

French Telecoms Economics 2021

Final report

French Telecoms Economics 2020

01

The global digital ecosystem has been growing steadily throughout the crisis, with however limited gain for European Telecoms

02

French telecom operators continue to invest despite the pandemic in order to support usage development

French Telecoms Economics 2020

01

The global digital ecosystem has been growing steadily throughout the crisis, with however limited gain for European Telecoms

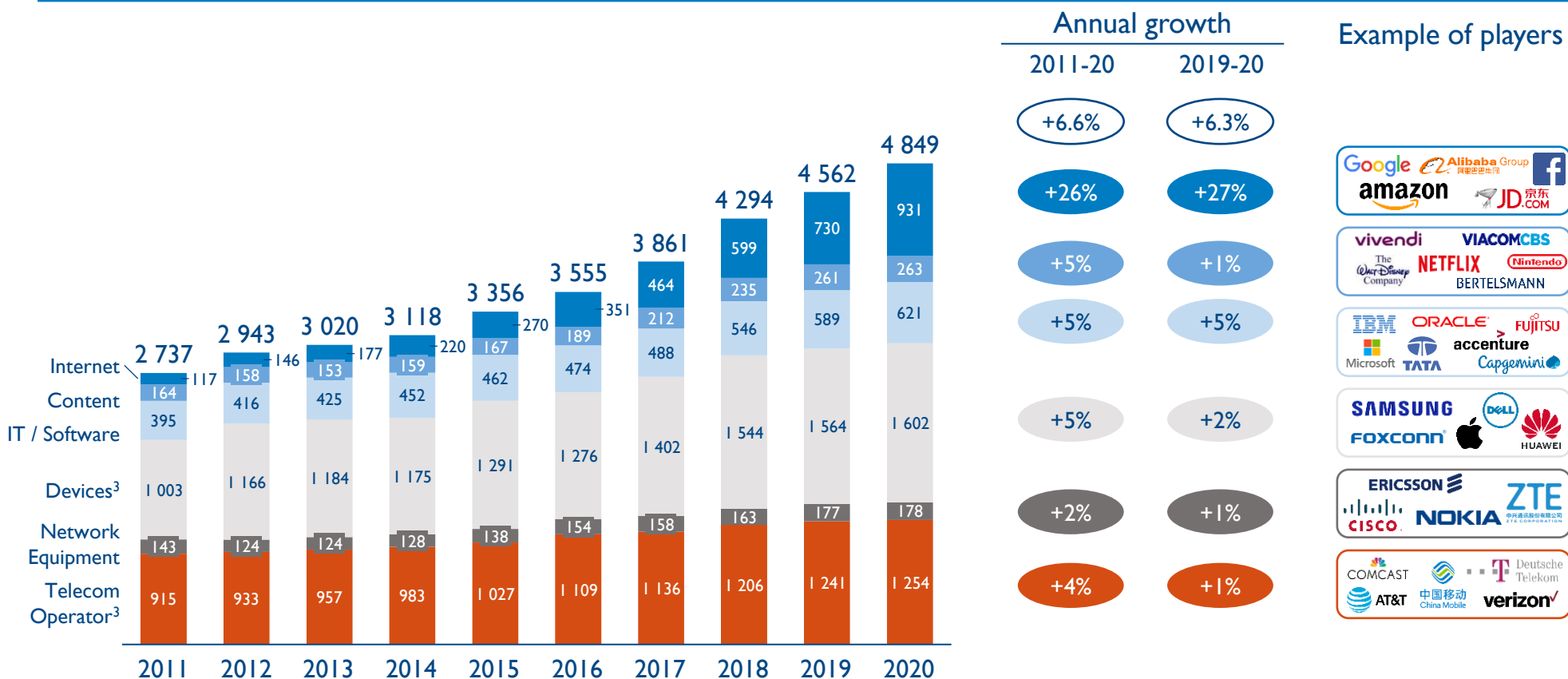
02

French telecom operators continue to invest despite the pandemic in order to support usage development

The global digital ecosystem continued to grow during the pandemic, driven by Internet players

