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# Telecom Egypt's Infrastructure:
## Data-Empowered and Innovation-Driven

# L'infrastructure de Telecom Egypt :
## Une infrastructure alimentée par les données et basée sur l'innovation

**Eng. Adel Hamed**
Managing Director
and CEO, Telecom Egypt

- **Africa's Digital Transformation in 2023 Shaped by Major Trends**
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**Founder of Telecom Review Group**
**CEO of Trace Media International**
**Editor in Chief**
Toni Eid
toni.eid@tracemedia.info

**Copy Editing Director**
Chris Bahara
chris.bahara@tracemedia.info

**Journalist**
Elza Moukawam
elza@tracemedia.info

**Representative in Ivory Cost**
Lacinan Ouattara
lacinan@tracemedia.info

**Editorial Team**
Toni Eid (UAE),
Chris Bahara (UAE)
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Lacinan Ouattara (Ivory Coast),
Jeff Seal (United States)

**Chief Operating Officer**
Issam Eid
issam@tracemedia.info

**Advertising Enquiries**
Mohammed Ershad
ershad@tracemedia.info

**Operations Director – Group**
Anna Chumak
anna@tracemedia.info

**Graphic Designer**
Vanessa Haber

**News**
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**Issam Eid,**
Chief Operating Officer
Trace Media Intl.
Telecom Review Group

# The AI chatbot that will endanger human kind…

With 175 billion parameters, ChatGPT (GPT-3 version) is one of the largest and most powerful language processing AI models to date. To those of you who do not know, it is an AI chatbot developed in San Francisco OpenAI firm; it's co-founded in 2015 by Elon Musk and Sam Altman and is financed by well-known investors. However, it's a free app and anyone can access and use it but try to visualize what ChatGPT or that AI Chatbot can do. It can actually endanger human kind in many ways! Why is that?

For instance, students in schools and university can actually use that AI Chatbot to do their essays instead of them. It is not only a matter of cheating but as well, we are forming a generation of unwise humans' beings. That is without mentioning that ChatGPT will replace more than 50 jobs or rather those 50 jobs will not be there after few years of now such as content creator, data analyst, customer service representative, medical receptionist, translator, web developer, etc... Imagine that you won't need to appoint a lawyer when an AI-Robot can defend you in court?

Believe it or not although the app may not be updated to a point if you ask the AI Chatbot about recently launched mobile or handset it will give you the latest answer maybe dated to few months. However, what is hard to distinguish is between AI Chatbot and real human writing!

Eng. Adel Hamed, Managing Director and CEO, Telecom Egypt

# Telecom Egypt's Infrastructure: Data-Empowered and Innovation-Driven

TELECOM Review AFRICA

In an exclusive interview with Telecom Review, Eng. Adel Hamed, managing director and CEO at Telecom Egypt, talks about the importance of being an infrastructure industry leader, the company's upcoming submarine cable projects, its strategies and goals for 2023 and more.

**You have been an infrastructure industry leader for some time despite having faced numerous obstacles, including the recent pandemic. What inspires you in your efforts to drive technology and innovative solutions at Telecom Egypt?**

At Telecom Egypt, we are always inspired by our customers' needs, which is consistent with our customer-centric approach. As such, over the past few years, we have proactively been developing and investing in state-of-the-art, reliable and enabling ICT infrastructure, and broadening our services to meet the evolving needs of customers. By capitalizing on our robust network, profound expertise and skilled human capital, we make every effort to offer our customers data value propositions across all technologies. We are also working on expanding from an established international route to a premium regional digital hub. Additionally, we are embracing digital transformation nationally to empower our customers and employees, while simultaneously evolving into a digital company through expanding efficiency and optimization to enhance our performance in all fields — all through our brand "WE."

**Your 2023 guidance reflects a positive outlook despite the ongoing global challenges. What are the company's strategies and goals for the coming year?**

Telecom Egypt has always been keeping abreast of the latest, top-notch technologies and trends in the industry. Following its transformation into an integrated telecom operator and the first digital operator in Egypt, Telecom Egypt is now focusing its efforts on transitioning from a telco into a techco. By leveraging their strategic agility, techos are often able to evolve and develop rapidly, adapt to their market environment, identify new opportunities and address potential challenges. In a digitally-driven world, this transition is vital to enable companies to offer the best value to all stakeholders. Enhancing organizational agility will support Telecom Egypt in formulating transparent targets, enabling seamless operation, and attracting strategic partners. Over the years, Telecom Egypt has achieved remarkable progress in fulfilling its vision of becoming an integrated telecom provider and positioning Egypt as a leading digital hub.

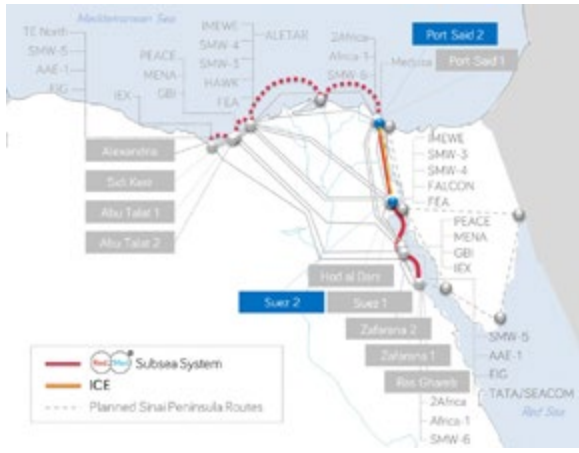
Introducing next-generation technologies and smart connectivity will directly boost the digital capabilities of Telecom Egypt's customers and partners. As one of the largest submarine cable operators in the region, Telecom Egypt is able to offer unmatched value propositions for its modern telecom and IT services.

Furthermore, Telecom Egypt's strategies resonate with Egypt's 2030 Vision, "Digital Egypt," which is an all-encompassing vision that lays the foundations for the transformation of Egypt into a digital society. The company is supporting Egypt's digital transformation plans through its strategic vision of a five-level "digital pyramid": submarine cables (international cable infrastructure) and fiber connectivity serve as the foundation, followed by network connectivity, moving up towards world-class data center facilities, followed by digital platforms and cloud computing, finally reaching solutions and applications at the top. Leveraging its expanding portfolio of solutions, Telecom Egypt will always act as the ICT arm of digitization, providing the digital infrastructure needed to pursue the national developmental march.

**What do you see as the biggest trends and challenges impacting the wholesale and capacity business? What will Telecom Egypt's contribution be to these?**

On the international level, global trends are shaping the future of the telecommunications industry, from the global pandemic to the ever-growing international demand for data and connectivity. Building on its solid foundation and Egypt's strategic location, Telecom Egypt continues to invest in the latest technologies, submarine cables, data centers, and infrastructure to enhance its proactive readiness for any unforeseen incidents and accommodate the increasing demand.

On our part, we are forging ahead with our plans to build submarine cable networks to meet the rising demand for capacity and diversity. We recently initiated a new cooperation agreement with Grid Telecom to construct a submarine cable linking Egypt and Greece. Moreover, we have been working with major global players to build the SEA-ME-WE-6 cable, a 19,200-kilometer submarine cable system connecting multiple countries between Singapore and France. The new cable will extend Egypt's reach as it crosses over the company's distinctive infrastructure through the trans-Egypt network of new geo-diversified crossing and landing points from the other cables in the SEA-ME-WE family. SEA-ME-WE-6 provides an additional layer of diversity and resilience for the high-traffic density route between Asia and Europe, strengthening the overall network of each consortium partner. The added flexibility helps service providers in the consortium rapidly scale capacity, protect traffic from faults, and lower the total cost of network ownership.




Egypt Submarine Cable Infrastructure Map

By capitalizing on our robust network, profound expertise and skilled human capital, we make every effort to offer our customers data value propositions across all technologies


ICE route on the secure West bank of the Suez Canal

> Telecom Egypt's strategies resonate with Egypt's 2030 Vision, "Digital Egypt," which is an all-encompassing vision that lays the foundations for the transformation of Egypt into a digital society

Additionally, we have concluded an agreement to provide international services to Aqua Comms to connect their EMIC-1 cable through Telecom Egypt's seamless optical path between East Africa, Asia, and Europe.

Furthermore, we are serving AFR-IX Telecom by providing a landing point in Egypt for Medusa, their major submarine cable system in the Mediterranean Sea. The cable will be an 8,760-km-long submarine cable system with 24 fiber pairs and a capacity of 20 Tbps per fiber pair. It will link the Mediterranean countries through 16 landing points, connecting Portugal, Spain, France, Italy and Greece with North African countries, including Morocco, Algeria, Tunisia, and Egypt.

**Data centers are evolving worldwide; where is Telecom Egypt on the data center world map?**

Telecom Egypt currently owns and operates seven commercial data center facilities. Driven by innovation and technology, we are always keen to set up new cutting-edge projects to enable us to cater to our customers' needs. We are proud of our data center strategy, which has allowed us to establish our renowned Regional Data Hub (RDH), the country's largest colocation data center, which also recently received the Tier III Gold Certification of Operational Sustainability (TCOS) from Uptime Institute. Telecom Egypt is the first and only holder of the Tier III Gold TCOS certification in Egypt and Africa. RDH is also Tier III certified for the design and constructed facility categories.

This project coincides with the country's efforts to expedite the development of Egypt's ICT infrastructure and digital services as well as contribute to the regional digital transformation. Our new data center is well connected to submarine landing stations in the Mediterranean Sea and Red Sea, giving it access to more than 60 countries around the globe.

RDH hosts the first open-access Internet exchange point in Egypt, EG-IX, based on the IX-as-a-Service (IXaaS) solution offered by AMS-IX, the world-leading interconnection platform service provider. It acts as an open-access Internet exchange platform for a large content delivery network, applications, cloud providers and telecom carriers who are looking to enhance the digital experience of end customers in the MEA region. The new Internet exchange enhances the digital experience of Internet users in Egypt, Africa, and the Middle East.

Additionally, RDH is hosting a local focal point for Cloud4C to provide "RISE with SAP" services. Again, this step aligns with the government's strategy to accelerate digital transformation, increase reliance on cloud services, meet the demand for data services and improve cybersecurity to address the need for SAP services from various key sectors such as finance and healthcare.

Furthermore, Telecom Egypt is securing Lumen's first IP Transit PoPs in Egypt, serving Africa and Asia. The collaboration enables both companies to offer seamless, secure, high-quality internet services to local and regional operators in Africa, Asia and the Middle East.

**What submarine cable projects are you currently planning?**

We are always keen to build partnerships on different levels to maintain our market leadership and satisfy the demand for connectivity in the regions we serve.

We currently have a network of submarine cables with 14 cables currently landing in Egypt, 12 of which seamlessly cross between East and West, and the Red Sea and Mediterranean Sea. For the moment, another five submarine cable projects are expected to land in Egypt in the next few years, including the renowned 2Africa, Africa-1, IEX, SEA-ME-WE-6 and Medusa cable systems.

In addition, the company is aggregating its existing and planned

projects to offer end-to-end connectivity to Africa and connect both its east and west coasts to Europe via its new subsea system, the Hybrid African Ring Path (HARP), which will contribute to digitalization across the continent.

Meanwhile, the strategic cooperation with Grid Telecom, which connects Egypt to Greece, offers a new path that differs from our existing Mediterranean routes. Once completed, this hybrid terrestrial and submarine network will provide the shortest possible path across the Mediterranean basin to the Balkans region, as well as other important destinations such as Genoa and Marseilles.

**In your opinion, how will Telecom Egypt continue to grow and stay competitive on a regional and global scale?**

Telecom Egypt has an excellent track record of enabling customers to extend their network reach to global destinations. It has been serving customers in Egypt, the region, and beyond using advanced technology, reliable infrastructure solutions and a wide network of submarine cables connecting the Red Sea and Mediterranean Sea. Globally, we serve the international community by investing in diverse technical solutions that enrich Egypt's role as the pivotal East-to-West crossing.

On the regional scale, we have been working to improve connectivity with our neighbors, Sudan, Libya, Jordan and Saudi Arabia. We signed an agreement with Orange Jordan to create a highly reliable terrestrial system connecting Iraq to Europe through Jordan and Egypt. The new system, commercially known as Cairo-Amman-Baghdad System (CAB), has been operational since the third quarter of 2022. It capitalizes on the distinguished international infrastructure that both operators possess, providing high-quality services via diversified and flexible paths to meet the growing demand for communication services in the Iraqi market. We also signed a strategic memorandum of understanding with the Saudi operator, Mobily, to establish the first direct bilateral submarine cable connection between Egypt and Saudi Arabia. The strategic agreement sets the groundwork to explore different extension options: westwards to Europe through Telecom Egypt's diverse trans-Egypt routes and eastwards to the Arabian Gulf over Mobily's network, utilizing both companies' reliable networks and international reach through their existing and future optical interconnectivity to neighboring countries. This new, high-capacity, fiber-optic, subsea cable line aims to support the demand associated with the surge in data traffic.

