank (CIB) for EGP 4 billion to support Etisalat's ambitious expansion plans.

This agreement was signed by Eng. Hazem Metwally, chief executive officer of Etisalat Egypt; Ehab Rochdy, chief financial officer of Etisalat Egypt; Amr El Ganainy, CIB's CEO of Institutional Banking; and Soha Abou Zikry, head of Global Customer Relations Group.

Hazem Metwally said that this partnership with the CIB reflects the bank's leadership and success in offering a variety of financing and banking services. He also noted that this agreement aims to support Etisalat Egypt's expansion plans to unleash its potential in providing innovative services that meet the constantly changing needs of customers and develop its services.

He added that this expansion has a positive impact on the services offered to customers, with Etisalat Egypt continuing to offer top-notch quality to its citizens by utilizing the most recent technological advancements in the international markets, all made possible through collaboration with successful partners.

Metwally further noted that this alliance paves the way for Etisalat Egypt to realize its goal of creating a "Digital Egypt" in line with Egypt's Vision 2030.

In this context, it is important that infrastructure be seen as a crucial factor in driving economic development, competitiveness and social well-being. Enhanced private sector partnerships have the potential to be the difference-maker and growth catalyst.

MTN Nigeria Releases Strong Results for Financial Year 2022

MTN Nigeria Communications Plc has announced audited financial results for the fiscal year ended December 31, 2022. Mobile subscribers increased by 10.5% to 75.6 million, adding 7.2 million subscribers. Active data subscribers increased by 15.3% to 39.5 million. Active fintech subscribers rose by 57.5% to 14.9 million, with 2.0 million active mobile money (MoMo) wallets since the launch of PSB. Also, service revenue was up by 21.5% to N2.0 trillion.

Additionally, earnings before interest, tax, depreciation and amortization (EBITDA) increased by 22.0% to N1.1 trillion, and the EBITDA margin expanded by 0.2 percentage points (pp) to 53.2%, while the profit before tax (PBT) grew by 22.3% to N534.0 billion. Profit for the year grew by 21.1% to N361.5 billion (excluding non-controlling interest). The earnings per share (EPS) increased by 21.3% to N17.79 kobo. Capital expenditure (Capex) rose by 23.5% to N504.3 billion.

Commenting on the results, MTN Nigeria's CEO, Karl Torlola, said, "2022 was challenging due to global macroeconomic and geopolitical volatility, resulting in higher inflation, supply chain uncertainties, foreign exchange volatility and availability. In Nigeria, inflation reached a 17-year high of 21.5% in November before moderating slightly to 21.3% in December, bringing the average for the year to 18.8% and putting pressure on consumer spending. To curb rising inflation, the Central Bank of Nigeria increased interest rates four times in 2022, bringing the Monetary Policy Rate to 16.5% — up by five pp during the year. This was further raised by 1pp in January 2023 to 17.5%."

Vodacom Group Limited Quarterly Trading Update

As per the quarterly announcement of the trading update of Vodacom Group Limited, the Group revenue increased 14.8% (4.7%) to R30.7 billion, positively impacted by the acquisition of Vodafone Egypt and rand depreciation against our basket of international currencies. In addition, Group service revenue was up 16.1%, with normalized growth of 3.5%, supported by growth in data revenue and financial services.

Moreover, financial services revenue increased 30.6% (16.5%) to R2.6 billion, with VodaPay super-app downloads reaching 4.5 million. South Africa's service revenue increased 3.0%, underpinned by a strong performance in mobile prepaid.

Regarding Vodafone Group, Vodafone Egypt was consolidated on December 8, 2022, contributing over R1.8 billion to Group service revenues. It was a key factor, alongside currency gains and operating model resilience, in the 16.1% improvement in our service revenue, despite ongoing financial market volatility and weaker prospects for the global economy.

Shameel Joosub, Vodacom Group CEO, said: "The third quarter of our current financial year is the first set of results that includes revenues from what we expect will be a transformative transaction for the Group — our acquisition of a 55% stake in Vodafone Egypt. In December last year, we announced the finalization of the R43.6 billion deal, the largest in Vodacom Group's history and one that cements our position as a leading pan-African technology company in addition to diversifying and accelerating our growth profile. It also means that our population reach exceeds 500 million people across Africa, providing a clear growth path for Vodacom."

Orange Cash: Easily Pay for Everything

New year, new financial resolutions. In partnership with NBE and Fawry, Orange Egypt is launching Orange Cash, a digital service designed to easily pay, receive and transfer money from and to any e-wallet, buy movie tickets, make donations and manage all the money, anytime, anywhere. According to Orange Egypt, this service will enable the customer to pay instantly through a list of merchants by scanning Meeza QR codes in stores or online merchants with a payment link. Most anyone with a cell phone will be able to use it.

Additionally, a client business can also pay salaries to employees with this secure application. The Orange Egypt apps will be available from these trusted sources: the Apple Store and Google Play.


According to research, Africa has the fastest-growing mobile market in the world with a yearly growth rate of over 5%

Selon les études, l'Afrique est le marché de la téléphonie mobile qui connaît la croissance la plus rapide au monde, avec un taux de plus de 5 % par an

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L'Open RAN de nouveau !

Pourquoi le débat sur l'Open RAN se poursuit-il ? Lorsque le battage médiatique autour de la technologie Open RAN a commencé il y a plus de trois ans, Telecom Review a tenu à souligner ses qualités et ses défauts. Et pourtant, ce débat est à nouveau soulevé.

Après plusieurs années de déploiements de l'Open RAN, les opérateurs télécoms ont constaté que même si l'Open RAN permet d'économiser, ce n'est pas le chemin le plus facile à suivre !