Digital ecosystem revenue¹

World, 2011-2020, billion euros²



Source: Thomson Reuters Eikon, Arthur D. Little

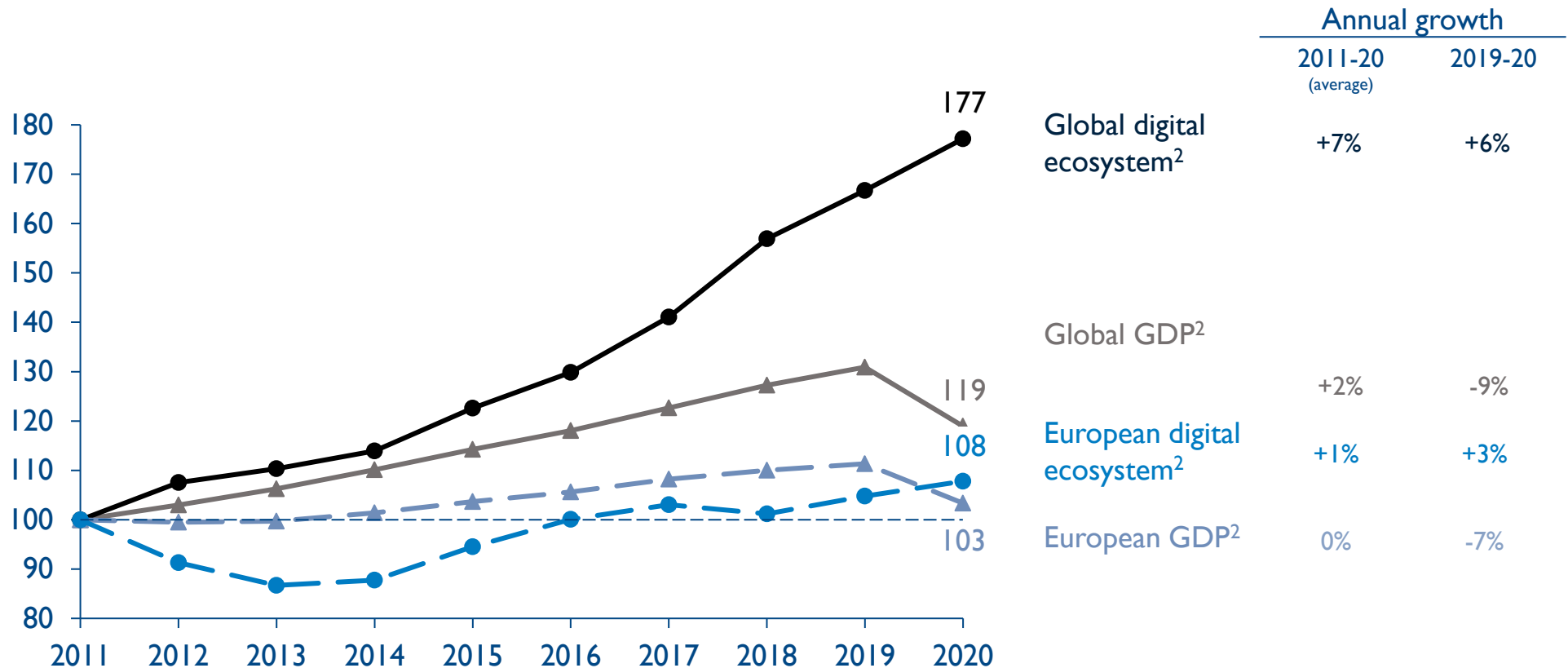
Note: 1) Panel of 180 companies: By sector, selection of the top 30 companies in 2020 by their turnover, 2) Constant 2020 Euros.