Red2Med Landing witnessed by the Egyptian ICT minister

**Geographical diversity is at the forefront of the ICT industry. How do you manifest this at Telecom Egypt?**

At Telecom Egypt, we have talented teams that persistently work with geographical diversity in mind to further improve our customer experience in all aspects nationally, regionally and internationally. This is why we have increased the number of geographically diverse landing stations on the Red Sea and Mediterranean Sea from 4 to 10 over the past decade.

> Telecom Egypt continues to invest in the latest technologies, submarine cables, data centers, and infrastructure to enhance its proactive readiness for any unforeseen incidents and accommodate the increasing demand

RDH Data Center

> We are always keen to build partnerships on different levels to maintain our market leadership and satisfy the demand for connectivity in the regions we serve

The same concept applies to the diverse terrestrial crossing routes which connect the cable landing stations on the Red Sea and Mediterranean Sea. We have 10 diverse trans-Egypt crossing routes, which will increase to 11 with the commercialization of the Red2Med cable system.

Red2Med is a breakthrough in the transit paths for submarine cables linking Africa, Europe and Asia. It is a wholly-owned, trans-Egypt, hybrid crossing solution, which was inaugurated last October during its landing in Ras Ghareb by the Gulf of Suez in the Red Sea. It runs from Ras Ghareb to Port Said landing station by the Mediterranean Sea, connecting the two seas over a short, fast and reliable infrastructure. The new crossing solution is composed of three segments: from the South, it encompasses the Red Sea submarine festoon cable segment, which is a repeaterless link landing in Ras Ghareb, Zafarana, and Suez; it then extends to the Internet Corridor of Egypt (ICE), linking Suez to Port Said; and finally, it continues to connect to the planned Mediterranean Sea submarine festoon cable.

On its own, the ICE cable, aka the "Golden Route," is by far the most reliable, shortest and fastest crossing globally, linking the three continents of Africa, Asia and Europe. This trans-Egypt cable, which spans 200 kilometers and runs along Al-Morshedeen Road on the west bank of the highly-secured Suez Canal campus, is a one-of-a-kind route.

**What is the importance of being the first operator in Egypt and Africa to implement the green tower as an eco-friendly alternative?**

Egypt recently hosted COP27 and emphasized the importance of implementation and solutions for a new sustainable development model that will benefit the environment and achieve economic and social development. As such, being the first operator to implement the green tower in Egypt and Africa solidifies our intentions to support the country's direction on the ground.

The eco-friendly wireless network tower is made of Fiber Reinforced Polymer (FRP), which emits 43% less carbon dioxide than its steel alternative. It is partially powered by solar cells and supports wireless network antennas and radio units that use cutting-edge, energy-saving technology.

The project also demonstrates Telecom Egypt's determination to adhere to the highest international green quality standards, reduce its environmental footprint, and improve environmental sustainability in the pursuit of a low-carbon future — all while contributing to a 20% improvement in signal quality when compared to standard antennas.

**Society engagement and empowerment have become an integral part of running businesses. To what extent does Telecom Egypt manifest its commitment to these approaches?**

Telecom Egypt seizes every possible opportunity to enhance the lives of Egyptians through its diverse social programs and initiatives, covering health, education, youth empowerment, and the integration of people with special needs.

> Telecom Egypt seizes every possible opportunity to enhance the lives of Egyptians through its diverse social programs and initiatives, covering health, education, youth empowerment, and the integration of people with special needs

Working in line with the government's strategy for "Digital Egypt," Telecom Egypt provides technical support to free-service hospitals to enhance the quality of healthcare services provided to citizens. Technical support includes high-speed internet and connectivity between branches or laboratories, hosting services to ensure the privacy of patient information and establishing call centers, as well as other telecom services. In continuation of the Telemedicine Project, the company connected ICT services to link a total of 109 healthcare units in remote or underprivileged areas to major hospitals and medical centers around Egypt to boost the efficiency of the healthcare system.

Telecom Egypt also continued to support the national "100 Million Health Initiative" by providing up to 6,000 data SIM cards to healthcare practitioners to ease bookings for check-ups and follow-ups. It further supported the Shefaa Al Orman Hospital to establish a medical waste disposal unit to safeguard the environment and hospital visitors. The initiative also enabled the hospital to cut spending on waste transfer by implementing a sustainable alternative; the money saved was put towards medical treatments.

In addition to various training initiatives for youth, Telecom Egypt has successfully transformed seven technical schools into WE Applied ICT Schools in various governorates. These are the first ICT vocational schools in Egypt.

Another project supported by Telecom Egypt, in partnership with the Superior Council of University Hospitals, saw the replacement of 430 non-functioning external units of cochlear implants in 2022. This initiative aims to prevent the social isolation of deaf children while helping families save money on replacing or fixing external units. TR

Börje Ekholm, president and CEO, Ericsson

# Telco Industry Needs to Monetize 5G Features, Says Ericsson's Börje Ekholm

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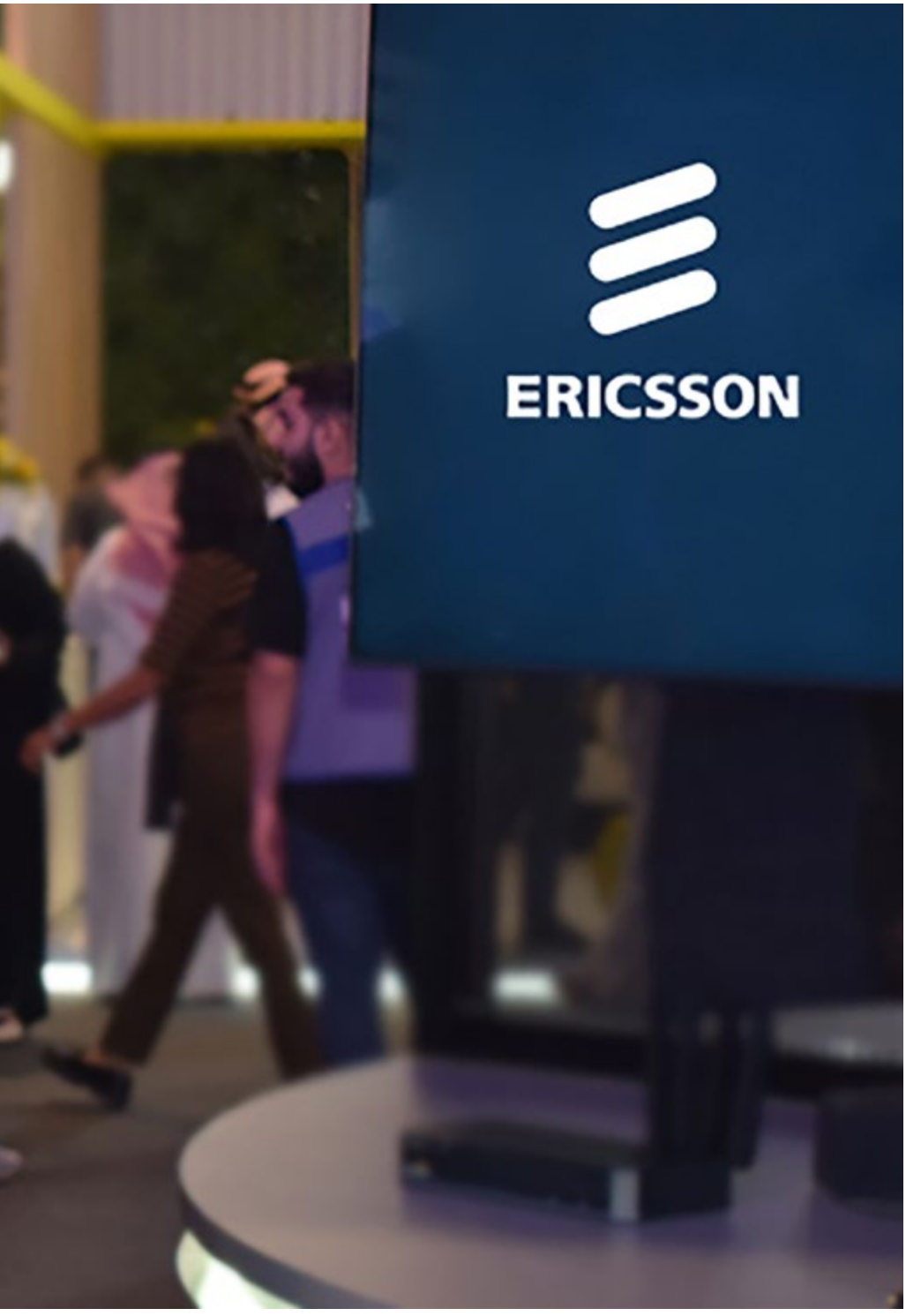


In an exclusive interview with Telecom Review during LEAP 2023, Börje Ekholm, president and CEO at Ericsson, talks about the importance of maintaining technology leadership and enabling enterprise.

**Following the 2022 full-year results, you stated that Ericsson's strategy remains focused on driving sustainable growth. What are the steps you'll take in 2023 to achieve this?**

As a company, we've been focused on mobile networks as our core business, and that is where we spend most of our R&D money and most of our company effort. But we also need to start to broaden our company for the longer term. We can broaden ourselves as a company with the legitimacy of our technology leadership on 5G into the enterprise field, and that is what we're trying to do this year. We took some major steps in 2022. First of all, the formation of enterprise wireless solutions, which is our Cradlepoint wireless Vonage combined with dedicated networks, but also the expansion through the acquisition of Vonage into the platform economy. We see these two steps as major ventures into enterprise. Since we invest in the product portfolio, I would add the importance of sustainability. Driving energy efficiency in our product portfolio is critical. And that's an area that we have invested a lot in and continue to invest in. So by combining these two aspects, we can have a more sustainable company and also create a longer term growth profile by combining the telco market and the enterprise market.

**Ericsson has been making network modernization a top priority. Can you share the motivation behind this and how it will affect the global 5G rollout and widespread enterprise digitalization?**

Network modernization is critical. When it comes to networks, we are starting to see increasing demand for data from the end consumer. Data continues to grow very strongly. Maybe sometimes the growth rate comes off a bit, but it's still in absolute numbers with very high growth. There is a need for operators, the CSPs to basically produce the bit going forward, while maintaining

customer satisfaction and being also energy efficient. So, unless you modernize the network, there is a risk that, first of all, the performance will deteriorate and the cost will go up. We see that there is a need to modernize the networks, and that is what our specific focus is on. When you modernize the networks, we have to prepare for 5G. For us, it's kind of a natural progression for the service providers to start modernizing and then prepare for 5G.

**How will Ericsson's Vonage acquisition leverage the power of the cloud and 5G together and unlock new layers of innovation for consumers and enterprises?**
This is a critical part, and I'm very happy you asked that. We envision the future networks with a horizontal capability that can touch many different use cases, from mission critical and regular consumer use cases to enterprise and emergency use cases. All of them can leverage from the horizontal network platform. But with 5G, and especially 5G standalone, there are going to be specific features available — call it speed, call it latency, call it authentication — that you want to be able to call up to applications. So basically, there is a need for simple APIs that application developers who develop the vertical use cases can call up from the network that requires you to 1) develop the APIs and 2) expose them. You need to be able to charge for them, and you need to be able to consume them in an easy way. That's why the Vonage acquisition provides us with that horizontal layer, the CpaaS platform, that will allow us to both present or expose, consume, and monetize the APIs. So in the longer term, we see the Vonage and CPaaS platform as a critical way for the service providers to monetize the network investments that they are making today.

**You are now the owner of a global CPaaS platform. Are you competing with your own customers, like Verizon, who are offering the services as BlueJeans? How will you balance out external relationships?**
The interesting part is that the Vonage solution is really geared towards SMEs, and actually, that's a bit of a different market. We work together with other collaborative software providers to incorporate the Vonage solution there, and that is actually addressing a different market need than the big companies do. Why are we excited about that? To be honest, 5G will start to digitalize SMEs first. The benefit of 5G is that you get capacity wherever you are. So you don't even need the local area network. The Vonage UCaas/CaaS is

“We envision the future networks with a horizontal capability that can touch many different use cases, from mission critical and regular consumer use cases to enterprise and emergency use cases”

tailor-made for SMEs, and it's actually easier for them to deploy with better functionality and a more suitable solution for SMEs.

We see great interest from the service providers to go there. But the strategic reason for buying Vonage is for the CPaaS platform because that will allow us to monetize the APIs from the network. It's a very different way of thinking. The telco industry is used to thinking about subscriptions, but the reality is we need to be able to monetize the features of 5G. Otherwise, why would anyone build out 5G? I do believe that it's critical that we're able to sell those specific features in a better way. Vonage gives us the CPaaS platform, which is critical, and also gives us a million developers, and that's also going to be critical.