Pourquoi ? Parce que ces opérateurs ont compromis leur sécurité au nom des économies, qu'elles soient CAPEX ou OPEX. Il y a de nombreuses histoires à raconter, surtout que de multiples fournisseurs sont déjà impliqués dans l'Open RAN. Peu des opérateurs sont prêts à admettre que la sécurité des réseaux est à l'origine de retards ou de crashs, de préoccupations concernant les transactions financières, de conflits entre les fournisseurs de matériel et de logiciels et de problèmes de contenu.

Par conséquent, une multitude de services sont menacés dans de nombreux endroits, de l'Amérique du Nord au Moyen-Orient et à l'Asie, où l'Open RAN est déployé de façon encore limitée.

Le RAN unique coûtera peut-être plus cher, mais vous pourrez au moins tenir quelqu'un responsable et lui demander de régler les problèmes qui surviennent.

J'attends avec impatience le MWC 2023, qui mettra à nouveau l'accent sur les débats relatifs à l'Open RAN, révélant le camp des opérateurs et leurs meilleures garanties de rentabilité sans compromis technologique.

J'espère qu'on abordera les problèmes de l'Open RAN non seulement de l'angle des coûts, mais aussi à l'aide d'exemples de préoccupations que la plupart des parties prenantes ont pu éviter jusqu'à présent.

Il est temps de découvrir si l'Open RAN offre plus d'opportunités ou plus de défis à l'industrie des télécommunications aujourd'hui.

Pares-feux de nouvelle génération : Répondront-ils aux demandes ?

Dans un monde où les cyberattaques ne cessent de se développer et deviennent de plus en plus intelligentes, la sécurité informatique des entreprises devient une préoccupation pour toutes les organisations. Pour cela, un pare-feu (firewall) - type de logiciel qui empêche les utilisateurs non autorisés d'accéder aux données d'autrui – s'inscrit dans le cadre de la stratégie de sécurité du réseau.

Les principales caractéristiques d'un pare-feu

La plupart des pares-feux ont plusieurs caractéristiques communes. Voilà pourquoi, choisir la bonne solution parmi une panoplie de fournisseurs peut être difficile.

Voici quelques caractéristiques des pares-feux qui aident à déterminer la solution la mieux adaptée aux entreprises :

- La prévention des menaces : plus la menace cybernétique a accès au réseau d'une organisation, plus il sera coûteux d'y remédier. Un pare-feu avec une fonction de prévention des menaces identifie et bloque les attaques avant qu'elles ne pénètrent dans un réseau, aidant ainsi les entreprises à éviter les cyberattaques et leurs conséquences négatives.

- Évolutivité : de nombreuses organisations ont adopté une infrastructure basée sur le *cloud* en raison de son évolutivité et de sa flexibilité accrue. L'utilisation d'une solution de pare-feu évolutive est importante étant donné que de plus en plus d'entreprises intègrent les technologies numériques dans leurs activités ; Elles se développent à mesure que les organisations évoluent et que leurs besoins en matière de cybersécurité deviennent plus complexes.

- Inspection basée sur les applications et les identités : le réseau des entreprises est en constante évolution, ce qui leur permet d'utiliser un pare-feu avec inspection basée sur les applications et les identités. Ceci permet à une entreprise d'appliquer des politiques spécifiques aux applications ou aux utilisateurs au sein de l'organisation afin de mieux contrôler ses réseaux.

- Enregistrement : Un pare-feu efficace peut enregistrer le trafic réseau, afin de fournir des informations actualisées sur ce qui se passe. Il peut également montrer les vulnérabilités et fournir des informations sur une attaque en cours sur le web.

Les pares-feux africains

Les pares-feux sont utilisés en Afrique aussi pour protéger les réseaux et les données sensibles contre les cybermenaces. Cependant, le déploiement et l'utilisation des pares-feux en Afrique sont confrontés à des défis uniques.

L'un des principaux défis est le manque d'infrastructures et de ressources dans de nombreux pays africains, ce qui peut rendre difficile la maintenance de solutions de sécurité avancées telles que les pares-feux de nouvelle génération. En outre, de nombreuses organisations africaines ne disposent pas nécessairement de ressources financières pour investir dans des technologies de sécurité avancées, ce qui peut limiter leur capacité à protéger leurs réseaux contre les cybermenaces.

Un autre défi est le manque d'expertise en matière de cybersécurité en Afrique. Les organisations en Afrique s'efforcent de chercher les compétences adéquates pour installer, configurer et gérer les pares-feux.

Malgré le rôle essentiel que jouent les pares-feux dans la sécurité des réseaux, les organisations africaines peuvent confronter de nombreux défis. Il est donc important que les organisations africaines s'efforcent de surmonter ces difficultés pour que leurs réseaux soient protégés des cybermenaces.

Le pare-feu de nouvelle génération

Choisir le bon type de pare-feu pour protéger le réseau est essentiel en ce qui concerne la sécurité. En effet, choisir un mauvais type de pare-feu est pire que de ne pas en avoir du tout car il donne un faux sens de sécurité alors que le réseau est ouvert aux attaques. Parmi les types de pare-feu que les entreprises peuvent utiliser, on trouve le pare-feu de nouvelle génération « *NGFW* ».

Un pare-feu de nouvelle génération est un programme de sécurité qui comprend des mesures de sécurité du réseau, telles que des *IDS* et des *IPS*, l'analyse et le filtrage des logiciels malveillants, des renseignements avancés sur les menaces (correspondance des modèles, détections basées sur les protocoles, détection des logiciels malveillants basée sur la réputation, détections basées sur les anomalies, etc.), des programmes antivirus et des fonctions de qualité de service *(QoS)*.

