



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 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 in order to increase flexibility and adapt to customer demand
- Automating its networks operations
- Increasing energy efficiency

Orange priorities for fixed networks:

FTTH lies at the heart of Orange's fixed network strategy. The FTTH capacity means that Orange can offer consumers fibre access of up to 2 Gbit/s, and up to 10 Gbit/s in the near future by upgrading certain types of equipment. By end of 2019, Orange had 38 million connectable households with FTTH lines in France, Spain, Poland, Slovakia, Jordan and Ivory Coast. Orange's goal is to have 69 million connectable homes by 2023.

Orange priorities for mobile networks:

In recent years, Orange has reached considerable achievements with its European 4G/4G+ networks, as coverage rates reach close to 100% in some countries such as Belgium or Poland while Orange's VoWiFi/VoLTE networks are deployed in every country in Europe. The 4G/4G+ networks also operate in all countries in the Middle East/Africa region. Orange is also using its expertise and leadership in FTTH as a preparation for the fibre connectivity for 5G radio sites.

With 5G and in addition to existing networks, Orange wants to maintain its leadership in networks with new useful services adapted to its customers' changing usage patterns. Orange considers the development of 5G around three areas:

- improved high-speed mobile broadband
- very high-speed fixed broadband access
- new applications to support the digital transformation of businesses

After the launch of its first commercial 5G network in Romania on 5th November 2019, Orange Group will launch 5G commercially in the majority of its European countries in 2020, including France, based on the availability of 5G spectrum frequencies and usage trends. By 2023, Orange will have rolled out 5G across 26,000 sites in Europe. Orange is also preparing for core networks transition to 5G that will bring new technical performance from 2023. This will allow the introduction of various different uses for consumers (immersive videos, cloud gaming) as well as for business customers, for whom 5G will be a real breakthrough (optimised production time, remote machine control, predictive maintenance, etc.).

Other updates on networks and innovation from Orange include:

- **network functions virtualisation** has already begun across Orange's footprint and will continue in the coming years, with the development of advanced 5G services. This virtualisation consists in deploying a standardised infrastructure, which hosts network software functions enabling the development of new services and increasing flexibility. With the transformation towards On Demand Networks & 5G, Orange is also preparing the **edge computing** era, in which, telcos, with their distributed architecture, have an opportunity based on their secure and well connected real-estate asset. The on-demand & slicing promises of 5G, combined with cloud offers proposed at the edge, will enable Orange to

develop new business revenues associated to specific services that require on-demand quality.

- **network automation** is also an area Orange is developing in order to improve the quality of network monitoring and the customer experience management. The “Self-Organizing Network” (SON) features (or self-organisations) are implemented on 2/3 of Orange’s mobile networks. AI is also being used in various processes (e.g. mobile CAPEX decisions based on customer value in Spain, fault analysis and network intervention decisions on copper/fibre in France) and will further expand.
- The development of **the Internet of Things** for which Orange has chosen LoRaWAN™ and LTE-M (a development of the 4G network) technologies to 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 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 cable projects, including the deployment of private cables, consortia projects or partnerships with OTTs. The aim is to meet customers’ needs by facilitating new uses and services. Submarine cables are an essential foundation to the activities of an operator such as Orange as it favours digital inclusion, while driving global economic growth.

Recent news:

February 18, 2020 - [Orange and Telxius teaming up on Dunant submarine cable](#)

January 15, 2019 - [Orange inaugurates its new Kanawa submarine cable](#)

Further information:

[Orange Marine](#)

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