**How do you see the Middle East market influencing Ericsson's progress in developing and deploying state-of-the-art 5G products and solutions?**

The Middle East region was a front-runner in launching 5G globally with reasonable coverage and good network performance. A year after 5G was launched globally, speed tests were conducted in Korea and the Middle East. So, the Middle East is actually a front-runner in the 5G market, and that's why it's important for us to be here. The Kingdom's Vision 2030 provides a strong commitment to infrastructure, and the digital infrastructure is critical for the digital transformation. We want to be stronger in this market which has influenced the global roadmap as a front-runner market.

**In line with your fireside chat, can you elaborate on how technology powers a bright future and how Ericsson significantly contributes to this?**

I am a big believer that technology is a force for good. Communication improves lives. Now, you can communicate with your children, parents, friends and colleagues, and we can do e-commerce. We could migrate during COVID from being in the office to working from home. It actually changes and improves an individual's life. The next part is that technology is going to change businesses. The way we operate companies in the future is going to be different. We will connect everything in the supply chain. The supply chain will be much more agile and flexible, and allow us to be more quality asset efficient and energy efficient in the whole supply chain by reducing carbon generation. I think telecommunications is critical in order to create a sustainable future. If you look at the ICT industry, it contributes around 1.5% of greenhouse gases, but we can lower greenhouse gases by 15%. So, it's a 10x kind of catalyst, which is really important and really big.

**How long do you think we are from becoming a digital business society?**

I think it's still many years to go, and it will take time. We will need to change processes. However, it's interesting to think about the consumer. We started to digitalize the consumer market basically 10 to 15 years ago, and it is almost digitalized today. So, 15 years ago, we had photo albums, we had the digital cameras, we had DVDs on the wall. We had CD players at home, and we stored documents in binders on the shelf. Today, we use social media to interact with friends. We don't send postcards anymore. We have no photo albums. The DVD and CD are streamed. So everything is digitalized now. 4G allowed us to digitalize consumers. Now we are digitalizing enterprise. It's probably going to take a similar timeframe, but we need to start.

**In a highly competitive sector, how will Ericsson maintain its notable reputation while ensuring security and profitability for users and partners alike?**

This is a major question. We often say that to be a tech or industry leader, you need to be a market leader. You need to be a leader in technology, and you need to be a leader in how you conduct your business. We are investing in all those areas to strengthen our position in the market, but we also continue to invest in technology leadership. We need to do that to drive cost and to drive performance for our customers. And lastly, we invest in how we run the company. So we're really focused on making sure ethics and compliance are fully integrated into everything we do in the company. When we succeed on these three aspects, we are a true industry leader.

**What do you think is the reason behind the unprecedented growth of the OpenAI chatbot service, ChatGPT?**

I think it is an interesting development. So what is the killer app? Nobody has any idea. In five years, I will tell you what the killer app was. It may be the generative AI because that's going to drive such a massive amount of data into every device as well as massive traffic to the network. TR

We are investing in all those areas to strengthen our position in the market, but we also continue to invest in technology leadership

# Algeria's Evolving Telecom Landscape

**Algeria holds an important position in the Middle East due to the country's strategic location, covering areas of the Mediterranean and Africa (as the continent's fourth largest nation), as well as its proximity to the Arab world. Moreover, it holds rich and abundant sources of natural gas and petroleum.**

In recent years, Algeria has been hit by the tradeoff that comes from the strong trend towards weaning off fossil fuels and transitioning to renewable energy sources. To balance this paradigm shift, the government has focused on the development of its telecommunications sector, which is seen as a main pillar of the infrastructure needed for the country's digital transformation strategy.

### The Nation's ICT Strategy

Algeria Telecommunications Corporation, the main state-owned telephone company in Algeria, aims at providing a high-capacity, innovative network to accommodate surging data traffic and a future of diversified 5G use cases. It has formed a mid-term strategic plan to implement a transport network with homogenized, optimized topology and automation capabilities that guarantee bandwidth and future-proof its infrastructure in an ever-growing market. As of January 2023, there were 32.09 million internet users in Algeria. Algeria's internet penetration rate stood at 70.9 percent of the total population at the start of 2023. Numbers show that internet users in Algeria increased by some 553,000 (+1.8 percent) between 2022 and 2023.

### Primary Operators:

Three main telecom operators (listed below) compete against each other in Algeria's telecom sector, with Nokia, Ericsson and Huawei serving as the country's three major vendors.

**Ooredoo Algeria:** Ooredoo Algeria started operations in Algeria in 2003, under the Nedjma banner, as the first multimedia mobile telephony operator. Nedjma officially became Ooredoo on November 21, 2013, as an Algerian subsidiary of the Ooredoo Group.

Ooredoo Algeria offers a range of innovative offers to individual customers and companies in compliance with

international standards. The company saw a 2% growth in its customer base to reach 13.0 million customers in 2022, compared to 12.8 million in 2021.

Most recently, as a part of efforts to enhance digital services, Ooredoo Algeria collaborated with the Algerian National Bank and signed an agreement to work together to promote digital services. The partnership will enable account holders to pay for Ooredoo services via ATM cash machines and the Wimpay e-banking service, which supports QR code payments and is available via a dedicated app at no extra charge. Ooredoo Algeria has additionally rolled out new 4G sites, offering 16% additional capacity on the 4G network. Ooredoo Algeria continues to maintain consistently high rankings in the relevant data network performance benchmarks.

**Mobilis:** A subsidiary of Groupe Télécom Algérie, Mobilis is the largest of the three major mobile operators in Algeria. It became independent in August 2003. Mobilis led the mobile market in terms of total mobile subscriptions in 2021, supported by its strong focus on the prepaid segment. The telco is focusing on enhancing the service quality of its 4G mobile network. The state-owned operator has begun testing 5G and developing a 5G-ready infrastructure in partnership with Huawei.

**Djezzy:** The second-largest mobile operator, Djezzy, is focusing on network modernization and has completed trials using microwave carrier aggregation technology in partnership with Nokia and Ericsson. This move is expected to boost network capacity and address the growing mobile traffic demand in the country. Djezzy is owned by Algeria Telecom.

According to the latest mobile telephony report published by the ARCPE, Djezzy controlled 31.04% of the market share in December 2021, compared to 42.18% for Mobilis and 26.78% for Ooredoo.

## Telecom Market Value

The total telecom services revenue in Algeria was valued at $3 billion in 2021 and is expected to grow at a CAGR of more than 1% during the forecast period, 2021–2026, according to Globaldata.

The growth is driven by growing mobile internet subscriptions, supported by ongoing investments in 4G/LTE network expansions by major MNOs. To plan their future investments, Algerian operators requested clarification of the government's 5G strategy in 2021. In recent developments, the minister of post and telecommunications, Karim Bibi Triki, announced that Algeria aims to launch 5G mobile networks "soon" and is currently assessing how to free up and optimize the needed radio frequency spectrum. The 5G initiative had not been prioritized by the government due to the urgent need to improve service coverage in some parts of Algeria. The ministry had suggested the commercial 5G launch by the end of 2022.

## Regulatory Authority

In November 2021, the Post and Electronic Communication Regulatory Authority (ARCPE) awarded an additional 900 MHz of mobile spectrum in the E-GSM band (880–890 MHz/925–935 MHz) to Algeria's three telecom operators. The goal of the ARPCE is to improve data speeds and the quality of mobile broadband internet access in the country.

## Connectivity Growth:

The growth in fixed broadband revenue has been attributed to investments in submarine fiber optic cable deployment to enhance nationwide broadband connectivity. Algeria boasts 200,000 km of fiber optic cable lines — SEA-ME-WE 4, Medex, Orval and a state-sponsored fourth — that will facilitate the introduction of 5G. The national transport network consists of seven regional NG-DWDM (New Generation Dense Wavelength-Division Multiplexing) loops, which are currently capable of transmitting around 3 terabits per second (Tbps).

Algeria Telecom's next-generation IP metro network aims to provide quality service and an exceptional user experience, at scale. "The successful completion of the IP metro network modernization project by our vendor partners, will allow us to make the migration to IPV6 and the initiation of digital transformation, as well as the implementation of high-speed internet, as we best satisfy the needs of Algeria Telecom customers," says Adel Bentoumi, CEO of Algeria Telecom.

"The rapid growth of network traffic is a clear indication of the need for modernization and expansion of network capacity," notes Allahoum Hocine, head of IP Core, Algeria Telecom.

## Africa-1 Submarine

Algeria's connectivity to the rest of the world is also facilitated by the Africa-1 submarine cable system that spans 10,000 km, initially landing in Kenya, Djibouti, Pakistan, the UAE, the Kingdom of Saudi Arabia, Egypt and France. The system also lands in Sudan; crosses Egypt through diverse new terrestrial routes on the way to France; and further connects other countries in the Mediterranean, such as Algeria and Italy.

## Investments and Initiatives in Telecom Technology

The Algerian government invested over $3.7 billion in its ICT infrastructure from 2010 to 2019, and from 2015 to 2019, its ICT equipment imports totaled $22 billion. Despite significant progress in the development of its ICT infrastructure over the last decade, Algeria lags behind other African countries.
Slower fixed internet speeds have lowered the country's international ranking. The government directed Algérie Télécom in 2021 to increase the minimum rate available from 4 MB/s to 10 MB/s.

The fierce price battle between the three MNOs — Mobilis, Djezzy and Ooredoo Algeria — along with taxes on voice and data services has harmed operator revenue. Mobile broadband is largely based on 3G and LTE, and the data rates are also low in global terms. Although LTE is available in all provinces, much investment is required from the MNOs to improve the quality of service.

Experts suggest modernization of the ICT sector and significant IT investments for the country's digital transformation. Algeria's ICT industry has a well-organized IT sector with specialized distributors, integrators and nationwide distribution channels that together provide products, solutions and services. TR

# Starlink Deploys Satellite Internet in Rwanda


A satellite service provided by SpaceX will be piloted in 500 schools in Rwanda after its launch on the 22nd of February. The project is part of a larger initiative to provide high-speed internet access to underserved areas in the country.

It is expected that students and teachers in Rwanda will be able to access educational resources and digital tools thanks to Elon Musk's high-speed satellite internet venture. This will play a big role in improving education, especially for a school like this that is not connected to reliable internet.

Starlink is a satellite internet service that uses a low-Earth orbit satellite network to provide high-speed internet access to areas with limited or no connectivity. The service has the potential to bring reliable and high-speed internet to rural and remote areas, making it a valuable tool for improving education, healthcare, and economic opportunities in underserved communities.

Currently, there are 6,756 schools, consisting of primary, secondary and TVET schools, in the country. The Rwandan government is hoping to reduce these numbers after the launch of Starlink Internet.

# Telkom SA Lays Off 15% of Workforce


Telkom South Africa is planning to lay off up to 15% of its workforce as part of a new restructuring program to cut costs. The partially state-owned operator has started a formal consultation process for retrenchments that will impact all business units and subsidiaries and is intended to ensure the sustainability of the group in the long term.

Telkom's job cuts are part of a global trend of technological redundancies. After thousands of job cuts at companies such as Meta and Twitter last year, Google, Microsoft and Amazon plan to cut 40,000 employees together this year.

It has been systematic for Telkom to reduce its staff over the past few years as the company evolves away from legacy broadband technologies like copper and moves customers over to either fiber or wireless options, which tend to have lower profit margins. Telkom's staff count in 2013 was a massive 21,209 employees, but by 2019, it had been reduced to 15,197. At the end of September 2022, Telkom had a staff of 11,788; therefore, a planned 15% reduction in that number would mean around 1,768 jobs are on the line in 2023.

As part of a trading update for the quarter ended December 31, 2022, Telkom reported that group revenue was up just 2.3% year-over-year (YoY) to R11 billion (US$613 million), while group earnings before interest, tax, depreciation and amortization (EBITDA) dropped 13.5% to R2.5 billion (US$139 million).

The EBITDA figure was impacted by increased power cuts in South Africa (known locally as loadshedding), which resulted in a YoY increase of more than R150 million (US$8.4 million) in additional costs in the quarter alone.

