International Carriers

**orange**™

Beyond Connectivity

Magazine #7

Focus

Designing and Delivering enriched connectivity

There is no question about it, the pandemic has triggered a quantum leap in the digital transformation and, as a result, connectivity requirements have been transformed forever. Expectations are now all about automated, virtualized, seamless, secured networks that offer both global reach and real-time scalable bandwidth.

Emmanuel Rochas
CEO, International Carriers,
Orange

What lies beyond connectivity

Connectivity is definitely the cornerstone of society which gives us, carriers, a unique position. Our challenge is now to stay relevant and develop capabilities to enable the digital society. To remain valuable partners in this new world, we therefore have to offer stronger and more responsive networks, but also go beyond connectivity to propose personalized **digital customer journeys**, monetization solutions, **security design options** and **green technologies**.

Looking ahead, the full introduction of 5G will accelerate the digital shift, while intensifying the verticalization of our industry, triggering the move away from a one-size-fits-all environment towards an hyper-personalization and hyper-virtualization of the entire value-chain. Standard and automized network functions shall enable tailored solutions to support the unique use cases of our customers: this is the new foundation of our business. We have the acumen to make this shift, which involves offering both leading-edge global connectivity and value-added personalized solutions on top.

Orange is your trusted partner

At Orange we fully embrace this vision of our role as a leading international carrier. We make global connectivity more agile and secured thanks to our New Generation International Network supported by our 450,000 km of submarine cables, 45,000 km of terrestrial fiber network and 450 PoPs. Sustainability is at the heart of our Orange strategic project **Engage 2025** and we target for instance that 50% of our electricity consumption will be from sustainable sources by 2025.

Moreover, we take the time to listen to our customers' needs, no matter their size, and we respond. A direct result is our flexible product portfolio, structured with three service levels across our **lines of solutions**: Essential, Dynamic and Intense. From there, we go the extra mile to bring you the best of both worlds with our digital **eCare** platform, which is underpinned by personalized human support no matter where you are in the world.

At Orange we have the long-term vision, the capabilities, and most importantly the will to be your trusted partner as we continue our journey beyond connectivity.

Flexibility and agility are the engine of your evolution

Customers' expectations are now all about dependable, pervasive, and seamless connectivity. Gone are the days where one-size-fits-all solutions were good enough.

Empowering a new breed of operators

Today's operators are expected to scale connectivity in real-time, while redefining their customer interaction towards a digital model. They must also learn to innovate quickly and adopt rapid decision-making processes across the board, so that they can launch services in a matter of weeks.

Bandwidth-hungry usage will only continue to grow exponentially, so operators must keep up with the demand on a global basis. Additionally, latency sensitive applications are around the corner, moving high quality and security to the top of the list of priorities.

Operators of the future must therefore reinvent themselves and commit to providing high-quality, nimble, self-serve, personalized solutions to their whole customer ecosystem.

Orange new generation international network

Orange's new generation intelligent network combines the extensive footprint of a B2B network with the high bandwidth of a wholesale network. A new SDN infra layer with 100 points paves the way for the massive virtualization of network functions such as access, security, voice and roaming. This provides a clear separation between the infrastructure and service layers and hence allows more flexibility and adaptability, as

well as greater cost-efficiency. It also enables operators to reduce the deployment time of new services from months to just a few clicks, in any of our 100 Points of Presence.

Our ultimate goal is zero-touch provisioning, where operators can use automation tools for all their network and service configuration needs. We provide the highest quality of service with a latency of less than 10ms for 80% of our customers, a feature that is becoming critical in today's real-time world.

Our new fully software-defined and automated network has all the attributes required to power your future digital evolution: simplicity, efficiency, control and agility.

Future

Network

Roaming - On the verge of a new dawn

Interview

Cédric Gonin
Senior Marketing Director
Mobile Services
International Carriers,
Orange

What is the current state of roaming?