Les avantages des pares-feux de nouvelle génération consistent notamment en la possibilité de combiner des fonctions de pare-feu traditionnelles avec des capacités de cybersécurité avancées, et inspecter le trafic réseau à partir de la liaison de données jusqu'à l'application. Toutefois, il est important de noter que les pares-feux de nouvelle génération sont plus coûteux, présentent des points de faiblesse uniques massifs, leur déploiement est lent et leur installation doit être mise en place par des experts.

Bien que les pares-feux soient des moyens de cybersécurité efficaces pour les entreprises, ils ne garantissent pas la sécurité de votre réseau ou de vos données. Pour une protection idéale, les entreprises doivent intégrer plusieurs autres solutions de cybersécurité, comme les logiciels antivirus, les outils de cryptage, et les tests de pénétration. Cependant, sans un pare-feu efficace, le réseau de votre entreprise sera plus exposé et peut devenir une cible pour les cybercriminels. Alors, il faut envisager le déploiement d'un pare-feu avancé pour protéger les entreprises et améliorer leur niveau de cybersécurité. TR

L'invention de l'urbanisme : l'émergence des villes intelligentes en Afrique

L'Afrique est le deuxième continent le plus peuplé du monde, avec 1,4 million d'habitants, et comme la plupart des autres continents, son avenir réside dans ses villes. D'ailleurs, en 2035, il est prévu que les villes abriteront plus de la moitié de la population.

Le pas le plus difficile est de rendre les villes plus résilientes, inclusives et prêtes à se développer afin de se préparer à cette réalité. Pour cela, le modèle des villes intelligentes peut accroître la prospérité sur tout le continent.

Bien qu'il existe de nombreux obstacles liés au développement de ces villes intelligentes, certains exemples de conception récents et mentionnées ci-dessous aussi bien que certains exemples à venir tentent d'y parvenir.

L'évolution de la société et l'expansion des infrastructures dans les marchés en développement sont le pilier des villes intelligentes. L'urbanisation et l'adoption de technologies devraient commencer dans diverses capitales d'Afrique, et elles l'ont déjà dans certains pays.

Les éléments nécessaires pour développer une ville intelligente

Toute initiative de villes intelligentes couronnée de succès cible cinq secteurs de base de manière holistique et intégrée.

1. Modernisation de l'infrastructure

La modernisation de l'infrastructure en tant qu'infrastructure de base de toute collectivité intelligente permettra de relancer les efforts visant à accroître la connectivité. Cette étape commence avec le réseau, le système électrique et s'appuie sur les télécommunications de pointe, la mobilité et les bâtiments intelligents comme éléments fondamentaux de la ville dans son ensemble. Pour que l'Internet des objets *(IdO)*, l'intelligence artificielle *(IA)*, les véhicules électriques *(VE)* et d'autres technologies fonctionnent, le réseau devient leur système nerveux central.

2. Le leadership, les politiques et la réglementation

Pour créer une ville vraiment intelligente, il est nécessaire de mettre en œuvre un leadership audacieux, une législation avancée et des cadres réglementaires convenables. Les représentants du gouvernement, les décideurs et les dirigeants municipaux et communautaires doivent élaborer un nouveau paradigme afin d'élargir l'infrastructure pour répondre aux besoins futurs d'une manière certaine, équitable et rentable.

Pour encourager les entreprises à investir dans le déploiement et l'adoption de technologies de pointe, les dirigeants municipaux et communautaires, les organismes de réglementation et les planificateurs doivent maintenir la sécurité et la confiance du grand public.

3. Services durables

Les gouvernements municipaux doivent mettre en œuvre des plans de durabilité et, dans certains domaines, des plans d'adaptation aux changements climatiques.

Cela exige une accélération rapide de la croissance urbaine vers une ville plus propre et plus viable sur le plan économique grâce à des gains d'efficacité, des dépenses en technologies d'énergie renouvelable et une réforme réglementaire correspondante. En outre, il nécessite l'écologisation des politiques de transport urbain, d'utilisation des terres et de développement. Les risques pour l'économie, la santé publique et la sécurité augmentent si

ce changement n'est pas fait. Étant donné que les risques d'intrusion cybernétique augmentent à mesure que l'infrastructure numérique se développe, il est également important de porter attention à la sécurité numérique.

4. Collaborations avec des centres d'innovation
Un leadership communautaire intelligent tirera également parti des liens avec les innovateurs qui s'attaquent déjà aux problèmes auxquels les villes et les collectivités font face aujourd'hui et à l'avenir. Ces innovateurs comprennent des technologues, des laboratoires gouvernementaux, des universités et des organisations non gouvernementales *(ONG)*. Ces organisations servent déjà de terrain d'essai pour les technologies, les procédures et les concepts qui peuvent être diffusés aux autorités locales, aux entreprises et aux résidents pour le bien de tous.

5. Infrastructure sociale de la collectivité
L'obtention d'un vaste appui du public pour tout programme de villes et de collectivités intelligentes est un processus difficile qui nécessite une sensibilisation et une collaboration poussées avec les institutions communautaires de référence ainsi qu'avec les intervenants individuels. Une communauté intelligente ne peut prospérer que si ses habitants utilisent et interagissent avec les ressources et les services offerts.

Les villes et les communautés doivent avoir un plus grand sens de l'orientation et de l'urgence à la lumière de l'ampleur de la modernisation qui doit avoir lieu aux niveaux physique, numérique et social.

Avantages des villes intelligentes

De meilleurs services de transport
Une ville intelligente a le pouvoir d'élever considérablement le niveau de transport offert aux résidents. Il sera plus apte à gérer la circulation, à surveiller les transports en commun et à fournir une sécurité publique à ses citoyens.