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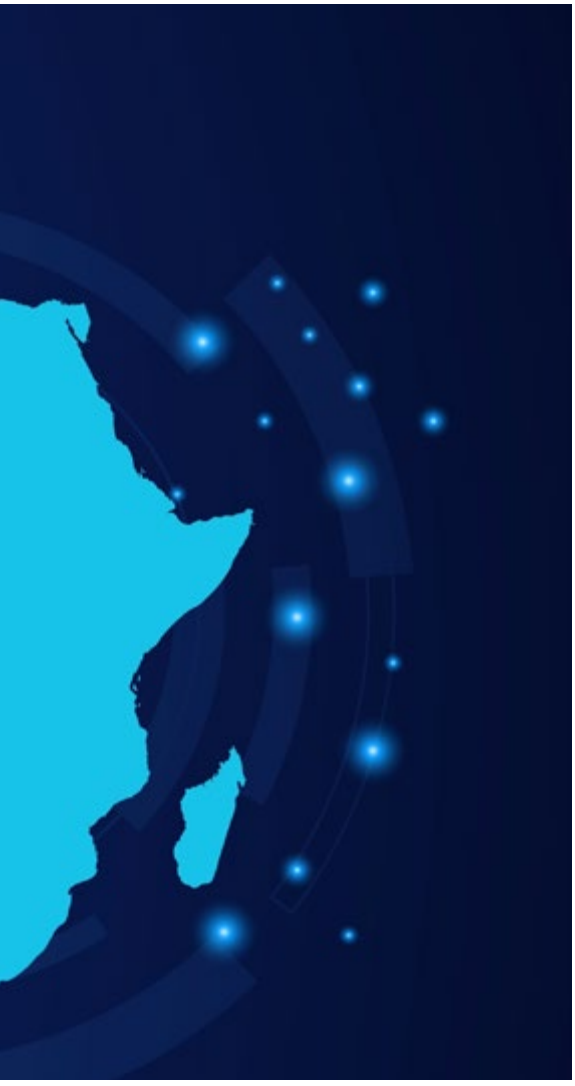
# Africa's Digital Transformation in 2023 Shaped by Major Trends

Given how quickly other countries are adopting cutting-edge technology, Africa is undergoing a digital revolution. It is easier for the younger generation to learn technology now that more people have better internet access.



But the continent will continue to lag if it ignores problems like outdated legislation and poor technological infrastructure. Decision-makers and stakeholders must actively seek to close the technology gap in order to fully achieve socio-economic growth.

The top five trends that will dominate the African tech scene in 2023 are the following:

**Artificial Intelligence**

In 2023, an increase in the use of Artificial Intelligence (AI) is anticipated. AI will be used more frequently as Nigeria looks to use technology to solve issues and enhance services. It will be used more frequently in a variety of industries, including healthcare, education and agriculture. Experts predict that by 2030, AI will have increased Africa's economy by $1.15 trillion. A sound AI strategy is already in place in several African nations. In addition, programs like Data Science Nigeria now exist that promote education in AI and data science.

AI is applied in the retail industry to give customers a seamless shopping experience. Because it is an effective tool for managing business operations, it is widely used in other economic sectors. Artificial Intelligence may hold the key to treating serious medical conditions and assisting businesses on the continent in fostering a synergy between their business and IT teams.

**Digital Twin Technology**

A "digital twin" is a digital representation of the behavior and appearance of a real-world physical object, process, service or environment.

It is essentially a computer program that uses data from the real world to generate simulations of how a process or product will function. To improve their output, these programs can incorporate software analytics, Artificial Intelligence and the Internet of Things (Industry 4.0).

Everything is mirrored in the digital twin, from a single piece of machinery to entire cities and people. A steady flow of data must be established on both sides (real and digital) for such mirroring to occur.

Juniper Research projects $13 billion in digital twin revenue by 2023. African nations are prepared to take a future-first approach that will promote a level playing field thanks to digital twin technology. African businesses can lower their risks by increasing operational efficiency and using data-driven decision-making. Moreover, such technology development might just help with job creation and major city traffic solutions.

**Metaverse**

AR and VR technologies, which exist at the intersection of virtual and actual reality, have had a significant impact on the development of the Metaverse.

All sizes of businesses are using metaverse technology to improve their social media presence and foster customer relationships. In addition, metaverse is establishing a hybrid workplace that promotes better teamwork and makes way for an immersive storytelling experience.

The metaverse will serve as a platform for efficient remote work in addition to giving business owners the chance to become more marketing-savvy. People can meet with clients from all over the world, collaborate with team members who aren't in the same location, and train and onboard new employees thanks to the metaverse office. This would significantly lower operating and business costs, which would be especially advantageous for startups with smaller budgets.

**Blockchain Technology**

African blockchain startups raised $91 million in the first quarter of 2022, according to the African Blockchain Report 2021. Blockchain venture capital investment increased to $304 million during the first half of 2022, with Nigeria, Kenya and South Africa leading the way.

Because blockchain's decentralized model ensures data security, many companies have incorporated it into their operations. The founders of African blockchain startups are driven by this as a major motivator to produce cutting-edge concepts and solutions. Although blockchain adoption in Africa is still relatively slow, these startups rarely have trouble securing funding from reputable investors.

**Internet of Things (IoT)**

The term "Internet of Things" (IoT) describes the billions of physical objects that are currently linked to the internet and are all collecting and exchanging data. You can make anything a part of the Internet of Things, from a pill to an airplane, thanks to the development of incredibly affordable computer chips and the widespread use of wireless networks.

Businesses and individuals are expected to keep investigating this digital environment and thinking about how to take advantage of its opportunities to offer consumers immersive and effective experiences. This will give African brands new opportunities to convey original, real-life stories and much more. TR

# Orange Presents Its New Strategic Plan: 'Lead the Future'


Orange, a major digital player in Europe, Africa, and the Middle East, has presented its strategic plan, Lead the future.

This plan was designed to project Orange into the future and capitalize on its unique strengths in the telecoms sector. The quality of its core assets combined with a solid financial position allow it to address the many structural and economic challenges facing the industry. The explosion of digital uses is accompanied by ever-increasing customer demands, notably in terms of resilience, making the telecoms sector essential in the years to come.

Lead the future aims to respond to these challenges and focus Orange on its core business. This ambitious and pragmatic plan will build on the Group's strengths to create value. Orange, a pioneer in fiber, will continue to deploy, innovate and invest in the best technologies to respond to its customers' needs for reliability, security and resilience. In addition, Orange will consolidate its strong position in cybersecurity and undertake a complete repositioning of its B2B activities to better meet the expectations of its customers. Finally, this plan strengthens the position of the Group in Africa and the Middle East, a region of high growth.

At the launch of the Lead the future plan, Christel Heydemann, Orange's CEO, said, "The quality of our infrastructure, where we are a pioneer in fiber, our customers' satisfaction (NPS), and the expertise of our teams, as well as our solid finances, give us an unrivalled competitive advantage. In addition, thanks to our mastery of connectivity, security and resilience, Orange is uniquely placed in the sector. This plan aims to enhance and develop these strengths to position Orange as the group that builds the future of telecoms and digital solutions. Our aim is to achieve sustainable growth, particularly in cybersecurity, in Africa and in the Middle East. We have already taken the first steps with the sale of OCS, the consolidation projects in Spain and Belgium and targeted acquisitions in cybersecurity. To succeed, three principles will guide the company over the coming years: performance, excellence and trust.

# MTN Globalconnect Empowers the Role of Women


MTN GlobalConnect appointed Juliet Nsubuga as managing director of MTN GlobalConnect Uganda, effective April 1, 2023, and Josephine Sarouk will assume the role of managing director, MTN GlobalConnect Nigeria, effective March 1, 2023.

These appointments make further inroads into MTN GlobalConnect's transformation journey, which recently saw it welcome Sylvia Anampiu as managing director for its Kenya operations and Lillian Mutwalo as managing director of its Zambia operations.

As MTN GlobalConnect looks to increase fixed connectivity and international mobile services through wholesale opportunities, Juliet and Josephine's addition to the company's strong female leadership bench will ensure that, through its #GrowAfrica strategy, MTN GlobalConnect is well positioned to meet the anticipated exponential growth in data traffic in Africa, thereby accelerating the continent's digital economy.

# Telecel Group Acquires Majority Shares in Vodafone Ghana


Vodafone Group Plc has completed the transfer of its 70% majority shares in Vodafone Ghana (Ghana Telecommunications Company Limited – GTCL) to the Telecel Group after successfully obtaining all the necessary regulatory approvals, including the agreement of the Government of Ghana as a minority shareholder. This is the most recent major change for the Ghanaian telecommunications company since 2008, when Vodafone Group Plc purchased a controlling interest in GTCL and established Vodafone Ghana.

Telecel is an Africa-focused telecommunications company with a brand founded in 1986, operating primarily in Africa and converging telecommunications with fintech, e-commerce, and tech startups. The completion of the agreement to acquire Vodafone Ghana by Telecel Group presents an opportunity for further innovation and the continued delivery of unparalleled services to Ghanaians.

Operations of Vodafone Ghana and its three subsidiaries, National Communication Backbone

Company Limited, Vodafone Ghana Mobile Financial Services Limited (Vodafone Cash) and the

Vodafone Ghana Foundation, will continue uninterrupted while embracing exciting

new possibilities. Vodafone Ghana assures its customers and stakeholders of their unwavering commitment to continuity across all services and products.

# Safaricom to Launch M-Pesa Service in the Ethiopian Market


Telecom operator Safaricom is finalizing technical and commercial preparations for its M-Pesa digital payment service in the Ethiopian market, which is expected to be launched in the next financial year, which begins in April.

The announcement comes four months after Safaricom Ethiopia was approved to operate its mobile payment platform in Ethiopia. The approval from Addis Ababa allowed the operator to begin the process of obtaining a mobile payment service provider license from the National Bank of Ethiopia (NBE), which recently set a licensing fee of $150 million for mobile money services.

The launch of M-Pesa is expected to accelerate Safaricom's growth and introduce competition to Ethiopia's mobile money sector, which is currently dominated by incumbent operator Ethio Telecom's Telebirr service.

# Access for All: How Digital Identity Management Can Empower Us

**From the moment we wake up in the morning until we turn in for the night, we are constantly sharing personal data, be it through our mobile phones, laptops or digital personal assistants like Siri and Alexa. The more data we share, the greater the chances of it being mishandled and misused. Digital technology greatly enhances our quality of life, but it also exposes us to vulnerabilities in data privacy and security.**

Moreover, with traditional digital walls gone and expectations growing, companies are struggling to find effective digital identity management solutions. It is critical to approach enterprise and consumer identity with equal strength, explore managed services and integrate new technologies. A comprehensive approach to digital identity management can empower everyone by providing them with control over their personal data and online identity. It can give individuals the ability to access online services and transact securely without having to constantly provide personal information.

Throughout history, humans have attempted to validate the legitimacy of those with whom they deal, whether through wax seals, stamps, passports, fingerprints, biometrics, or behavioral analysis. The importance of trust has never been greater, especially in these times of increased concern over data breaches, fraud and privacy. And in our digital society, trust is determined through "digital identity," the corpus of data about an individual, an object, or an organization that helps identify them through unique qualities and use patterns.

Effective digital identity practices are more important to business success than ever. They are vital for presenting a compelling first contact point to customers, protecting sensitive data, enabling secure transactions and transforming business processes. They can enable new ways to engage with consumers via social media, improve collaboration within the enterprise and automate and simplify cybersecurity practices. However, enterprises and consumers are facing increasing challenges in managing their identities. One of the reasons for this is the breakdown of traditional digital walls, which has blurred the distinction between the inside and outside of an organization. With such a shift, emerging technologies, cloud-based services, growing business needs and evolving privacy regulations, a digital identity crisis is arising.

**Exploring the Challenges**

The challenges below must be addressed in order for digital identity management to be successful and to provide the benefits of secure and convenient access to online services for everyone.Several challenges to digital identity implementation include:

- Privacy and security concerns: Ensuring the privacy and security of personal information is a major challenge, as identity theft and fraud are becoming more common. Adequate protection calls for robust security measures, such as encryption and multi-factor authentication, to protect personal information from unauthorized access.
- Interoperability: A digital identity management system must be interoperable with different systems and platforms, as well as compliant with privacy regulations. This can be challenging, as different systems have different protocols and standards.
- User adoption: Encouraging individuals to use a digital identity management system and providing them with the

necessary support and training can also be challenging. This requires addressing users' concerns about privacy and security, as well as making the system as user-friendly and accessible as possible.

- Integration with existing systems: Integrating a digital identity management system with existing systems and processes can be challenging, as it can demand significant technical expertise and resources.

- Cost and resources: Implementing a comprehensive digital identity management system can be expensive and resource-intensive, which can be a barrier for smaller organizations and governments.

- Balancing user control and convenience: Balancing the need for user control over personal information with the convenience of accessing online services is a key challenge. The system must strike a balance between privacy, security and ease of use.

**A Constant Evolution Towards AI and Managed Services**

Challenges aside, approaches to digital identity management are starting to change quickly. There is a steady shift toward managed services and artificial intelligence (AI) in digital identity management. Managed services provide organizations with the expertise and resources needed to implement and manage a digital identity system, while AI can be used to automate many of the manual tasks involved in identity management, such as verification and authentication.

