

Telconomics

Progress report 2019

21 May 2019

Arcep publishes its annual scorecard: Key figures for 2018



Operators' revenue
(retail market)

35.6 billion €

- 1,0% ↘



Operators' investments

9.8 billion €

+ 0.2 Bn€ ↗



**Number of broadband and
ultrafast access lines**

29.1 million (of which **31% UF**)

+ 0.7 M ↗



Number of SIM cards

75.6 million (of which **63% 4G**)

+ 1.0 M ↗

The pro-investment doctrine

Regulation to improve
fixed and mobile connectivity

Connectivity that is vital to France's digital transformation

Nationwide connectivity with a dual objective



Regional development

Guaranteeing universal access to digital services

A competitive economy

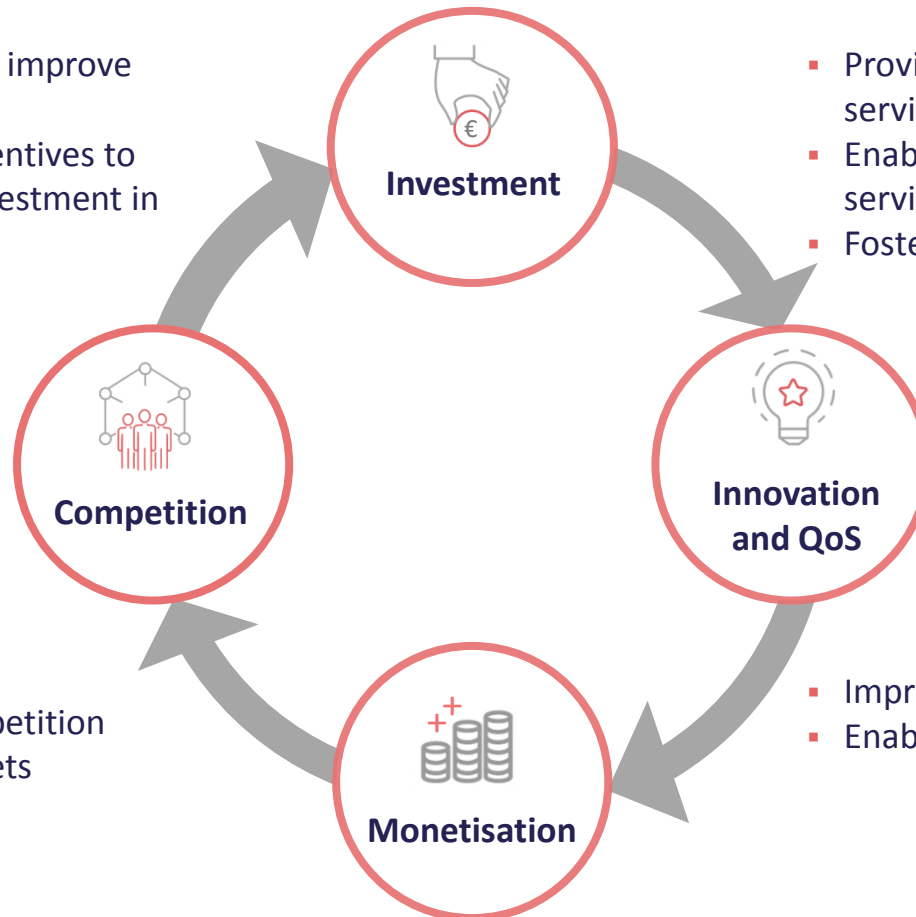
Unleashing innovation in every sector

Pro-investment regulation to achieve these goals

Competition is not an end in itself: it is part of a cohesive scheme for promoting network investments

- Pushing operators to improve service performance
- Giving operators incentives to innovate leads to investment in the networks

- Provide coverage and make services accessible
- Enable the use of ultrafast services
- Foster innovation



Operators have answered Arcep's call

Rollouts in line with Arcep's plan,
as set out in its Strategic Review in 2016



100%

Expansion of FttH network coverage

Three-year plan: 7 to 8 million new FttH access lines deployed by private and public sector players

✓ 7.9 million access lines deployed since 2016



112%

Infrastructure-based competition

Three-year plan: two co-investors on 80% of deployed FttH lines

✓ More than 90% of deployed lines financed by at least two operators at the end of 2017