The pandemic put unprecedented pressure on **roaming business**, with a record decline in traffic levels. This resulted in pressure on roaming rates and a realignment of the business model to reduce minimum fees and commitments, in the hope of alleviating financial risks.

Going forward, the pandemic will impact the roaming business for some time to come, with intra-regional traffic slowly returning, and global traffic not expected to return to pre-pandemic levels before 2023 or 2024.

Other trends, such as global Roam-Like-Home offers for example will play a part in transforming the **roaming** landscape as we know it, as carriers' cost structures, and to some extent their capacity to innovate, will be put under significant pressure. This will have a momentous long-term impact on the whole roaming value chain.

However, a new dawn is coming, triggered by the advent of 5G and the complexity it will bring.

What type of roaming complexity will 5G generate?

5G will bring a significant amount of complexity around signaling, capacity management, end-to-end quality of service all the way to the visited network, slicing, local break-out, **security** and the list goes on.

In addition, 5G will not only interconnect operators but also devices using three different models, namely mobile broadband, massive IoT and ultra-reliable low-latency communication (URLLC). This means that much more investment in capacity, quality management capabilities and intelligent platforms will be required in order to handle all this added intricacy.

Opportunity

Furthermore, if you add in requirements around data analytics, real-time intelligence coming from enterprises in the IoT segment, and the convolution of roaming between public and private networks, we can foresee some substantial challenges in managing this complexity. With the investments it will require, all this while **roaming revenue** and margins are declining.

What does that mean for the future of roaming?

Operators that want to remain relevant in the 5G world will be pressured by enterprises to address this complexity. However, not all of them will have the appetite or even the ability to do so, meaning that more and more will look to outsource at least part of their roaming to larger global wholesale players such as Orange.

This will naturally trigger the consolidation of the roaming business, with fewer operators directly managing their own roaming. We may also see the emergence of carriers that will aggregate complex roaming networks (both private and public) to resell to others.

How Orange can simplify all this complexity?

All these evolutions will take time to materialize. At Orange we are getting ready to support your future 5G roaming needs in order to help you better focus on your domestic market. We already provide all levels of roaming support from basic enablers such as **Signalling** and **IPX** to a **roaming hub**, all the way to full roaming outsourcing, where we negotiate rates, testing and interconnect. Our goal is to offer a full portfolio of roaming management solutions to our external customers, as we already do for our Orange entities around the world.

As mentioned earlier, we foresee a paradigm shift in roaming, from a bilateral business to a super-roaming aggregators model, with large players reselling roaming through a single point of contact. This is a real opportunity for global players such as **Orange**, which already connects 130+ roaming partners and reaches 1.5 billion mobile customers worldwide.

Discover our Roaming solutions

5G
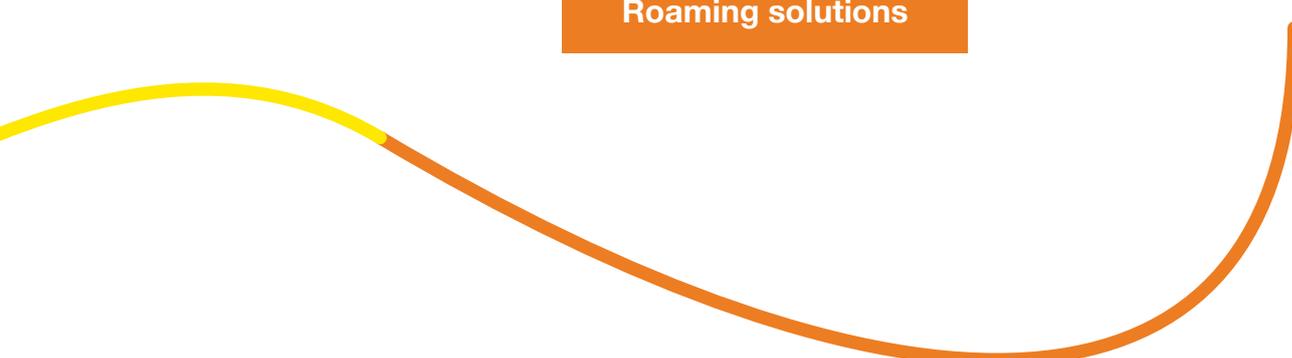
Jumping into the future of connectivity with Dunant and AMITIE

Thanks to these two high-speed cables, Orange offers totally secure end-to-end connectivity between Europe and the United States. AMITIE plus the Dunant system are able to provide a unique experience in terms of performance and reliability.