As part of the shift, some companies have moved their identity stacks to the cloud, while others are consuming identity-as-a-service. One of the reasons for this is that cloud providers and third-party cloud operators are likely to have much more sophisticated capabilities than what a company may have in-house, which eliminates the need for updates and upgrades to both software and infrastructure. Also, with many companies facing a shortage of skilled cybersecurity professionals, using managed services helps eliminate the need to attract, train and/or retain this hard-to-find talent. Many organizations are also experimenting with and integrating a number of new technologies to improve their digital identity capabilities. Moving beyond simple logins and passwords, they're increasingly using advanced authentication methods such as physical biometrics and behavioral monitoring as standard practices in digital identity management.

**The Rise of Digital Identity Solutions in Africa**

Digital identity management has the potential to empower Africa in several ways. It's becoming increasingly important in Africa as the continent continues to experience

> “Managed services provide organizations with the expertise and resources needed to implement and manage a digital identity system, while AI can be used to automate many of the manual tasks involved in identity management”

rapid technological and economic growth. First is financial inclusion: by providing secure and reliable digital identities, individuals who have been excluded from traditional banking services can access financial services, such as mobile banking and digital payments, increasing their financial inclusion and empowering them to participate in the formal economy.

Secondly, improved access to services: a well-managed digital identity can simplify access to various online services, such as healthcare, education and government services, improving the quality of life for individuals and communities. Thirdly, increased trust and transparency: by ensuring that individuals are who they claim to be and that their personal data is secure, digital identity management can increase trust in online transactions and interactions, creating more transparency in the economy and reducing the risk of fraud and corruption. Furthermore, entrepreneurship: digital identity management can provide a foundation for entrepreneurship and innovation by enabling individuals to establish their online presence, build trust and access new opportunities. Lastly, data privacy: this can be done by allowing individuals to control their personal data and choose how it is used, shared and stored; digital identity management can improve data privacy and security, helping to protect against data breaches and identity theft.

Indeed, digital identity management is becoming increasingly important as more and more personal and sensitive information is being stored and transmitted online. Overall, digital identity management has the potential to play a transformative role in Africa by empowering individuals, improving access to services and promoting economic growth. However, it will require a concerted effort from governments, businesses and other stakeholders to ensure that it is implemented in a way that protects the privacy and security of individuals and their personal information.

In addition, operators in Africa have been actively involved in the development and provision of digital identity solutions on the continent. In Africa, digital identity solutions are seen as a way to address the lack of access to traditional forms of identity and increase financial inclusion. By providing digital identities, operators can enable individuals to access financial and other services that they would otherwise not have access to. Some examples of digital identity solutions in Africa include:

- National ID systems: Many African countries are in the process of developing national digital identity systems that will be used to issue electronic ID cards to citizens. These systems aim to increase access to and improve the delivery of public services.
- Mobile money: Mobile money services, such as M-Pesa in Kenya, have provided millions of people in Africa with access to financial services through their mobile phones. These services have also enabled users to access other services that require identity verification, such as bill payments and remittances.
- Private sector initiatives: Private sector companies in Africa are also playing a role in the development of digital identity solutions. For example, identity management company JUMO has developed a digital identity platform that allows individuals to securely store and manage their personal information.

In conclusion, operators and digital identity solutions in Africa are working towards increasing financial inclusion, improving access to services and enabling secure online transactions. TR

Digital identity management is becoming increasingly important as more and more personal and sensitive information is being stored and transmitted online


Did you know that the global mobile telecommunications industry has over 8 billion mobile subscribers, which is more than the world's population?

Saviez-vous
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**Fondateur, éditeur en chef, Telecom Review International**
Toni Eid
toni.eid@tracemedia.info

**Directeur du contenu**
Chris Bahara
chris.bahara@tracemedia.info

**Journaliste**
Elza Moukawam
elza@tracemedia.info

**Représentant en Côte d'Ivoire**
Lacinan Ouattara
lacinan@tracemedia.info

**Équipe éditoriale**
Toni Eid (UAE),
Chris Bahara (UAE)
Elza Moukawam (Lebanon),
Marielena Geagea (Lebanon),
Pia Maria El Kady (Lebanon),
Elvi Correos (UAE),
Jonathan Pradhan (UAE),
Corrine Teng (Singapore),
Camille Bersola (Philippines),
Lacinan Ouattara (Ivory Coast),
Jeff Seal (United States)

**Chef des opérations**
Issam Eid
issam@tracemedia.info

**Demandes de publicité**
Mohammed Ershad
ershad@tracemedia.info

**Directeur des opérations – groupe**
Anna Chumak
anna@tracemedia.info

**Graphiste**
Vanessa Haber

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**Trace Media Ltd.**
Zouk Mikael, LEBANON
Kaslik Sea Side Road,
Badawi Group Building, 4th Floor,
P.O. Box 90-2113, Jdeidet el Metn
Tel. +961 9 211741

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**Issam Eid,**
Chef des opérations
Trace Media Intl.
Telecom Review Group

# Le Chatbot IA : mettre l'humanité en danger...

Avec 175 milliards de paramètres, ChatGPT (version GPT-3) est l'un des plus grands et des plus puissants modèles d'IA de transformation du langage à ce jour. Le Chatbot IA a été développé dans la société OpenAI de San Francisco ; elle a été cofondée en 2015 par Elon Musk et Sam Altman et est financée par des investisseurs de renom.

Cependant, c'est une application gratuite et tout le monde peut y accéder et l'utiliser, mais essayez de visualiser ce que ChatGPT ou ce Chatbot IA peut faire ; Il peut menacer l'espèce humaine de plusieurs façons ! Comment ? Par exemple, les étudiants des écoles et des universités peuvent en fait utiliser ce Chatbot IA pour faire leurs devoirs à leur place. Il ne s'agit pas seulement de tricher, mais aussi de former une génération d'êtres humains imprudents. Sans oublier que le ChatGPT remplacera plus de 50 emplois ou plutôt que ces 50 emplois n'existeront plus dans quelques années, tels que créateur de contenu, analyste de données, représentant du service clientèle, réceptionniste médical, traducteur, développeur web, etc... Imaginez que vous n'ayez pas besoin de désigner un avocat lorsqu'un robot IA peut vous défendre au tribunal ?

Croyez-le ou non, même si l'application n'est pas toujours mise à jour, si vous demandez au Chatbot IA de vous parler d'un mobile ou d'un combiné récemment lancé, il vous donnera la réponse la plus récente, datant peut-être de quelques mois. Cependant, ce qui est difficile à distinguer, c'est la différence entre le Chatbot IA et l'écriture humaine réelle !


**Mohamed Kante,**
Responsable d'équipe client, Orange Moyen-Orient et Afrique

# Nokia LiteSite Rural permet de fournir la connectivité dans les zones rurales

## Dans une entrevue exclusive accordée à Telecom Review Afrique, Mohamed Kante, Responsable d'équipe client, Orange Moyen-Orient et Afrique, discute les défis et opportunités des réseaux ruraux en Afrique et la valeur ajoutée dans les régions rurales, au niveau du réseau d'accès radio RAN. En outre , il a souligné les options possibles des business model.

**Quels défis et opportunités entrevoyez-vous pour les réseaux ruraux en Afrique à mesure que l'économie évolue, les modèles sociaux changent et la diversité augmente ?**

D'après le rapport 2022 de l'Union Internationale des Télécommunications *(UIT)* sur le développement numérique, près de deux personnes sur trois (66%) dans le monde utilisent internet. Au niveau du continent africain, ce ratio chute à 40% soit deux africains sur cinq utilisant internet. Quand on y regarde de plus près, on se rend compte que dans les zones urbaines en Afrique, ce pourcentage est proche de la moyenne mondiale : 63%. Alors que dans les zones rurales seulement 23% des africains utilisent internet. Cela est dû à des défis majeurs à surmonter, comme le manque d'infrastructure (routes, électricité courante), le manque de réseau de transport d'infrastructures dorsales, la difficulté des terrains, le faible niveau de revenu moyen par utilisateur ainsi que l'abordabilité.

Par ailleurs, d'après les données des nations unies, un peu plus de la moitié (55%) des africains vivent en zones rurales, représentant ainsi plus de 700 millions d'africains habitant en zones rurales en 2022.

Il est à noter aussi que pour atteindre les objectifs de développement durable, l'Afrique doit s'attaquer au problème de la fracture numérique. Cela doit conduire les principaux acteurs publics et privés à mettre en place des solutions innovantes afin de saisir les opportunités liées à la digitalisation dans le milieu rural, qui va toucher plus d'un africain sur deux. Cela va contribuer à l'évolution de l'économie numérique, avec une augmentation significative de la productivité dans certains secteurs comme l'agriculture et l'élevage, ainsi qu'une amélioration notable de l'éducation et de la santé.

**Etant l'un des principaux acteurs du marché, quelle valeur ajoutée Nokia pourrait-il apporter dans les régions rurales, notamment au niveau du réseau d'accès radio RAN ?**

En effet *Nokia* est un acteur majeur du développement des technologies de l'information et de la communication. En phase avec le slogan de *Nokia « At Nokia, we create technology that helps the world act together »*, nous avons une responsabilité de développer la technologie qui adresse les principaux défis dans le monde sur le climat, la productivité mais également l'inclusion numérique.

C'est dans le cadre de cette inclusion numérique que *Nokia* a développé une solution innovante appelée *Nokia LiteSite Rural* qui permet de fournir la

connectivité dans les zones rurales, plus particulièrement en Afrique. Cette solution a été inspirée par les besoins spécifiques des zones rurales en Afrique à savoir : une solution abordable, avec des couts d'exploitation minimés, alimentée par des sources d'énergie durable comme le solaire. Cette solution a été également conçue pour répondre aux programmes de connectivité rurale lancés par les principaux partenaires de *Nokia* en Afrique.

La solution *LiteSite Rural* présente plusieurs atouts qui apportent beaucoup de valeurs à la connexion rurale. Je vais vous en citer deux : la flexibilité et la durabilité.

Pour le volet flexibilité, tout d'abord la solution dispose de configurations standard avec la *2G* et la *3G* dans la même fréquence de 900 MHz ; et également la *4G* pour les communautés rurales qui ont besoin de beaucoup de capacité. Par ailleurs, pour connecter le site rural au réseau, la solution dispose de plusieurs possibilités pour s'adapter aux contraintes du terrain. Parmi celles-ci, le backhaul UE relay qui est mis en place quand il y un signal *LTE* pour atteindre le site de la *BTS* rurale à partir d'un site dit donneur. Cette solution présente, plusieurs avantages car elle s'appuie sur le réseau *LTE* existant, et ne nécessite pas de charges d'exploitation de spectre comme c'est le cas des faisceaux hertziens. Un autre atout du *Lite Site Rural* de *Nokia* est de pouvoir se connecter à un site donneur d'autres fournisseurs *LTE*. Des tests effectués par *Nokia* en Afrique centrale ont permis d'atteindre près de 30 km entre le site donneur *LTE* 700 MHz et le site rural, avec un débit de 19 Mb/s et un excellent signal *RSRP* de -78dBm.

Une autre solution de transmission pour connecter le site rural consiste à utiliser le faisceau hertzien sous la bande des 6 GHz, qui est une bande non sujette à licence dans la plupart des pays, contribuant ainsi à optimiser les charges d'exploitations.

Quand plus de capacités sont requises *(exemples des communautés rurales qui ont besoin de la LTE),* des solutions à base de faisceau hertzien classique sont proposées.

Par ailleurs, quand le site est très isolé, avec impossibilité de connexion terrestre, le *backhaul* par satellite peut être mis en place avec un partenaire de *Nokia.*

Pour ce qui du volet durabilité, la solution utilise des modules dont les consommations énergétiques sont optimisées. L'alimentation est assurée par l'énergie solaire.

Enfin des modules reconditionnés peuvent être utilisés dans la solution, permettant ainsi d'apporter un impact positif sur l'économie circulaire.

**Il est clair que la couverture et l'opération des réseaux mobiles dans le rural en Afrique nécessitent un business model différent que celui jusque-là utilise pour couvrir les zones urbaines. Quelles options sont aujourd'hui possibles ? Quid Nokia ?**
Nous voyons émerger deux types de modèles : le modèle dit *CAPEX* et le modèle dit *OPEX.*

Le modèle *CAPEX,* bien qu'inspiré des déploiements en zone urbaine, peut présenter des spécificités du milieu rural. Dans ce modèle, l'opérateur achète l'équipement et les services pour déployer et connecter le site rural. Les charges opérationnelles doivent être limitées grâce au recours des équipements peu gourmands en consommation énergétique, à l'énergie solaire et des transmissions ne réclamant pas de couts récurrents pour le spectre. Des atouts qu'apporte la solution LiteSite Rural de *Nokia.*

Par ailleurs, ce scénario peut entrainer des mécanismes de financement, à l'image de ce qui existe auprès de l'Union Européenne pour encourager la connectivité des zones rurales.