120%

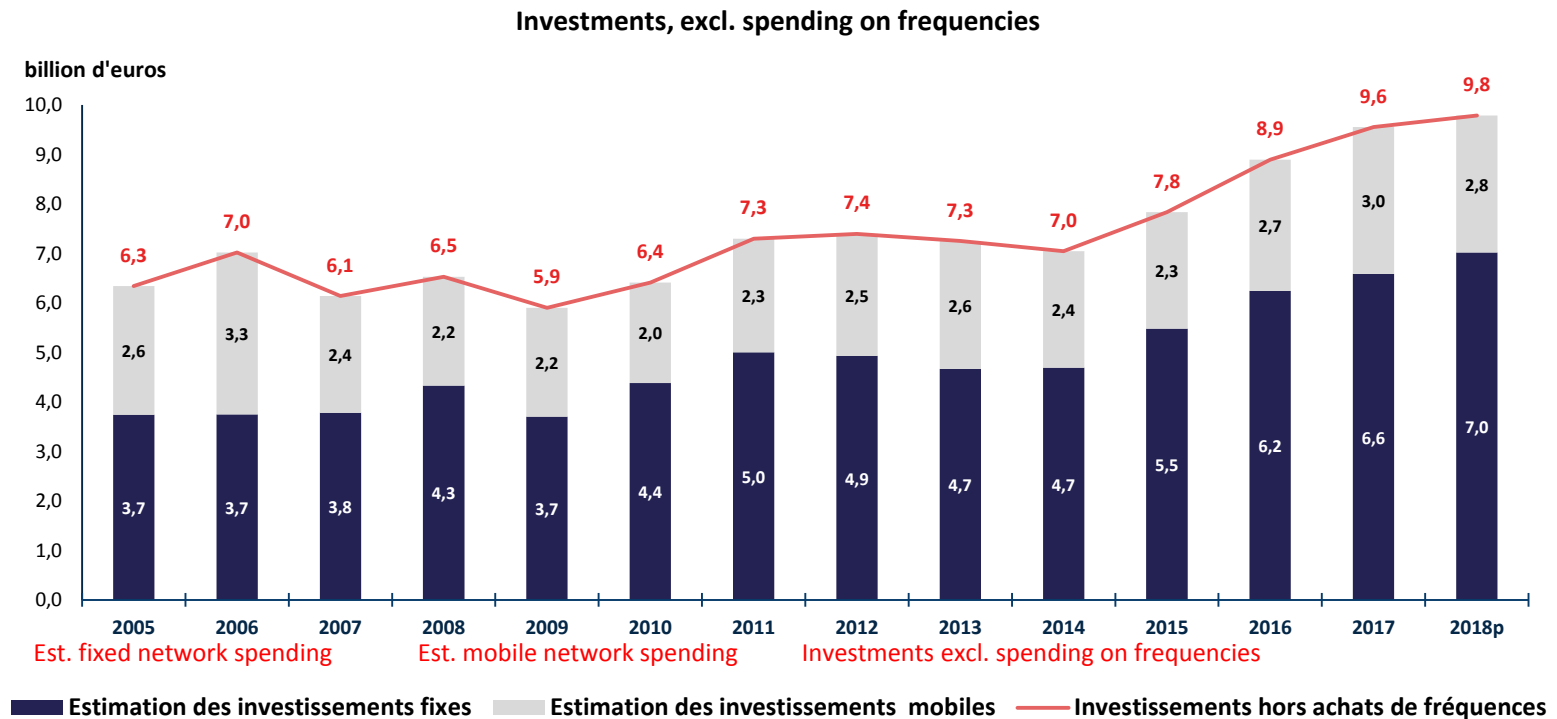
Upgrade existing cell sites to 4G

Three-year plan: 25,000 2G/3G cell sites upgraded to 4G

✓ More than 30,000 sites upgraded since 2016

Investment levels continue to climb

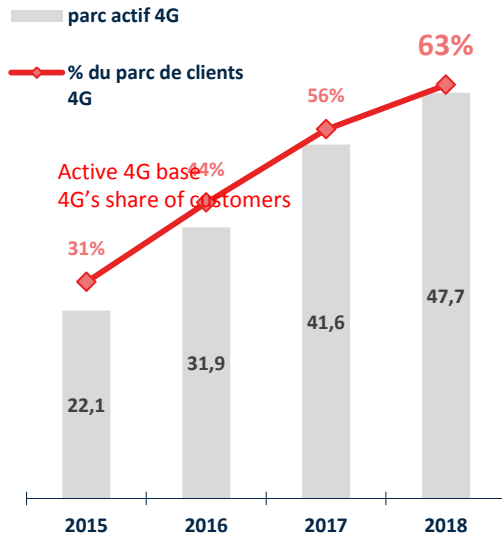
Growth driven chiefly by fixed network rollouts,
Including 450 M€ spent on FttH local loop deployments