De plus, ce type de transport fera une meilleure utilisation des ressources disponibles, il pourra réduire les coûts grâce à l'entretien préventif, une consommation d'énergie plus faible, et moins de ressources utilisées pour les accidents.

Des services publics efficaces
Comme il n'y a qu'un nombre limité de ressources naturelles disponibles pour satisfaire la demande publique, les villes intelligentes seront équipées des technologies et des ressources nécessaires pour réduire notre consommation de ressources naturelles et réduire le gaspillage d'eau, électricité et autres ressources.

Réduction de l'impact environnemental
Une ville intelligente dispose de dizaines de milliers de structures écoénergétiques qui peuvent améliorer la qualité de l'air, utiliser des sources d'énergie renouvelables et réduire la dépendance aux sources d'énergie non renouvelables, limitant par conséquent l'impact écologique.

Amélioration des infrastructures
La maintenance des vieilles routes, bâtiments, autoroutes, et ponts est exorbitante. Toutefois, grâce aux technologies intelligentes, les villes pourront prévoir et identifier de manière analytique les zones qui peuvent causer des défaillances d'infrastructures avant qu'elles ne surviennent.

Possibilités d'investissement
Les villes intelligentes offriront aux investisseurs étrangers et locaux une occasion d'établir de nouveaux projets dans les villes intelligentes, comme l'immobilier, le transport, la fabrication et les projets liés à l'énergie.

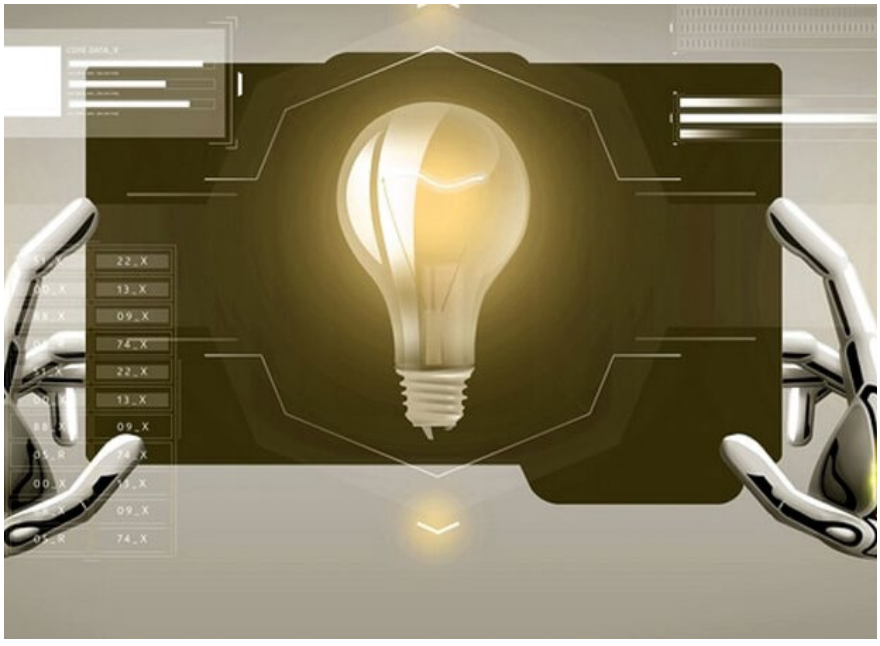
Diminution de la criminalité
La criminalité diminuera en raison de la capacité accrue du gouvernement de surveiller de près les interactions entre les citoyens grâce à la technologie.

Exemples de villes intelligentes

Konza Technopolis du Kenya
Konza, située à 60 kilomètres du centre-ville de Nairobi, recueillera des informations à partir d'appareils intelligents et de capteurs intégrés dans les bâtiments et les routes afin d'améliorer l'engagement des citoyens, la circulation et les services de communication. D'ici 2030, elle devrait être officiellement lancée.

Eko Atlantic au Nigeria
Eko Atlantic sera de la même taille que le quartier des gratte-ciel de Manhattan et sera construit sur 10 millions de mètres carrés de terrain. Elle a une conception urbaine parfaite, des télécommunications de pointe, des routes larges et des rues bordées d'arbres, et elle produira sa propre eau et électricité. C'est une ville autosuffisante et durable. TR

Le Bénin met en œuvre une stratégie nationale d'Intelligence Artificielle

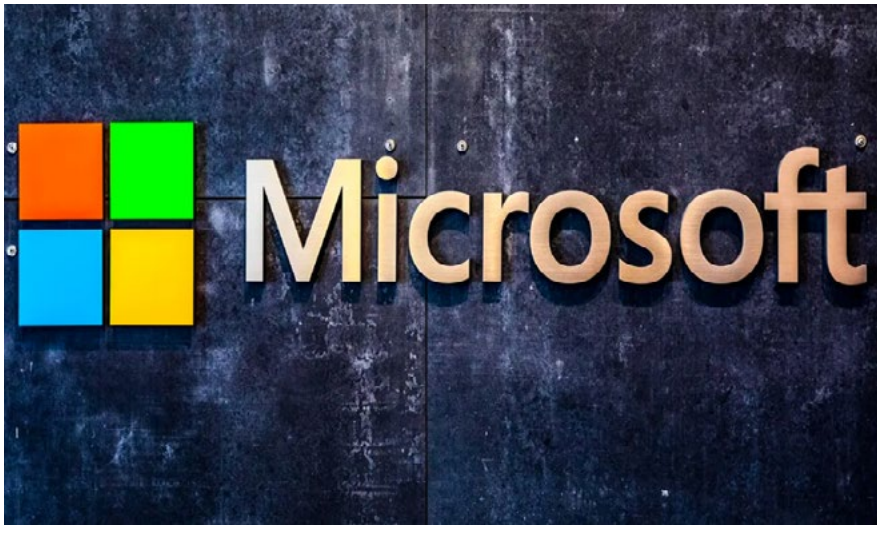


Afin de pouvoir se positionner en termes d'exploitation des opportunités liées à l'intelligence artificielle *(IA)*, le gouvernement béninois a adopté une stratégie nationale et un plan d'action liés aux mégadonnées et à l'intelligence artificielle *(SNIAM)* 2023-2027.