Pour ce qui est du modèle *OPEX,* un troisième acteur entre en scène (*généralement un opérateur d'infrastructure passive*) pour déployer la solution rurale et proposer les services à l'opérateur moyennant des frais réguliers et ou partage de revenus.

*Nokia* est prêt de travailler avec l'opérateur et nos partenaires pour la mise en place du modèle qui répond aux mieux aux exigences de chaque situation spécifique.

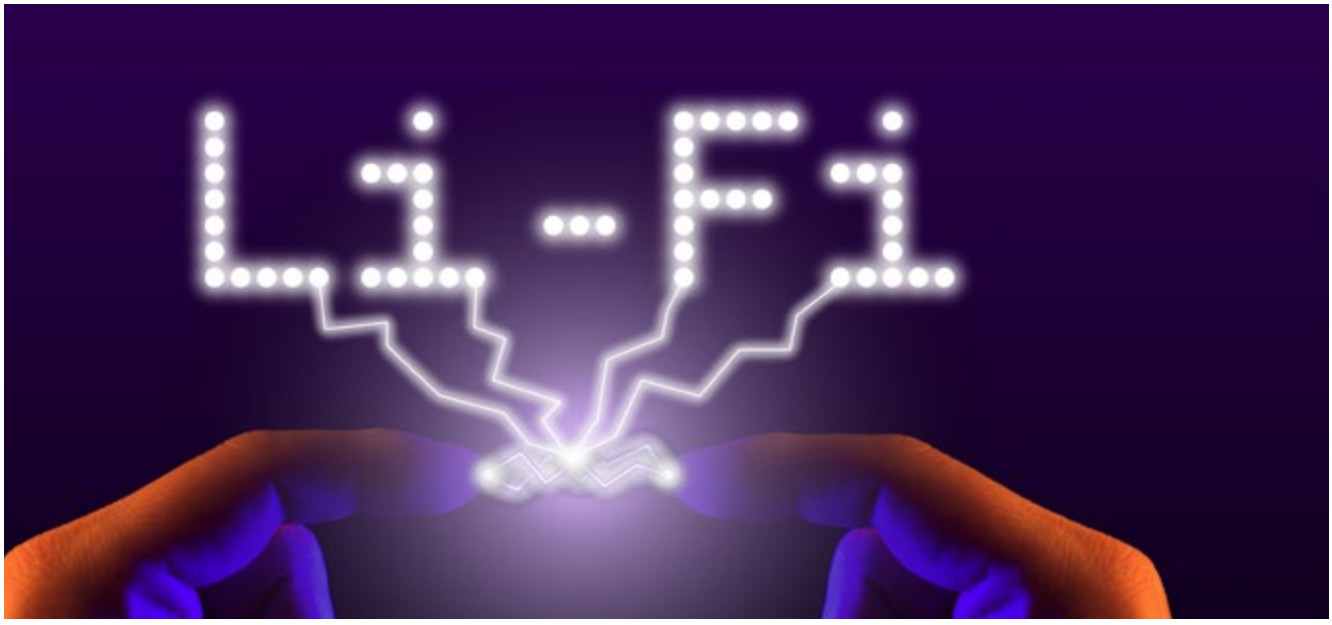
**Nokia a été sélectionné pour déployer un réseau de transport optique de nouvelle génération reliant plusieurs pays en Afrique. Comment ce réseau contribuera-il spécifiquement au développement des régions rurales de ce continent ?**
Afin de fournir la connectivité dans les zones rurales, un maillon essentiel est l'accès radio dans le « *last mile* », comme abordé précédemment.

Cependant, afin de se connecter à l'internet, il y a aussi besoin du « *first mile* » avec la connectivité internationale, et le « *middle mile* » avec entre autres le transport d'infrastructure dorsale pour relier les localités.

A ce titre, *Nokia*, grâce à son entité *ASN,* est impliqué dans les principaux câbles sous-marins qui desservent l'Afrique. A titre d'exemple : *ASN* construit et déploie les 180 Tbps du câble sous-marin *2Africa* qui va fournir une connectivité internet plus rapide et plus fiable à chaque pays desservi. C'est le plus long câble sous-marin, sur plus de 45000 km, reliant 19 papys africains à l'Europe et l'Asie, grâce à une innovation technologique développée par *ASN* pour le transport optique de nouvelle génération appelée *SDM (Spatial Division Multiplexing).* Cette technologie permet de fournir un prix par bit plus faible et plus optimisé.

Par ailleurs, *Nokia* dispose des équipements optiques de nouvelle génération qui permettent de fournir avec une excellente qualité de services et de la résilience, des infrastructures dorsales terrestres pour relier des localités sur des milliers de km et relier plusieurs pays africains entre eux.

Pour conclure, que faut-il mettre en place pour réduire la fracture numérique en Afrique ? Des efforts sont entrepris par les états et les principaux acteurs du secteur des Technologies de l'Information et de la Communication. Cependant, au regard de ce qui reste à faire, ces efforts devraient être multipliés davantage et diversifiés, sachant que la technologie évolue très vite. TR




# L'avenir des communications avec la technologie 'Li-Fi'

**Imaginons que chacune des lampes de la maison est une source d'Internet. Imaginons un scénario où, en se tenant sous une lampe pendant une minute, on téléchargerait environ 5 films en HD. Il semblera un rêve, mais grâce à la technologie Li-Fi, ce rêve va bientôt devenir une réalité. Avec cette nouvelle technologie, nous pouvons réimaginer le rôle que joue la lumière dans l'univers.**

Le *Li-Fi « ou Light Fidelity »* est une technologie de communication sans fil qui utilise le spectre de la lumière visible pour transmettre des données. Contrairement au *Wi-Fi* qui utilise des ondes radio, le *Li-Fi* utilise des ondes lumineuses pour transmettre des informations, ce qui le rend potentiellement plus sûr et plus rapide que le *Wi-Fi*. La technologie fonctionne en modulant l'intensité de la lumière pour crypter les données, qui sont ensuite décodées par un récepteur. Elle est considérée comme une technologie complémentaire au *Wi-Fi,* notamment dans les situations où les ondes radio ne sont pas possibles, comme dans les cabines d'avion, les installations médicales et les communications sous-marines.

De plus, le *Li-Fi* peut aider à sauver le monde de la perte du spectre. L'*Internet* est devenu une nécessité dans la vie moderne, et les technologies cellulaire et *Wi-Fi* utilisent toutes deux des fréquences radio pour transmettre des données à des appareils tels que les téléphones et les ordinateurs portables ; le spectre radioélectrique est toutefois une ressource limitée. Il y aura un moment où la demande de données dépassera l'offre. De nos jours, presque tout se fait en ligne, donc c'est possible.

Les experts en technologie désignent la possibilité de perdre la connexion en raison d'une demande excessive comme une pénurie de spectre. Alors, de nouvelles technologies sans fil sont nécessaires pour éviter ce phénomène, pour cela, le *Li-Fi* est constamment développé pour garder tous connectés. Sans oublier que le *Li-Fi* est un système *VLC*, qui peut être plus rapide et plus sûr que le *Wi-Fi.*

### Avantages et inconvénients

Voici quelques avantages du *Li-Fi* :

- Vitesse : *Le Li-Fi* peut transmettre des données beaucoup plus rapidement que le *Wi-Fi,* atteignant des vitesses allant jusqu'à 224 Gbps.

- Sécurité : Les signaux *Li-Fi* peuvent être contenus dans une pièce,


ce qui rend difficile l'interception des données transmises par des personnes non autorisées.

- Sans interférence : Les signaux de cette nouvelle technologie n'interfèrent pas avec les autres signaux sans fil, ce qui en fait un bon choix pour les environnements comportant de nombreux appareils électroniques.

- Une bande passante plus large : le *Li-Fi* utilise le spectre de la lumière visible, qui a une bande passante beaucoup plus large que le spectre des fréquences radio utilisé par le *Wi-Fi*.

Cependant, il y a aussi quelques inconvénients comme la portée limitée ; Contrairement au *Wi-Fi,* qui peut transmettre des données sur des distances de plusieurs centaines de mètres, le *Li-Fi* est limité par la portée de la source lumineuse et ne peut pas traverser les murs. De plus, la dépendance à la lumière. Le *Li-Fi* nécessite une ligne de vision claire vers la source de lumière, ce qui signifie qu'il ne fonctionnera pas dans l'obscurité ou si un objet bloque la lumière. En outre, le coût élevé. Actuellement, la technologie *Li-Fi* est plus chère que la technologie *Wi-Fi*, ce qui la rend moins accessible au grand public.

Dernièrement, la compatibilité : Le *Li-Fi* est une technologie relativement nouvelle et peut ne pas être compatible avec tous les appareils, ce qui peut limiter son adoption à grande échelle.

**Le Li-Fi fait son chemin vers l'Afrique**

L'adoption de la technologie *Li-Fi* en Afrique n'en est qu'à ses débuts, mais elle peut emporter de nombreux avantages à la région. Voici quelques exemples de l'impact du *Li-Fi* sur l'Afrique :

- Amélioration de la connectivité : De nombreux pays africains étant confrontés à des problèmes d'infrastructure Internet et de bande passante limitées, la technologie *Li-Fi* pourrait offrir une alternative plus fiable et plus rapide pour la connectivité Internet.

- Un meilleur accès à l'information: Les vitesses de transfert de données rapides du *Li-Fi* pourraient permettre à un plus grand nombre de personnes d'accéder à l'internet et aux informations et opportunités qu'il offre, notamment dans les zones rurales où le *Wi-Fi* traditionnel est limité.

- Économies d'énergie : Le *Li-Fi* peut être alimenté par des lampes *LED,* qui sont déjà largement utilisées en Afrique, ce qui signifie qu'il pourrait offrir une solution plus durable et plus rentable que le *Wi-Fi*.

- Une meilleure sécurité : La nature sécurisée et sans interférence du *Li-Fi* pourrait en faire une solution intéressante pour les transactions financières et l'échange d'informations sensibles dans la région.

Dès maintenant, explorer la vie avec le *Li-Fi* est essentiel. De nombreuses entreprises ont déjà lancé leurs appareils *Li-Fi*, permettant aux consommateurs de découvrir les multiples avantages de la technologie *Li-Fi*. Si vous avez des zones nulles à la maison ou au bureau, installez la technologie *Li-Fi*. Il en va de même si vous souhaitez augmenter la vitesse ou la sécurité de la connectivité. Le *Li-Fi* peut révolutionner la façon d'accéder aux données aujourd'hui et à l'avenir. TR

# Le Rwanda connectera les écoles à l'internet d'ici 2024


Le Rwanda prévoit de connecter environ 3 000 écoles à l'Internet. Selon la ministre des TIC, Paula Ingabire, qui a révélé le plan lors d'une séance plénière de la chambre des députés, le projet est financé par la *China Exim Bank*.

Le financement de 30 millions de dollars de la *China Exim Bank* permettra de connecter au moins 1 500 écoles à l'internet d'ici la fin de l'année prochaine. Les autres écoles seront connectées dans le cadre d'un projet d'accélération numérique financé par la Banque mondiale, à hauteur de 200 millions de dollars US.

Cette initiative fait partie du projet « *Smart Education* », qui vise à améliorer l'infrastructure TIC de l'éducation au Rwanda en construisant une plateforme pédagogique et en établissant un système de réseau dédié. Il vise également à fournir une base solide pour l'enseignement numérique, le partage des ressources éducatives, l'innovation des méthodes d'enseignement et l'amélioration du niveau d'éducation des citoyens rwandais.

Le projet intervient à un moment où 44,4% des écoles rwandaises n'ont pas encore accès à l'internet. Selon Ingabire, environ 3 000 des 6 756 écoles du Rwanda ne sont pas encore connectées à l'internet.

# Le Niger partenaire du Nigeria pour garantir le déploiement transparent des services télécoms

Le Nigeria et le Niger ont signé un accord bilatéral pour la coordination de l'utilisation des fréquences le long de leurs frontières respectives, visant à garantir le déploiement transparent des services télécoms aussi bien au niveau des zones frontalières qu'à l'intérieur des deux pays.

L'accord contribuera à une coordination et à un partage efficace des fréquences et des canaux dans la « *zone ou région tampon* » située à la frontière Nigeria-Niger. Il définit également les procédures de résolution des problèmes d'interférence de signaux qui peuvent survenir dans les transmissions de signaux de télécommunications par les fournisseurs de services de télécommunications terrestres.

Cet accord entre le Niger et le Nigeria a été signé en marge de la conférence régionale sur l'économie numérique.Elle a été l'occasion pour les décideurs politiques et les acteurs de l'écosystème de l'économie numérique de la sous-région ouest-africaine de discuter de l'avenir de l'économie numérique et d'intensifier les partenariats publics-privés régionaux.

L'accord prévoit entre autres qu'en cas d'interférence nuisible affectant l'une des parties, la partie affectée doit informer l'autre partie par écrit pour que les mesures nécessaires soient prises.