Investments keeping pace with rising usage

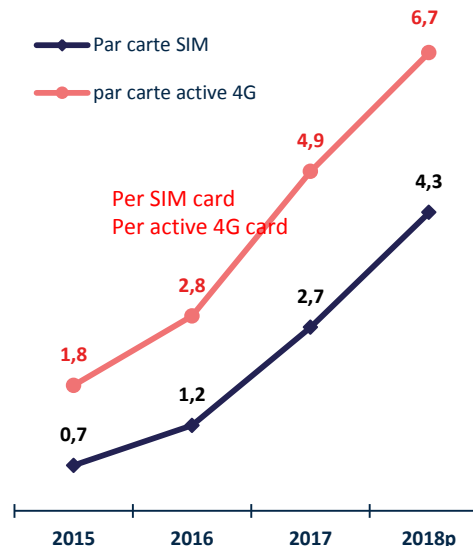
4G and superfast FttH customer numbers continue to surge

Number of active cards on 4G networks (million)



Active 4G base has doubled since 2015

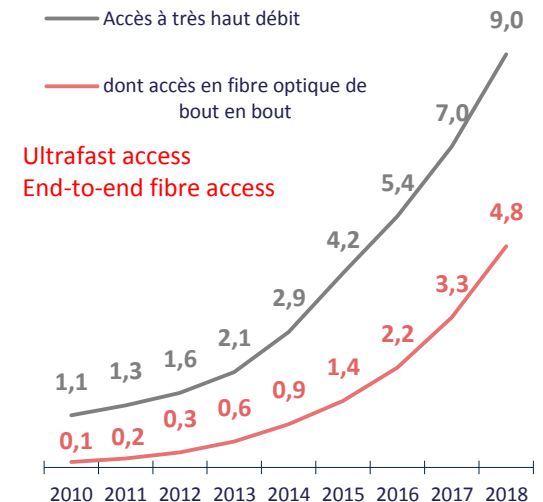
Average mobile data consumption (Gb)



Monthly mobile data traffic since 2015:

- x6.1 per SIM card
- x3.7 for 4G users

Number of end-to-end superfast and optical fibre access lines (million)



Fixed superfast access growth driven chiefly by FttH

Actions carried out this year

Several core initiatives for the sector

A regulatory framework designed to bolster players' investment in ultrafast fixed access

Industry players' evident faith in the fibre business model



Clarification of rollout conditions

- **Having all operators participate in fibre investments:** confirmation that Orange has properly implemented changes to its processes for strengthening the guarantees given to third-party operators in terms of operational non-discrimination, and additional commitments from Orange
- **Clarification of Orange-SFR network sharing in “AMII” zones** (covered by letters of intent) and legally binding rollout commitments.
- Co-financing operator's ability to use the fibre lines it helped finance, **to connect its mobile base stations**



Mobilising players for ultrafast rollouts

- + 3.2 M premises passed for fibre in 2018
- Growing use of fibre network sharing
- National operators joining PIN (public-initiative networks)



Guaranteed balances

- Rollout transparency and monitoring (via coverage maps)
- Stabilisation of the economic equation of PIN and AMEL (for local rollout commitments), through stakeholder opinions
- → **Some 60 PIN pricing notifications processed by Arcep**

A business market galvanised by SoHo/SMEs' digital transition

Wholesale market competition being spurred by the push for ubiquitous fibre access for businesses



Emergence of a competitive activated FttH business market

- Kosc Telecom launches the first nationwide plan
- Bouygues Telecom and SFR enter the market



Advent of FttH plans offering improved QoS

- Orange marketing wholesale products with 10H GTR and 4H on FttH networks
- Introduction of similar offers on other infrastructure operators' FttH networks, and particularly on PIN



Consolidation of alternative operators to be more competitive

- Bouygues and Iliad acquire specialised operators
- Regional operators receive cash injection

A framework that stimulates investment in mobile connectivity

Spectrum management policies that support regional digital development



Implementation of the New Deal

- Operators' new commitments written into their existing frequency licences, which are set to expire between 2021 and 2024, making them legally binding
- Conclusion of the frequency reallocation procedure, awarding licences that carry ambitious regional development obligations
- Quarterly publication of progress reports on operators' compliance with their obligations



Improved coverage nationwide

- 9600 sites upgraded to 4G in 2018, i.e. 91% of the population and 65% of the country covered for 4G by all 4 operators as of Q4 2018, compared to 82% and 45%, respectively, in Q4 2017
- Three orders issued in 2018 and 2019, identifying more than 800 areas to be covered as part of the priority rollout targets scheme
- Improved indoor coverage: operators providing Voice over Wi-Fi services to eligible consumer market clientele

Releasing frequencies to support businesses' digital transformation

Donner aux entreprises les moyens d'être compétitives et d'innover

May 2019

Professional mobile radio networks: creation of a window to allocate 2.6 GHz TDD frequencies for vertical market players

- More than 20 core trials have already been performed: transport, energy, aeronautics
- No close date set for the window: requests can be filed rapidly for already mature projects, giving more nascent projects time to develop

Underway

Internet of Things: 915 – 921 MHz band being released

- Enabling an IoT frequency band harmonised with Asia and North America
- Opens the way for economies of scale, global IoT connected object networks, and fosters cross-continental mobility for connected objects