Redundancy, huge bandwidth, ultra-low latency and security are at stake

You or your customers have very specific requirements when it comes to data connectivity: huge bandwidth, ultra-low latency, optimum quality of service, worldwide coverage mixed with local capillarity and maximum security. In order to handle the increasing volume of data exchanged and to avoid any traffic disruptions, Orange has invested in these new **subsea transatlantic mega cables** with a total capacity of over 100 Tbits/s.

The award-winning **Dunant** cable led by Google in partnership with Orange is an innovative unique "hybrid" POP to MULTIPOP "terrestrial-subsea" connectivity approach that revolutionizes transatlantic data and traffic exchanges. Thanks to Orange expertise and innovation, one of Orange's fiber pairs on Dunant was actually designed to "land" in Paris, as opposed to terminating the optical line in the coastal cable landing station in Saint-Hilaire-de-Riez. Moreover, the landing of the new **AMITIE** cable in France, near Bordeaux, is destined to become an international digital hub of vital importance. With completely different paths on sea and land and two distinct landing points, avoiding a Single Point of Failure, the new AMITIE cable will make these routes more secure by the end of 2022.
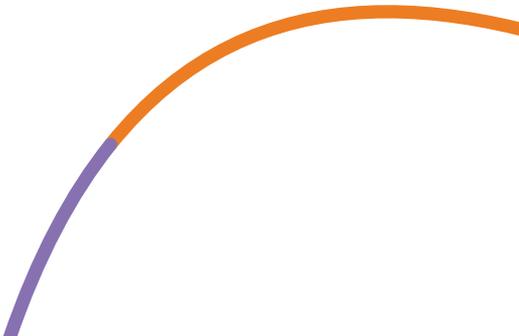
Redundancy

A hub to reach Europe

AMITIE and Dunant put Orange at the heart of the European platform used by various international networks to link to America as well as Africa and Asia. Through the Orange network architecture, Dunant offers a direct link from Ashburn to any POP in Europe: Frankfurt, London, Amsterdam, Paris and beyond. This groundbreaking "open cable" architecture proposes secure, fully redundant, enhanced granularity on this vital transatlantic link. It also offers an optimized delivery time thanks to the latest WDM technology. You can choose service agreements tailored to your needs from standard bandwidth to specific spectrum offers to fiber. It also sets new standards for energy savings, in line with Orange's commitment to a greener future.

Securing the future growth in traffic on the busiest submarine route

The traffic between Europe and North America doubles every two years. As it emerges, these cables will be the cornerstone to accommodate this future growth on different networks, guaranteeing continuous and reliable traffic. They are also designed to evolve at the same pace as future generations of optical transmission technologies and to maintain a high level of performance for at least the next 20 years.

Discover Dunant and AMITIE

Orange won the "Project of the Year - Subsea" award for the Dunant cable. This achievement is the result of our commitment to bring the market extensive innovative solutions in the field of connectivity and wholesale solutions.

Security

Liquid Intelligent Technologies and Orange partner to expand network reach across Africa and build a safer digital society

This **partnership** will give **Liquid** access to Orange's extensive network in West Africa, including the new **Djoliba** network. Likewise, it will give Orange access to Liquid's pan-African network. As a result, the two organizations will offer end-to-end high-speed connectivity and services across their networks, allowing existing and new customers in over 20 African countries greater access and opportunity to build their businesses.

Djoliba is the first unified superfast broadband network in the region that provides seamless connectivity with better availability thanks to network redundancy, security and excellent quality of service.