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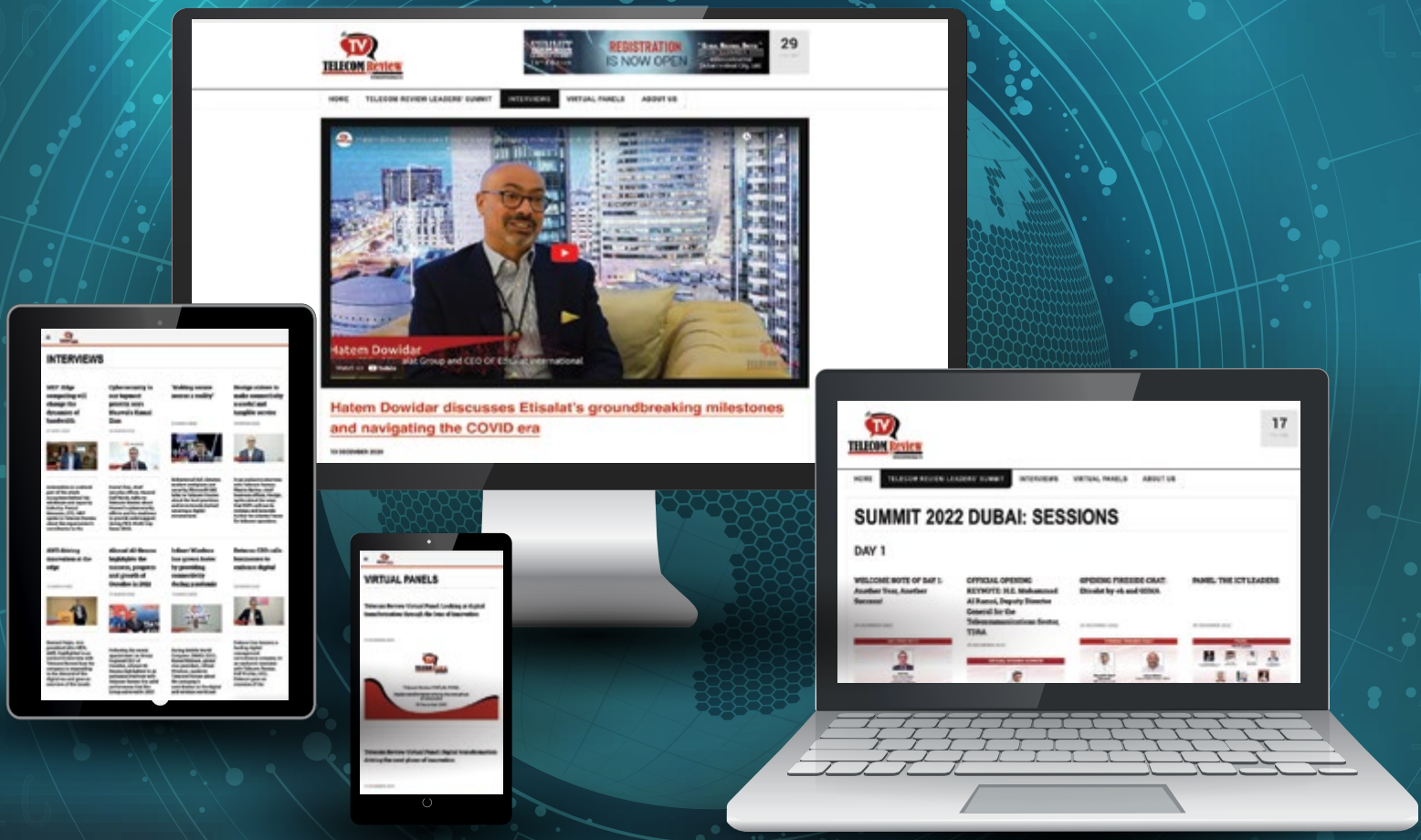


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# L'importance de l'accessibilité du web et ses atouts

Le terme « accessibilité du Web » est souvent mal perçu par le personnel universitaire, les étudiants et les enseignants. Non seulement pour les personnes handicapées, l'accessibilité au Web est un problème qui frappe toutes les couches de la société. Il convient plutôt d'aborder la conformité totale comme parcours graduel, car la compréhension, l'usage et la conception de l'accessibilité du Web peuvent être écrasantes. L'accessibilité du Web exige des mesures proactives, y compris l'auto-éducation sur l'accessibilité, la création de contenu accessible et l'accessibilité facile de ce contenu à tous les utilisateurs en ligne.

### Atouts de l'accessibilité Web

L'accessibilité Web a pour avantage évident de rendre le contenu, les offres et les services de votre site Web plus accessibles aux usagers handicapés. Les avantages de l'accessibilité au Web dépassent toutefois l'avantage immédiat pour les personnes handicapées — et certains d'entre eux pourraient vous surprendre.

### Augmentation du flux sur le site Web

Les entreprises sont appelées à comprendre qu'un site Web accessible permettra à tout le monde d'y avoir accès, y compris les personnes souffrant de déficience physique et de déficience cognitive ainsi que les personnes normales. Leurs taux de flux augmentent, par conséquent, progressivement vu l'autorisation accordée à quiconque d'avoir accès et d'utiliser leur site.

### Amélioration du référencement

En améliorant l'optimisation des moteurs de recherche *(SEO)*, un site Web accessible améliore non seulement la convivialité, mais bel et bien la visibilité.

Le *SEO* s'est fixé un but : celui d'augmenter le classement de votre site Web dans les moteurs de recherche tel que *Google*, qui vise à augmenter le flux de votre contenu. Il y a de meilleures pratiques de référencement sur lesquelles presque la totalité des spécialistes du marketing numérique peuvent s'entendre, même si la mécanique précise dans la manière de classer les pages dans *Google* qu'elles ne seront jamais entièrement révélées.

Les objectifs du référencement et de l'accessibilité Web sont souvent compatibles les uns avec les autres. En plus de l'aide portée aux personnes handicapées, la création de sites Web disposant de navigation plus simple et d'interfaces plus propres augmentera votre taux de rebond, ou la proportion des visiteurs qui quittent un site Web après avoir consulté une seule page.

### Amplification du public du site Web en le rendant plus inclusif

Les sites Web faciles en usage sont privilégiés. La presbytie, une perte fréquente de la capacité de se concentrer et qui nécessite des lunettes de lecture ou des lunettes bifocales, frappe, à un stade où elle est encore à ses débuts, 50 % des personnes de plus de 40 ans. Le nombre d'Américains malentendants ou sourds est supérieure à 48 millions, le nombre d'Américains aveugles ou malvoyants étant, lui, supérieure à 7 millions. L'accessibilité du site Web a l'avantage d'amplifier votre marché cible quitte à englober ces personnes-là

### Promotion des relations publiques favorables

Une tranche significative de clientèle souhaite soutenir les entreprises qui partagent leurs croyances, leurs idéaux et leurs valeurs à une époque où l'activisme numérique fait rage.
Pour les personnes handicapées comme ceux qui militent en leur faveur et les défenseurs de leurs droits, la question d'accessibilité au Web revêt une importance cruciale. Vous pouvez jeter les bases pour que votre entreprise renvoie une image de marque positive en prenant position sur l'accessibilité du Web. Les personnes handicapées qui interagissent favorablement avec votre entreprise sont plus susceptibles de vous recommander auprès de leurs proches, amis, connaissances et contacts sur les réseaux sociaux.

Une rédaction d'un énoncé sur l'accessibilité à votre site Web est une technique valable pour bien démarrer votre présence en ligne.

### Pourquoi l'accessibilité des sites Web est-elle importante ?

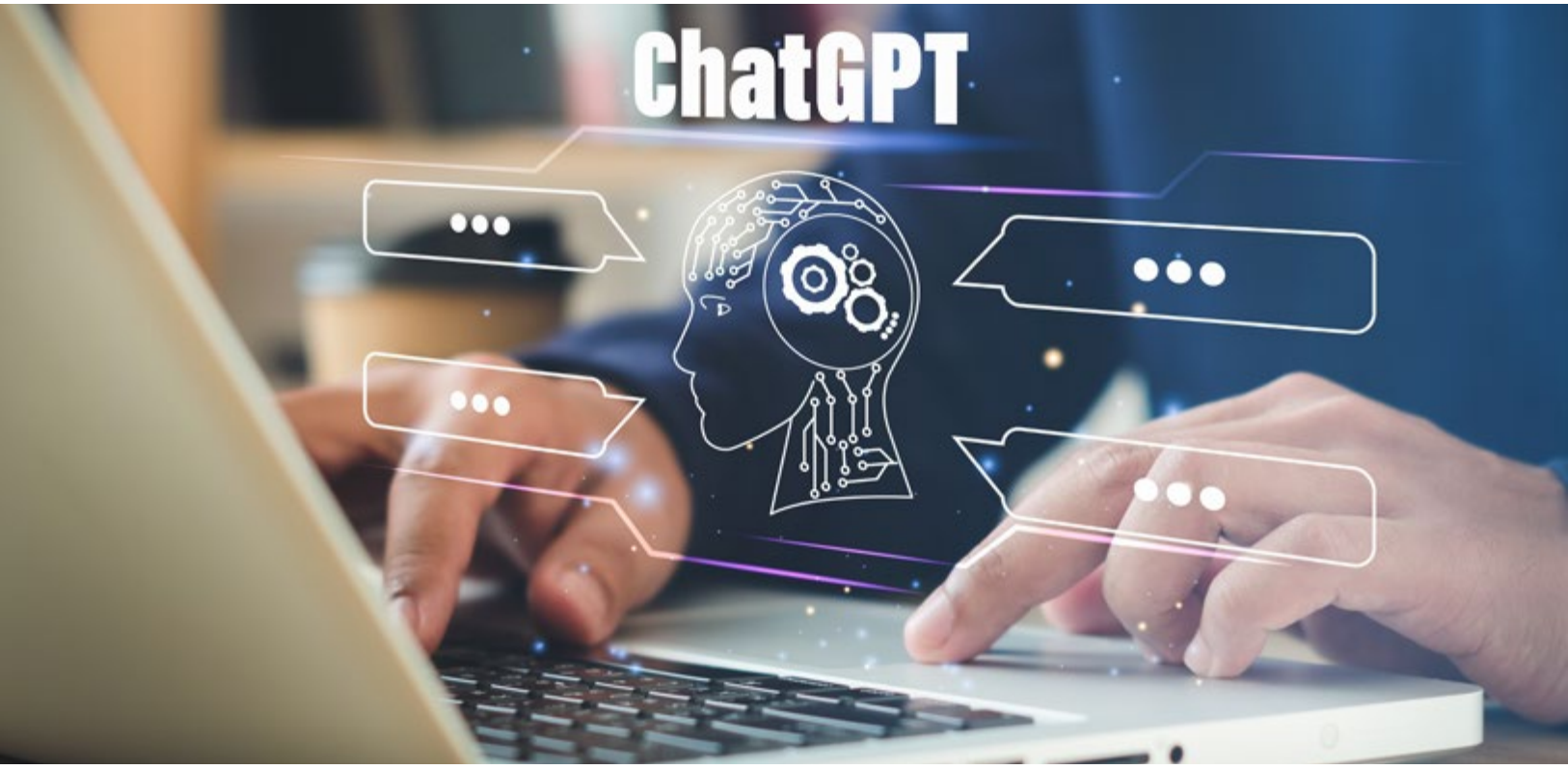
Un handicap atteint 15% de la population mondiale. Cela se concrétise à la fois par des troubles mentaux et neurologiques comme par des déficiences physiques. À mesure que la population avance en âge et que le nombre des problèmes de santé chroniques augmente à son tour, force est de reconnaitre que l'incapacité va augmentant.

L'égalité d'accès à l'information devrait être à la portée des personnes handicapées ou normales. Encore heureux ! il existe des technologies destinées à réduire ou à pallier les obstacles qui dérangent leur accès à l'information numérique. Maintenant que ces avantages sont disponibles, qui que ce soit peut utiliser l'Internet et acquérir une expérience Web positive, sans distinction de l'âge et des capacités physiques ou mentales.

Une bonne stratégie d'accessibilité est porteuse d'avantages commerciaux et fait de l'Internet un endroit plus accueillant favorable à tout un chacun. La quasi-totalité des aspects de la création du site Web sont touchés par l'accessibilité, qui est une composante de conception et de développement. Il intègre des éléments de conception adaptative pour les appareils mobiles, l'autonomie des appareils, l'interaction multimodale, la convivialité, l'optimisation des moteurs de recherche *(SEO)*, et plus encore.