Cette démarche va augmenter l'attrait pour toutes sortes d'investissements, en particulier de la part du secteur privé et des partenaires au développement.

L'exécution du plan quinquennal offrira la possibilité d'utiliser l'*IA* dans les domaines de développement ciblés, tels que l'éducation, la santé, l'agriculture, le tourisme, etc., avec un montant provisoire de 7,8 millions de dollars.

Microsoft se relève de sa défaillance majeure



Plusieurs services de *Microsoft*, parmi lesquels l'outil de travail collaboratif *Teams* ou la messagerie *Outlook*, ont été largement perturbés en raison d'un souci de configuration réseau.
Microsoft a indiqué sur *Twitter* avoir *« annulé »* une mise à jour récente de configuration à l'origine du problème. De nombreux utilisateurs à travers le monde se sont plaints dans la matinée de ne pouvoir accéder à leurs outils habituels.

Le géant informatique reconnaissait que certains utilisateurs n'avaient pas pu accéder à une dizaine de services, incluant *Teams, Exchange*, *Outlook, SharePoint,* ou *OneDrive* for Business.

Microsoft a annoncé mi-janvier qu'il allait licencier environ 10 000 employés d'ici fin mars (soit un peu moins de 5% de ses effectifs), invoquant la conjoncture économique et les changements de priorités de ses clients.

Le groupe a vu sa croissance décélérer et ses bénéfices diminuer lors du dernier trimestre 2022, signe que la conjoncture économique finit par rattraper même les géants du *cloud.*

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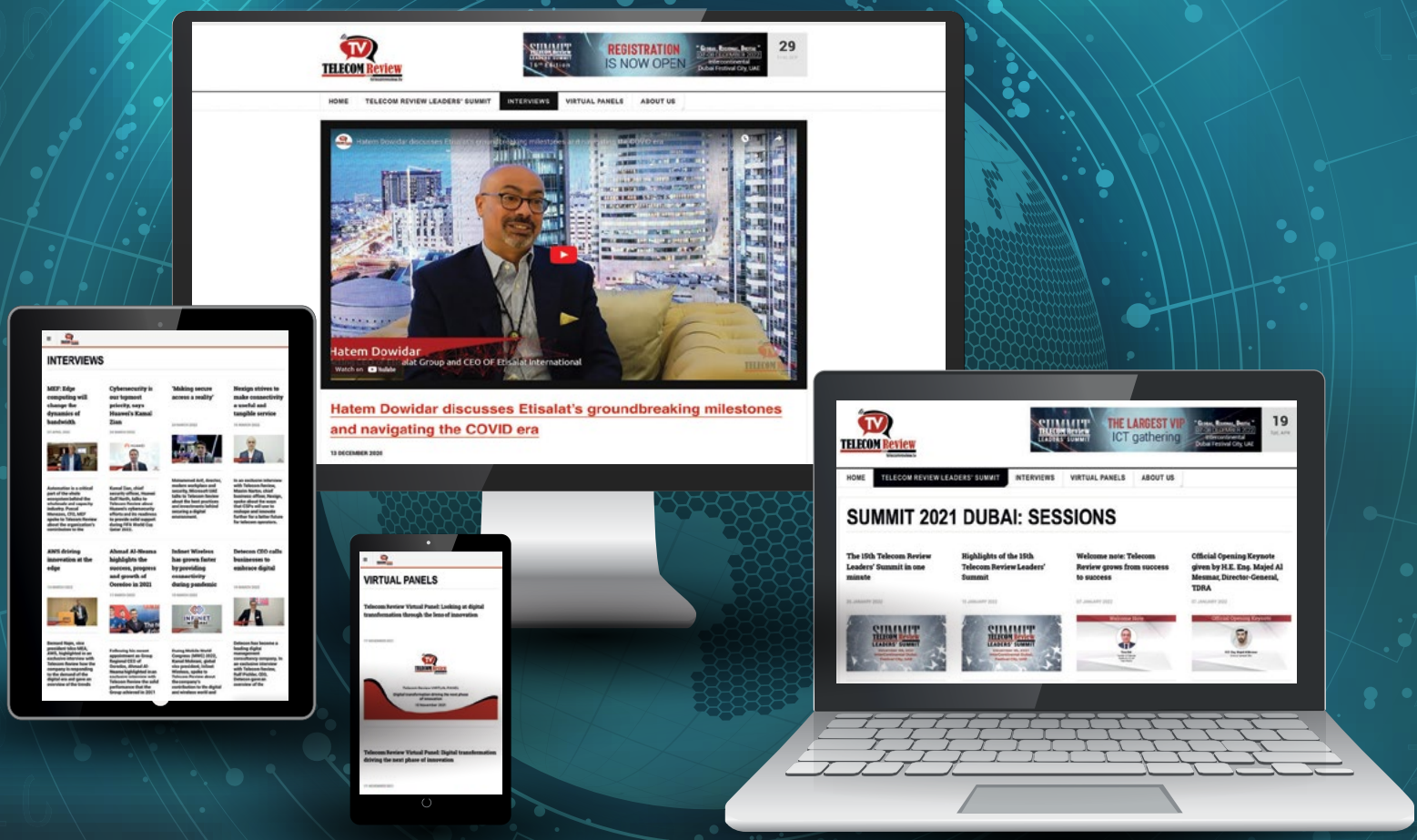

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6G : la voie vers un monde entièrement connecté

Succédant à la 5G, la 6G est la sixième génération de technologie de réseau mobile actuellement en cours de développement pour les communications sans fil sur les réseaux cellulaires de données. Selon le rapport intitulé « 6G The Next Hyper-Connected Experience for All », l'UIT a entamé ses efforts autour du développement de la 6G en 2021, et terminera probablement en 2028, lorsque les premiers appareils 6G seront disponibles. En 2030, le déploiement sera proche de l'omniprésence.