> II am very happy to announce this important partnership with Liquid Intelligent Technologies which will enable Orange to expand its broad portfolio of convergent solutions across Africa. It further demonstrates Orange's commitment across Africa to deliver highly reliable connectivity to its customers. Furthermore, this partnership also clearly illustrates Orange's unique expertise in cybersecurity and our crucial role in building a safer digital society."

Emmanuel Rochas
CEO of Orange International Carriers.

Read the press release

Legend:
- Submarine cables
- Terrestrial network
- Points of presence
- EVPL
- Orange footprint

Map labels: ACE, Sea-Me-We 3, Sea-Me-We 4, Sea-Me-We 5, PEACE, Lion 2, Lion, EASSy, SAT 3, Main One, Djoliba
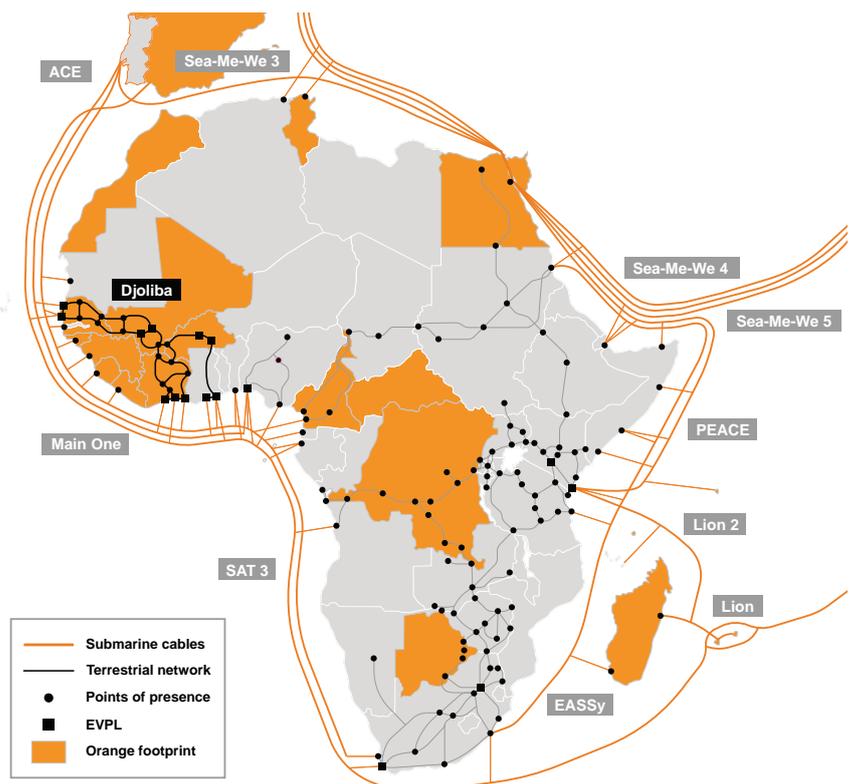
Orange Marine, a committed company

Orange Marine specializes in submarine telecommunications from the initial design and engineering, to the installation of intercontinental or regional links, and maintenance of existing cables.

Environmental protection always in mind

Orange Marine actively contributes to the development of a high-quality global network. As proof of this involvement, 75% of the Orange Marine fleet is electrically connected to the shore-based grid during stand-by and therefore produces no direct CO2 emissions. Since 2020, our ships docked in La Seyne-sur-Mer, France, only use green energy following the installation of solar panels. Orange Marine's sustainable development approach is a reality: integrated QSE (Quality Safety Environment) management system, use of electricity from renewable sources, elimination of disposable dishes, low-sulphur fuels for its entire fleet. We have a duty to you, our customers. But we must also be exemplary in the field of Corporate Social Responsibility.

A new eco-friendly eco-ship

Our DNA prompts us to limit emissions and harmful aspects of our activities, both maritime and terrestrial. It also encourages us to integrate energy savings by adapting the speed of our vessels. With this **new vessel**, we are at the forefront of the most efficient technologies with the latest state-of-the-art equipment. In particular, the ship is designed to reduce fuel consumption, 25% lower than average existing cable ships, using a hybrid energy management system. Additionally, its ability to connect to the onshore power supply reduces carbon emissions when berthed.