Underway

Creation of a regulatory sandbox

Giving players the opportunity to test their innovations without necessarily having to comply with the usual regulatory framework

Coming up: 5G frequency allocations

Monetising spectrum for the regions' digital transition, fostering competition
and paving the way for new uses

Underway

Identifying requirements, preparing allocations, mobilising projects

- Gauging players' interest in using 3.4-3.8 GHz, 26 GHz and 1.4 GHz band frequencies
- Trial window regulatory sandbox for the 3.4-3.8 GHz and 26 GHz bands open since January 2018: some 30 trials launched on the 3.4-3.8 GHz band

3.4-3.8 GHz band: focus on preparing the allocation procedure

- Work being done on optimising the quality of available bands: rearrangement, setting the technical terms and conditions
- Upcoming public consultation on allocation rules for the band, with a view to allocating in autumn 2019

May 2019

26 GHz band: focus on support players and uses

- Call for the creation of 5G trial platforms, open to third parties
- 20 responses received, notably from vertical market players. Currently being examined

Underway

A question for the future: mobile network sharing

Promoting efficient infrastructure-based competition, taking societal, urban planning and energy consumption issues

2016

Application of network sharing guidelines for mobile operators

2018

Enforcement of sharing obligations made through New Deal agreements to cover the most sparsely populated areas

- Active sharing for at least 2,000 points of service per operator, of the 5,000 listed in the new targeted coverage scheme, passive sharing for the remainder.
- For each new site deployed, requirement to inform other operators and potentially host them.

Tomorrow?

Increased network sharing for 5G?

Questions arising over the most remote areas of the country, and over small cells (26 GHz in particular), notably given the potential density of the required equipment.

Data's power to stimulate network investments



Amplify the regulator's ability to act in its core areas of responsibility

A greater ability to detect weak signals, monitor market developments in a more fluid fashion, accelerate its ability to take action



More informed users to steer the market in the right direction

Provide bespoke information through consumer platforms and open data.



Taking user experience into consideration when regulating

Complete traditional intervention tools with a less intrusive approach, based on the State-as-a-platform



Build an alliance with the crowd

Also work with crowdsourcing players to have access to better sources of information on users.

Mobilising the crowd to create a virtuous cycle of investment

Strengthening information gathering tools for better informed users and regulatory action



Enhancing fixed and mobile coverage maps

- **Cartefibre.arcep.fr**: incorporation of fibre coverage at the building level, and rollout forecasts for municipalities
- **Monreseaumobile.fr**: publication of operators' theoretical coverage maps, results of Arcep's audits, including in the overseas territories and, coming soon, data supplied by partners



Sharing fixed and mobile testing tools with the crowd

- Publication of a **code of conduct** on internet quality of service, for players involved in testing
 - Development of an **"Access ID card" API**
 - Publication of a **monréseaumobile.fr roadmap**: distribution of a regulator's toolkit to help local authorities wanting to collect their own data, along with a dedicated code of conduct for mobile networks
- First field tests launched by local authorities in 1H 2019



Improving the regulator's actions thanks to the "J'alerte l'Arcep" reporting platform

Several actions undertaken, ranging from sometimes "simple" solutions such as making a phone call, to issuing certain operators with a formal notice to comply with the regulatory framework.

European pro-investment regulation

Europe staying the course for efficient investments



Adoption of the new European telecoms code

- New objective: connectivity to very high capacity networks
- Measures designed to foster fibre rollouts and competition, inspired in part by France's co-investment initiative
- BEREC in charge of issuing guidelines to ensure a cohesive approach to several new provisions



Preparing European investments in 5G networks

- Objectives set by the Commission: coverage of a major city in every Member State by 2020 and all major cities and main transport corridors covered by 2025
- BEREC work on how regulation can help foster investment in 5G and its potential impact on regulation
- Commission's call for each Member State to perform a national assessment of cybersecurity risks tied to 5G network infrastructures



European elections: challenges facing the next Commission

Taking actions that factor in all of the players along the digital economy value chain?

Forward-looking work to anticipate upheavals on telecom networks

Future networks:

A new period of examination to prepare for tomorrow's regulatory challenges



Focusing on a broad spectrum of issues

- Definition of five key avenues to explore: emerging uses, connectivity issues, network agility, spectrum management, and cross-section developments
- Publication of works that lay out future issues and challenges in two areas:
 - Network virtualisation
 - Connected cars



A collaborative process with a wide array of stakeholders

- Creation of an expert committee: 10 academic, entrepreneurial and industrial figures covering a broad range of expertise.
- Hearings with the entire ecosystem: operators, equipment suppliers, service providers, internet companies, academics, etc.
- Call for feedback on published works

Thank you for
your attention

