Orange – Connectivity

Connectivity is Orange's core activity and the root of its innovations. In order to meet its customers' increasing needs for connectivity and to provide them with the best possible network quality, Orange is continually investing in:

■ Extending very-high-speed fixed and mobile broadband coverage through fibre and 5G networks
■ Using virtualisation to transform its networks for increased flexibility and to adapt to demand
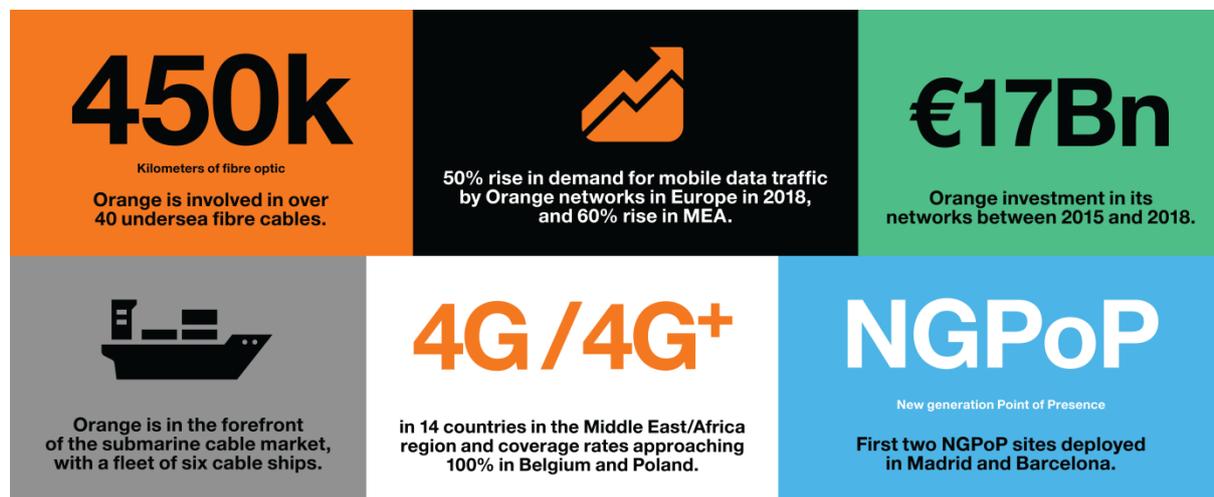■ Automating how its networks operate

Our priorities for fixed networks:
FTTH lies at the heart of the Orange strategy for the fixed network. The capacity of FTTH means that Orange can offer consumers fibre coverage of up to 1 Gbit/s and up to 10 Gbit/s in the near future by upgrading certain types of equipment. By end of 2018, Orange had deployed 32.5 million connectable households with FTTH lines in France, Spain, Poland, Slovakia, Jordan and Côte d'Ivoire. Orange's goal is to have 20 million connectable homes in France by the end of 2021 and 16 million in Spain by the end of 2020.

Our priorities for mobile networks:
In recent years, Orange has reached a considerable achievement with European 4G/4G+ networks, with coverage rates approaching 100% in some countries (Belgium, Poland). The 4G/4G+ network is also operating in 14 countries in the Middle East/Africa zone while Orange's VoWiFi/VoLTE networks are in place in every country in Europe. Orange is also using its expertise and leadership in FTTH as a basis for its preparations for the arrival of the 5G network.

Orange and connectivity at a glance:

450k Kilometers of fibre optic Orange is involved in over 40 undersea fibre cables.	50% rise in demand for mobile data traffic by Orange networks in Europe in 2018, and 60% rise in MEA.	**€17Bn** Orange investment in its networks between 2015 and 2018.
Orange is in the forefront of the submarine cable market, with a fleet of six cable ships.	**4G/4G⁺** in 14 countries in the Middle East/Africa region and coverage rates approaching 100% in Belgium and Poland.	**NGPoP** New generation Point of Presence First two NGPoP sites deployed in Madrid and Barcelona.

Other updates on networks and innovation:

▪ **network functions virtualisation** has already begun across Orange's footprint and which will continue in the coming years, particularly with the development of advanced 5G services. This virtualisation consists of deploying an infrastructure of standardised servers, which host network software applications and make new services and greater flexibility possible.

▪ **network automation**, in terms of design and operation using probes and robots with the aim to improve the quality of monitoring and management of the customer experience is an area that Orange is developing. So called "Self-Organizing Network" (SON) features, or self-organization, are implemented on 2/3 of Orange's mobile networks.

- **The Internet of Things** for which Orange has chosen LoRaWAN™ and LTE-M (a development of the 4G network) technologies to, in particular, limit the energy consumption of connected objects, while improving network access when located within buildings. LoRaWAN™ technology is already operational in mainland France (covering 95% of the population) and Slovakia (covering several cities). The LTE-M network is operational in Belgium, France and Romania, and tests are being conducted in Slovakia, Spain and Poland.
- Orange All-IP transformation is progressing. At a global (Group level), 92 per cent of the broadband services are over IP and in France, the end of sales of PSTN lines occurred in November 2018 (all new lines for consumer and enterprises are now delivered over IP).

Orange continues its submarine cable extension strategy

In a high-growth and highly competitive market, Orange maintains its investments and contributes to the development of a global broadband submarine network.

Orange is involved in over 40 submarine cables: it could be private cable, consortia projects or partnerships with OTT. The aim is to meet customers' needs by facilitating new uses and services. Submarine cables are an essential foundation for our operator activities. It favours digital inclusion and also represents a driver for global economic growth.

Recent news:

January 15, 2019 - Orange inaugurates its new Kanawa submarine cable
November 8, 2018 - Orange launches LTE-M-network in France and two other European markets
October 26, 2018 - Orange and PCCW Global team up to land the new PEACE submarine cable
October 12, 2018 - Orange collaborates with Google on a new submarine cable across Atlantic
September 13, 2018 - Orange reinforces its connectivity on the West African Coast through a major investment in the MainOne submarine Cable

Further information:

Orange Marine
Please refer to 5G fact sheet for more information on Orange's activity on 5G.