Discover Orange Marine

Sustainable

Submarine cables

Orange Marine is one of the most experienced companies in this field and represents 15% of the world fleet of cable-layers. So far it has installed more than 230,000 kilometers of fiber optic submarine cables in all the oceans. With 7 ships in operation, Orange Marine boasts over 100 years of experience in this specific industry.

Your satisfaction drives us to improve

Every year, Orange International Carriers conducts a customer satisfaction survey. The aim is to take the pulse of our customers. It also helps us to improve our services and provide you with an ever better customer experience. The "Best Wholesale Operator" award we won at the World Communication Awards should encourage us to go further in the pursuit of excellence.

90% of our customers commend us

Our commercial relationship has been strengthened with 9 out of 10 of our customers praising us. This is a fantastic achievement for our sales teams and a real source of pride. In your feedback, some of you affirmed that "Orange always provides great sales support and an excellent response to all queries" while others said "the level of professionalism of IC staff during the project phases and in operation are the reasons why I gave a score of 10."

Orange International Carriers is your preferred partner

85% of our customers recommend us and this figure has been steadily increasing over the last 5 years. It also shows that 75% of respondents have a strong preference for Orange as a business partner. This is reflected in a Net Promoter Score (NPS) of 24, a score that remains stable despite the context and confirms that you appreciate the new support options we offer.

Autonomy and customer service are key

To improve your customer experience and increase your empowerment, we need to encourage the use of **digital tools**. We've found that they act as a catalyst for customer satisfaction, increasing NPS by 20 points. Customer service is therefore critical to create an outstanding business relationship. That's why we support you and improve the level of service we provide by increasing our responsiveness, the excellence of our responses and by offering a wide range of **solutions**.

We thank you warmly for your trust.

Our focus is growing your business

Whether you are an Operator, a Content Provider or a pure Wholesaler, an international or a regional player, Orange International Carriers is your trusted partner. We are proud to work alongside you for a fully tailored response to your needs with our comprehensive portfolio of flexible and innovative solutions.

Quality of service

"To keep growing our **messaging** business globally, we need European, African and Middle Eastern routes, and these are the destinations that we know for sure that Orange can deliver with excellent quality of service."
Janett Tardiff - SMS Wholesale Manager, ComputerTel. Inc.

Peace of mind

"Orange now enhances our global **IP Transit** footprint. The level of service and commitment on the client management side, quality IP Transit and subsea cable redundancy make it a no-brainer to partner with Orange."
Dean Pillay - CEO, Agile Solutions Provider

Routing

"There was a critical need to diversify our upstream providers. We knew that Orange's IP service provides one of the best routing offers. We aim to level up our transit through this diversification."
Mark Fernan - Account Director, IX Telecom

Connectivity

"We signed a contract with Orange International Carriers for a 10 Gb **International Private Line** to interconnect Europe and Asia. The new terrestrial route was made possible through Orange's new **Point of Presence** in Singapore, allowing to create a direct connection with Frankfurt."
**Dan Pitts - Senior Manager for Network Planning, Intelsat**

Enhanced security

"I'm very pleased to hear that **RPKI** origin validation is now fully deployed in your network, and that, thanks to you, the internet routing table is now even more secure. You are clearly demonstrating your leadership among the international providers. We're very happy to be one of your Partners!"
Jérôme Fleury - Director of Network Engineering, Cloudflare

Customer

Commitment
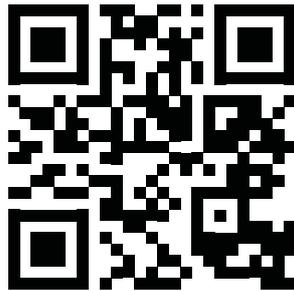
International Carriers

**Wholesale &
International
Networks**