Des sites Web accessibles peuvent améliorer les résultats des moteurs de recherche, réduire les frais d'entretien, toucher un plus grand public encore, et mettre en évidence la responsabilité sociale des entreprises *(RSE)*. Au final, avoir un site Web bien conçu et accessible pourra améliorer, dans une grande mesure, non seulement l'expérience d'usage des personnes handicapées, mais bel et bien de la totalité des visiteurs de votre site. TR

> Les entreprises sont appelées à comprendre qu'un site Web accessible permettra à tout le monde d'y avoir accès, y compris les personnes souffrant de déficience physique et de déficience cognitive ainsi que les personnes normales




# ChatGPT dans le marketing digital

**Des actualités récentes nous ont montré un nombre progressif d'utilisations réelles de l'intelligence artificielle (IA). Cette dernière a désormais un impact sur toutes les industries, que ce soit pour la génération automatisée d'avatars, d'images, ou dans des domaines complexes comme l'analyse des risques, la détection des fraudes, la relation client et l'apprentissage.**

La capacité du programme d'*IA* à imiter la parole et le langage humain tout en fournissant des informations précises a déjà captivé les utilisateurs.

En novembre 2022, la start-up *OpenAi* a lancé *ChatGPT*, une mutation qui impacte les principes fondamentaux de notre société en plus de ses aspects technologiques et projette à la population une crainte d'un avenir en relation avec un monde automatisé et robotique, hors de sa tour d'ivoire.

Son objectif principal est de produire des textes en réponse aux demandes des utilisateurs d'Internet. Le français est l'une des langues dans lesquelles le *chatbot* peut produire des réponses textuelles.

En d'autres termes, le *ChatGPT* est capable d'identifier les erreurs, de rejeter des demandes inadéquates, d'argumenter sur de fausses prémisses et, en fin de compte, de répondre à toutes les requêtes.

### ChatGPT au service du marketing

**Analyse de données, Recherche de mots-clés, SEO**

Le processus de recherche de mots et d'expressions que les gens utilisent

pour chercher de l'information en ligne est connu sous le nom de recherche de mots-clés. C'est une méthode essentielle de toute stratégie de référencement *(SEO)*. En posant quelques questions simples, *ChatGPT* peut vous aider à lancer une stratégie de recherche de mots clés.

L'analyse des données et la recherche sont un domaine au Zimbabwe où le *ChatGPT* aura un grand impact. La collecte, l'interprétation et l'analyse des données pour en tirer des renseignements et orienter la prise de décisions, spécifiquement dans le domaine du marketing digital, constituent un élément crucial et un processus qui va réduire le besoin de travail humain.

### Clusters de contenu

Le processus de développement d'une page pilier efficace pourra commencer en utilisant *ChatGPT* pour aider à créer des grappes de contenu. *ChatGPT* peut également détecter et regrouper des mots-clés, des sujets et des intentions de recherche.

*ChatGPT* peut aussi créer une liste des questions fréquemment posées *(FAQ)* sur votre mot-clé principal qui sont pertinentes pour votre public cible. Toute personne sera en mesure de le faire afin de produire du contenu de haute qualité qui profitera le plus au public et qui pourra aider à les classer bien dans les pages de résultats des moteurs de recherche.

### Risques de cybersécurité

Bien que l'*IA* puisse être extrêmement utile pour identifier et agir contre les cyberattaques, certains risques doivent également être pris en compte.

En premier lieu, le *phishing* ou l'hameçonnage est une technique frauduleuse conçue pour inciter les internautes à soumettre des informations personnelles en se faisant passer pour un service ou une personne connue. Il est une forme de *malware* ou logiciel malveillant dans lequel l'attaquant crée un email non fiable pour tromper les destinataires en suivant des instructions dangereuses. Ces directives peuvent inclure des choses comme ouvrir une pièce jointe, cliquer sur un lien non sécurisé, fournir des données sensibles, ou transférer de l'argent à certains comptes.

En deuxième lieu, la violation de données désigne tout accès non autorisé ou exfiltration de renseignements personnels à partir d'un réseau. Cela comprend les mots de passe ou même le code informatique qui pourraient être utilisés par les auteurs de menaces dans une attaque de ransomware ou pour tout autre objectif malveillant.

En troisième lieu, tout logiciel qui vise à nuire à l'utilisateur d'une certaine façon est appelé *malware*, également connu sous le nom de logiciel malveillant. Il peut être utilisé pour pirater des serveurs privés, voler des données, ou simplement supprimer des données.

Finalement, une attaque *Botnet* est une cyber-attaque ciblée dans laquelle un pirate s'infiltre et prend le contrôle d'un groupe d'appareils connectés. Une attaque de *Botnet*, également connue sous le nom de réseau de robots, est effectuée par un acteur malveillant dans l'intention de prendre le contrôle d'un groupe d'ordinateurs, de serveurs et d'autres types de réseaux à des fins potentiellement malveillantes.

### Quelques cas d'utilisation de ChatGPT

**Assistants virtuels et Chatbots**

*ChatGPT* est utilisé pour générer des réponses de type humain dans un contexte conversationnel, ce qui le rend bien adapté pour construire des *Chatbots* et des assistants virtuels pour les services à la clientèle.

Plusieurs entreprises comme *Meta*, *Canva* et *Shopify* utilisent déjà la technologie qui alimente *ChatGPT* dans leurs systèmes de *Chatbot* de service à la clientèle.

**Résumé textuel**

*ChatGPT* peut fournir une synthèse de texte, où il pourrait être utilisé pour résumer automatiquement de longs documents ou articles.

**Création de contenu**

Basé sur les modèles que *ChatGPT* a découvert à partir des données de formation, il est possible d'utiliser *ChatGPT* pour générer du nouveau texte.

### Alors, ChatGPT est capable de :

- Créer des contenus comme de nouveaux articles ou billets de blogue
- Écrire des histoires ou des poèmes
- Former des recettes
- Préparer des devoirs, etc.

La révolte des *Chatbots* a commencé, et jusqu'à présent, tout se passe comme prévu.

Cependant, il faut faire preuve de prudence lorsqu'on utilise un programme qui peut être enseigné à produire des logiciels malveillants à tout moment en raison des risques potentiels.

Chaque fois que la technologie se développe, nous sommes confrontés au dilemme trop humain de produire des choses qui ont le potentiel de changer le monde, mais qui risquent aussi de le faire d'une façon insondable et incompréhensible.

Le *ChatGPT* n'est pas sans progrès dans la cybersécurité parce que s'il apprend assez de ses commentaires, il pourrait bientôt être en mesure d'analyser les attaques potentielles à la volée et de créer des suggestions positives pour améliorer la sécurité. TR

> Le ChatGPT est capable d'identifier les erreurs, de rejeter des demandes inadéquates, d'argumenter sur de fausses prémisses, et de répondre à toutes les requêtes

# Ooredoo conclut une année financière marquée de succès en Algérie


Le groupe de télécommunications *Ooredoo* a rendu public ses résultats financiers pour la fin de l'année 2022 avec une solide performance pour *Ooredoo Algérie*.

Les revenus d'*Ooredoo Algérie* ont augmenté de 2,8% en 2022 pour atteindre 86,7 milliards de dinars algériens contre 84,4 milliards de dinars en 2021. Le résultat avant intérêts, impôts, amortissements et provisions sur immobilisations *(EBITDA)* a augmenté à 30,8 milliards de dinars en 2022 contre 29,1 milliards de dinars en 2021, soit une progression de 50,7%.

*Ooredoo Algérie* a investi 61% de plus en 2022 qu'en 2021, dépensant 18,3 milliards de dinars contre 11,3 milliards de dinars.

À l'annonce de ces résultats, Bassam Yousef Al Ibrahim, directeur général de *Ooredoo*, a déclaré, *« Ooredoo a clôturé l'année 2022 avec des résultats financiers positifs. Ces chiffres viennent confirmer la viabilité de la stratégie de Ooredoo, axée notamment sur l'expérience client qui demeure au cœur de ses préoccupations, l'accélération de la digitalisation de ses services et la modernisation continue de ses équipements technologiques*. »

# MTN et Orange améliorent les performances de leurs réseaux télécoms


Les opérateurs télécoms *MTN Cameroon* et *Orange Cameroun* ont engagé des travaux d'optimisation des performances de leurs réseaux de téléphonie mobile dans le pays. Il s'agit d'une directive de l'Autorité de régulation des télécommunications du Cameroun *(ART)* pour améliorer la qualité des services télécoms.

Le régulateur voulait s'approprier leurs plans d'actions de l'exercice 2023 pour résoudre les problèmes de qualité de service des communications électroniques. L'ART avait adressé des mises en demeure aux opérateurs télécoms *MTN*, *Orange*, et *Camtel* pour manquement à leur obligation de qualité de service à l'issue de contrôles de performances de leurs réseaux. Les opérateurs se sont ensuite engagés à mener des actions pour remédier aux défaillances relevées, et ont notamment prévu d'investir un montant total de 156 milliards de francs *CFA* (256 millions USD) en 2023 pour étendre la couverture du réseau et améliorer la qualité de service.

Le régulateur promet de mettre en œuvre tous les leviers d'action disponibles pour que les opérateurs concessionnaires de téléphonie mobile offrent aux abonnés, sur l'étendue du territoire national, des performances de qualité de service satisfaisantes.

# Orange et AMN signe un accord pour améliorer la couverture des zones rurales de Madagascar


*Orange* Madagascar a signé un accord avec le constructeur de tours télécoms *Africa Mobile Networks (AMN)* pour étendre davantage la couverture de son réseau dans les zones rurales du pays. Les deux partenaires entendent déployer au moins 500 stations de base sous le modèle *Network-as-a-Service (NaaS)* au cours des dix prochaines années.

De plus, le déploiement des sites a déjà commencé, et certains devraient être opérationnels avant la fin de 2023, apprend-on. Sur la côte est de Madagascar, *Orange* a signé un partenariat similaire avec *NuRan Wireless* il y a quelque temps. Ces investissements s'inscrivent dans le cadre de l'objectif de la société de s'imposer comme principal fournisseur de services numériques dans le pays.

Investir dans les zones rurales devrait permettre d'accélérer la réalisation de l'ambition d'*Orange* Madagascar, étant donné que ces zones concentrent un fort taux de personnes non connectées, donc de potentiels abonnés télécoms. Le projet devrait permettre à l'opérateur télécoms de toucher plus d'un million de nouveaux abonnés.

Le projet permettra également de soutenir l'ambition d'*AMN* de contribuer à étendre le réseau mobile dans les zones rurales d'Afrique subsaharienne avec le déploiement de 10 000 tours à l'horizon 2025.

# Ooredoo Tunisie contribue à protéger l'environnement


Dans le contexte de la charte nationale pour une Tunisie verte, *Ooredoo Tunisie* s'est associé avec la direction générale des forêts pour soutenir la campagne nationale de reboisement forestier et pastoral.

Cet accord s'inscrit dans le cadre du programme de responsabilité sociale de *Ooredoo Tunisie,* Tunisia Lives, et constitue un projet complet visant la restauration des forêts, l'augmentation du pourcentage du couvert forestier et la sensibilisation à l'importance de préserver les richesses forestières pour les générations futures.

Le programme Tunisia Lives *« Tounes T3ich »* de *Ooredoo Tunisie* aborde plusieurs piliers qui contribuent au développement de la société tunisienne, tels que l'éducation, la santé, l'environnement et les questions sociales.

## ICT Maghreb

ICT MAGHREB is a professional exhibition on information and communication technologies reserved for IT decision-makers. The event is held at one of the most beautiful venues in Algiers and welcomes more than 5,000 professional visitors and 150 exhibitors including the main Algerian actors in the technology sector as well as 40% of foreign and multinational companies.

Place : Palace of Culture, Algiers, Algeria


## ICT Maghreb

IICT MAGHREB est une exposition professionnelle sur les technologies de l'information et de la communication réservée aux décideurs informatiques. L'événement se tient dans l'un des plus beaux sites d'Alger et accueille plus de 5 000 visiteurs professionnels et 150 exposants dont les principaux acteurs algériens du secteur technologique ainsi que 40 % de compagnies étrangères et multinationales.

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 : Bab Jdid, Marrakech, Morocco


## Gitex Africa

GITEX AFRICA est un événement hyperconnecté qui transforme les fondations technologiques de l'Afrique qui résolvent les défis mondiaux. Cet accélérateur panafricain renforce le potentiel d'accès et de construction des infrastructures technologiques de base, et permet aux opérateurs technologiques mondiaux, aux responsables politiques, aux start-ups, aux investisseurs et aux talents de réaliser une véritable accélération sur le continent technologique en plein essor.

Lieu : Bab Jdid, 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


## GITEX Global

GITEX GLOBAL présente tous les acteurs, tendances et secteurs de la technologie, et couvre des domaines tels que les villes intelligentes, la cybersécurité, les métavers, l'économie des données, la mobilité, les soins de santé et les télécommunications.

Lieu : Dubai World Trade Center, UAE

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