La vision de la *6G* repose sur le désir de créer une réalité transparente où les mondes numérique et physique tels que nous les connaissons aujourd'hui sont fusionnés. Cette réalité du futur offrira de nouvelles façons de rencontrer et d'interagir avec d'autres personnes, de nouvelles possibilités de travailler de n'importe où et de nouvelles façons de découvrir des lieux et des cultures inconnus. En offrant une communication intelligente omniprésente, la *6G* contribuera à la création d'une société plus agréable à vivre, plus durable et plus efficace.

A quoi ressemblera le monde avec la 6G ?

Nous envisageons un monde physique connecté et durable, à la fois numérisé et programmable, où les humains sont assistés par des machines intelligentes. Parmi les exemples de cas d'utilisation importants de la *6G*, figurent la santé en ligne pour tous, l'agriculture intelligente, la surveillance de la terre, le jumeau numérique, et la navigation des robots. Ces cas d'utilisation peuvent être classés sous trois grands scénarios d'utilisation : l'Internet des sens, les machines intelligentes connectées et un monde durable connecté.

De plus, avec la *6G*, il va falloir:

- **Utiliser le spectre libre :** une partie importante de la recherche sur la *6G* se concentre sur la transmission de données à des fréquences ultra-hautes. En effet, la *5G* peut supporter des fréquences allant jusqu'à 100GHz, même si aucune fréquence supérieure à 39GHz n'est actuellement utilisée. Pour la *6G*, les ingénieurs tentent de transférer des données sur des ondes de l'ordre de centaines de gigahertz (GHz) ou de térahertz (THz). Ces ondes sont minuscules et fragiles, mais il reste une quantité massive de spectre inutilisé qui pourrait permettre des vitesses de transfert de données étonnantes.

- **Améliorer l'efficacité du spectre libre :** les technologies sans fil existantes permettent la transmission ou la réception sur une fréquence spécifique en même temps. Pour une communication bilatérale, les utilisateurs peuvent diviser leurs flux en fonction de la fréquence *(Frequency Division Duplex ou FDD)* ou en définissant des périodes de temps *(Time Division Duplex ou TDD)*. La *6G* pourrait améliorer l'efficacité de la distribution actuelle du spectre en utilisant des mathématiques sophistiquées pour émettre et recevoir simultanément sur la même fréquence.

- **Profiter des réseaux maillés** : la mise en place de réseau maillé est tendantiel depuis des décennies, mais les réseaux *5G* sont encore principalement basés sur une architecture en étoile *« hub-and-spoke architecture »*. Par la suite, les appareils des utilisateurs téléphones sont reliés à des nœuds d'ancrage *(tours de téléphonie mobile)*, qui se connectent à un réseau fédérateur. La *6G* pourrait utiliser les machines comme amplificateurs des données des autres utilisateurs, permettant à chaque appareil d'étendre la couverture en plus de l'utiliser.

Les points saillants de la 6G

Les réseaux *6G* peuvent coexister avec la *5G* pour une certaine période et constitueront une amélioration significative par rapport aux générations précédentes à plusieurs égards. En réalité, la *6G* offrira les caractéristiques différenciées comme tout d'abord les taux de transfert de données très élevés. La *5G* devrait offrir un débit de données maximal de 20 Gbps et un taux de données expérimenté par l'utilisateur de 100 Mbps. Toutefois, la *6G* offrira un taux de données maximal de 1 Tbps. De même, elle portera le débit de données expérimenté par l'utilisateur à 1 Gbps. Par conséquent, l'efficacité spectrale de la *6G* sera presque plus du double de celle de la *5G*. Cette efficacité spectrale plus élevée offrira à de nombreux utilisateurs un accès instantané aux services multimédias modernes. Les opérateurs de réseaux doivent repenser leurs infrastructures actuelles pour permettre une meilleure efficacité spectrale Deuxièmement, on cite les fonctions réseau à très faible latence. La latence de la *5G* sera ramenée à une milliseconde seulement. Les performances de nombreuses applications en temps réel seront améliorées par cette latence ultra-faible. Cependant, la technologie de communication sans fil de la *6G* réduira la latence ressentie par l'utilisateur à moins de 0,1 milliseconde. De nombreuses applications en temps réel sensibles aux délais auront de meilleures performances et fonctionnalités grâce à cette réduction massive de la latence. En outre, la réduction de la latence permettra d'intervenir en cas d'urgence, de réaliser des procédures chirurgicales à distance et d'automatiser les activités industrielles. La *6G* facilitera l'exécution sans faille d'applications en temps réel sensibles aux délais en rendant le réseau 100 fois plus fiable que les réseaux *5G*.

En offrant une communication intelligente omniprésente, la 6G contribuera à la création d'une société plus agréable à vivre, plus durable et plus efficace

Troisièmement, l'utilisation de l'*IA* et du *ML* pour une connectivité optimale va s'accélérer. La *5G* permettra aux technologies d'intelligence artificielle *(IA)* et d'apprentissage machine *(ML)* d'atteindre leur plein potentiel. L'*IA/ML* sera mise en œuvre dans divers composants, niveaux et services du réseau. Elle permettra d'atteindre une efficacité supérieure avec une complexité de calcul réduite. Les développeurs de la *6G* souhaitent adopter une approche de l'*IA/ML* permettant de déterminer la méthode optimale de communication entre deux points d'extrémité.

Finalement, l'expérience réseau personnalisée. Avec la *5G*, l'*Open RAN* est une technologie jeune et évolutive, alors qu'avec la *6G*, elle sera mature. Le réseau d'accès radio ou *RAN* basé sur l'*IA* permettra aux opérateurs de réseaux mobiles d'offrir une expérience réseau personnalisée aux utilisateurs en fonction des informations en temps réel recueillies auprès de diverses sources. Les opérateurs peuvent en outre exploiter les données utilisateur en temps réel pour améliorer les services de qualité supérieure en personnalisant la qualité d'expérience *(QoE)* et la qualité de service *(QoS)*.

La 6G et les opérateurs télécoms

La compétition a commencé entre les entreprises de télécommunications qui ont déjà entamé des projets de recherche pour remporter la course de la *6G*. Voici quelques exemples de recherches actives sur la *6G*.

Nokia est à la pointe de la *5G* et cette avance l'aide également dans la compétition pour les réseaux *6G*. En plus de ses multiples partenariats, la plus grande réussite de *Nokia* est sans doute que l'entreprise est le leader du projet de l'initiative phare de la *6G* en Europe, *Hexa-X*. La vision d'*Hexa-X* est de connecter les mondes humain, physique et numérique avec un tissu de facilitateurs technologiques *6G*. *Hexa-X* est la première initiative de recherche officielle de l'écosystème

> L'IA/ ML sera mise en œuvre dans divers composants, niveaux et services du reseau

industriel visant à accélérer et à encourager la recherche sur la *6G* et à faire de l'Europe un leader à l'ère de la 6G.

D'autre part, *Huawe*i a commencé à investir dans les recherches sur la 6G en 2017, tout en menant le déploiement commercial de la *5G*. L'ambition de la vision *6G* est de rendre la planète intelligemment connectée, durablement développée, mieux protégée et pleine de vitalité dans tous les domaines de la vie.

ZTE, le fabricant chinois d'équipements de télécommunications a convenu avec le principal opérateur *China Unicom* d'examiner conjointement les perspectives et les tendances technologiques de la *6G*, et de mener des recherches sur la coopération en matière de technologies clés et de normes.

En outre, comme pour la *5G, Ericsson* mène des recherches intensives sur la *6G*. En juin 2021, *Ericsson* a publié un article sur cinq éléments technologiques clés qui conduiront l'évolution des réseaux mobiles vers 2030 et au-delà. Ce document présente également les futurs cas d'utilisation de la technologie *6G*.

Bien que les réseaux *6G* ne soient pas encore disponibles et encore en phase de recherche, les entreprises anticipent déjà des cas d'utilisation de réseaux sans fil de pointe utilisant la technologie *6G*.

Les caractéristiques principales de cette nouvelle génération de réseau ne sont pas encore définitives mais incluent jusqu'à présent des taux de transfert de données à haut débit et des canaux radio multiples pour une fiabilité et une zone de couverture accrues.

Aujourd'hui, chacun a sa propre vitesse de connexion à l'internet et ses propres limites d'utilisation des données. Avec la *6G*, tous les appareils sans fil se connecteront à un seul canal Internet à haut débit, sans aucune limite. Quoi qu'il en soit, la perspective d'utiliser cette nouvelle technologie reste populaire, et pourrait résoudre un grand nombre des problèmes actuels liés à la communication sans fil. TR

> Avec la 5G, l'Open RAN est une technologie jeune et évolutive, alors qu'avec la 6G, elle sera mature

Ouverture d'un laboratoire 5G au Cameroun

Orange Cameroun a annoncé qu'il lancera cette année un laboratoire *5G* à Douala, le centre économique du pays. Ce laboratoire vise, d'une part, à initier les jeunes aux opportunités offertes par cette technologie et, d'autre part, accélérer le déploiement des services *5G* dans le pays.

Ce laboratoire sera situé au sein de l'*Orange Digital Center* qui a été officiellement inauguré en octobre 2021. C'est un écosystème entièrement dédié à l'avancement des compétences numériques et à l'innovation.

L'augmentation significative de la vitesse de connexion est le premier avantage de la *5G*. Des vitesses de connexion encore plus rapides que la *4G* devraient être possibles. Même une vitesse multipliée par dix a été évoquée. Ainsi, le débit pourrait théoriquement être de 500 Mb/s en émission et de 1 Gb/s en réception. La réduction de la latence est un autre avantage de la *5G*. Il s'agit d'une indication de temps qu'il faut pour qu'une commande soit traduite à l'écran après son lancement.

Orange Cameroun, à travers ce laboratoire, va familiariser les utilisateurs avec la *5G*, une technologie qui n'est pas encore très développée au *Cameroun*.

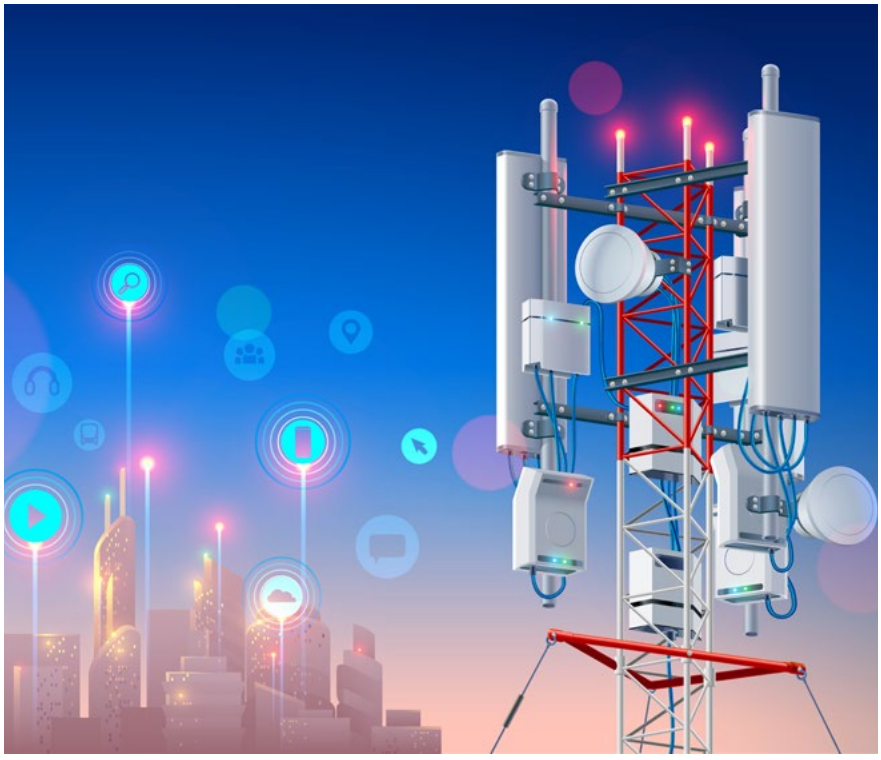
Structures réglementaires en Afrique : Une priorité pour MTN

Le PDG du groupe *MTN*, Ralph Mupita, a appelé à la modernisation et à l'harmonisation des structures réglementaires à travers l'Afrique, ainsi qu'à l'effort collectif de toutes les parties prenantes pour que le continent puisse offrir une couverture haut débit universelle d'ici 2030. *« Les cadres réglementaires de l'industrie des télécommunications en Afrique ne reflètent pas nos progrès actuels. Ils sont encore positionnés pour l'ère de la voix »*, a déclaré Mupita lors de l'Africa *Prosperity Dialogue* qui s'est tenu à Peduase, Ghana.

Plusieurs dirigeants africains éminents ont assisté à l'événement, notamment le président du Ghana, Nana Addo Dankwa Akufo-Addo, et l'ancien président du Niger et champion de *l'AfCFTA, S.E.* Issofou Mohamadou.

Mupita a souligné la nécessité d'un cadre réglementaire solide, pertinent et adapté à l'avenir. Il est également nécessaire que tous les acteurs du secteur contribuent à la construction et à l'investissement dans les infrastructures, a indiqué Mupita, précisant que l'Afrique aurait besoin d'environ 100 milliards de dollars d'investissements en capital pour atteindre son objectif de haut débit universel pour tous les Africains d'ici 2030.

Les opérateurs télécoms et les fournisseurs de services Internet guinéens conforment à la loi



En Guinée, les opérateurs télécoms, les fournisseurs d'accès Internet, les fournisseurs d'infrastructures de télécommunication, opérant dans l'illégalité ont jusqu'au 15 février pour se mettre en règle.

Passé ce délai, ils verront leurs activités suspendues jusqu'à nouvel ordre avec effet immédiat et jusqu'à leur régulation, a averti l'*Autorité de Régulation des Postes et Télécommunications (ARPT).*

« L'Autorité de Régulation des Postes et Télécommunications (ARPT), dans le cadre de sa mission régalienne de contrôle du respect par les opérateurs des prescriptions, invite les opérateurs (postaux, téléphonie mobile), les promoteurs(radios, télévisions), les fournisseurs d'accès internet et d'infrastructures de télécommunication, les détenteurs de PMR(Talkie-walkie), qui ne sont pas en règle de leurs obligations administratives et financières à se rapprocher sans délai de l'ARPT pour leur régularisation. »

L'*ARPT,* après avoir épuisé toutes les voies de notifications, y compris celles d'exploit d'huissier, des relances par courriers administratifs, de multiples réunions de concertation, informe l'ensemble des consommateurs et opérateurs que la date limite de paiement de leurs redevances et de régularisation est fixée au Mercredi 15 février 2023.

ARTEC révèle les problèmes techniques qui nuisent au lancement de la 5G

L'autorité de régulation des technologies de communication *(ARTEC)* a révélé que certains problèmes techniques doivent être résolus avant que les services *5G* puissent être lancés à Madagascar, mais elle s'attend à ce qu'ils soient opérationnels 'bientôt'. L''organisme de surveillance a expliqué que des difficultés étaient détectées lors des tests *5G* menés par un opérateur national anonyme sur 20 sites, entraînant des interférences avec les bandes de fréquences voisines. L'*ARTEC* a déclaré qu'elle prévoyait de publier une feuille de route détaillant les mesures visant à réorganiser l'utilisation des bandes de fréquences.

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Place : Palace of Culture, Algiers, Algeria

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Lieu : Palais de la Culture d'Alger, Algérie

Gitex Africa

GITEX AFRICA is the hyper-connector event transforming Africa's core tech foundations that are solving global challenges. This pan-African accelerator supercharges the potential to access and build core tech infrastructure, and enable global tech players, policy-makers, start-ups, investors, and talent to realize true acceleration in the world's rising tech continent

Place : Morocco, Marrakech

Gitex Africa

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Lieu : Maroc, Marrakech

GITEX Global

GITEX GLOBAL features every major technology player, trend and vertical, and it covers sectors including smart cities, cybersecurity, metaverse, the data economy, mobility, healthcare and telecoms.

Place: Dubai World Trade Center, UAE

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Lieu : Dubai World Trade Center, UAE

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