3) As Huawei (Devices) and Altice-SFR (Telecoms) are not listed, revenues were added to the panel of 180 companies in the sample

The European digital ecosystem currently grows faster than GDP, but still slower than the global digital ecosystem mondial

Digital ecosystem revenue growth¹ vs. economy

World, 2011-2020, base 100 in 2011



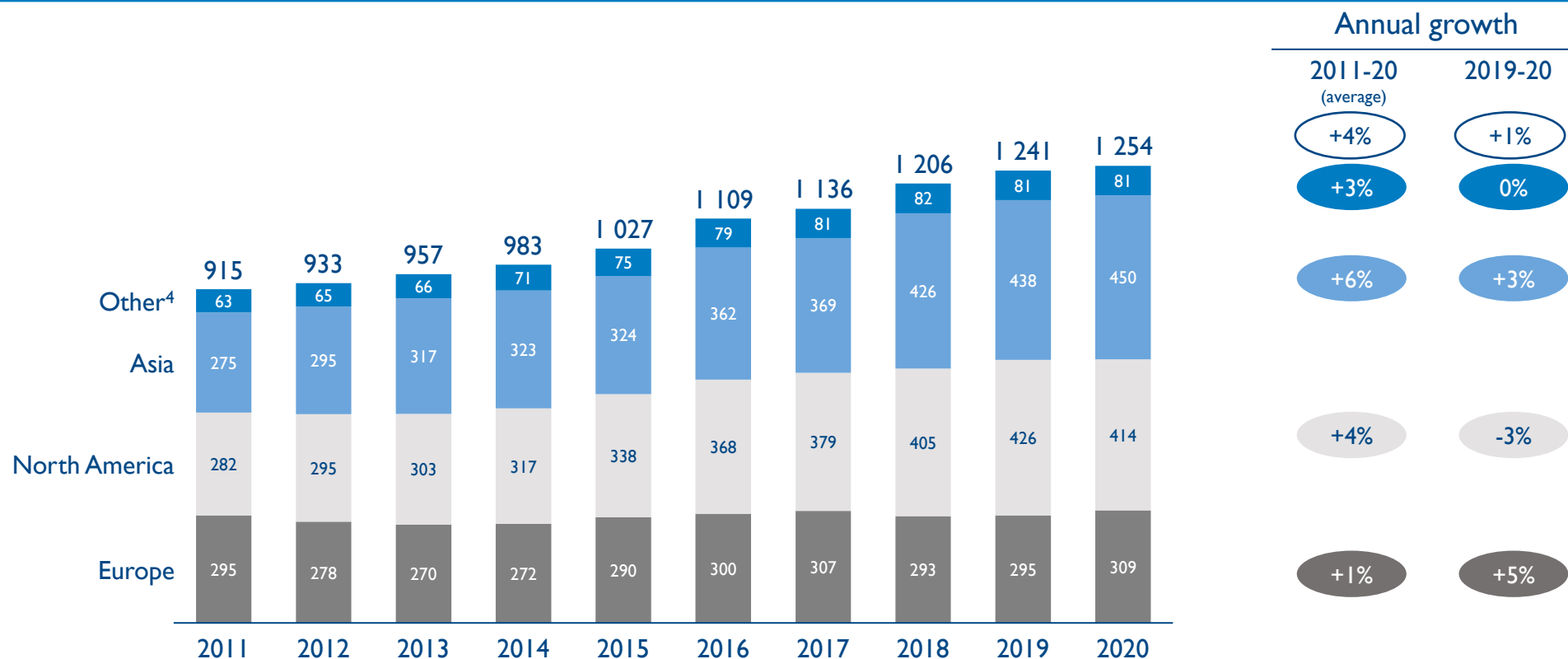
Source: Thomson Reuters Eikon, World Bank, Arthur D. Little

Note: 1) Panel of 180 companies: By sector, selection of the top 30 companies in 2019 by their sales in 2020, 2) In constant 2002 euros, within the perimeter of the countries considered in the digital ecosystem (representing 75% of world GDP, or 70% of European GDP for European data).

Since 2011, the revenue from European telecom operators has grown slower than for Asian and American operators

Telecom operators revenue by region^{1,2}

World, 2011-2020, billion euros³



Source: Thomson Reuters Eikon, Arthur D. Little

Note: 1) Region based on head office localisation, 2) Panel of 180 companies: By sector, selection of the top 30 companies in 2020 by their turnover, 3) Constant euros 2020

4) Including top 30 players except Asia, North America and Europe (Oceania, Middle-East, Africa and South America)

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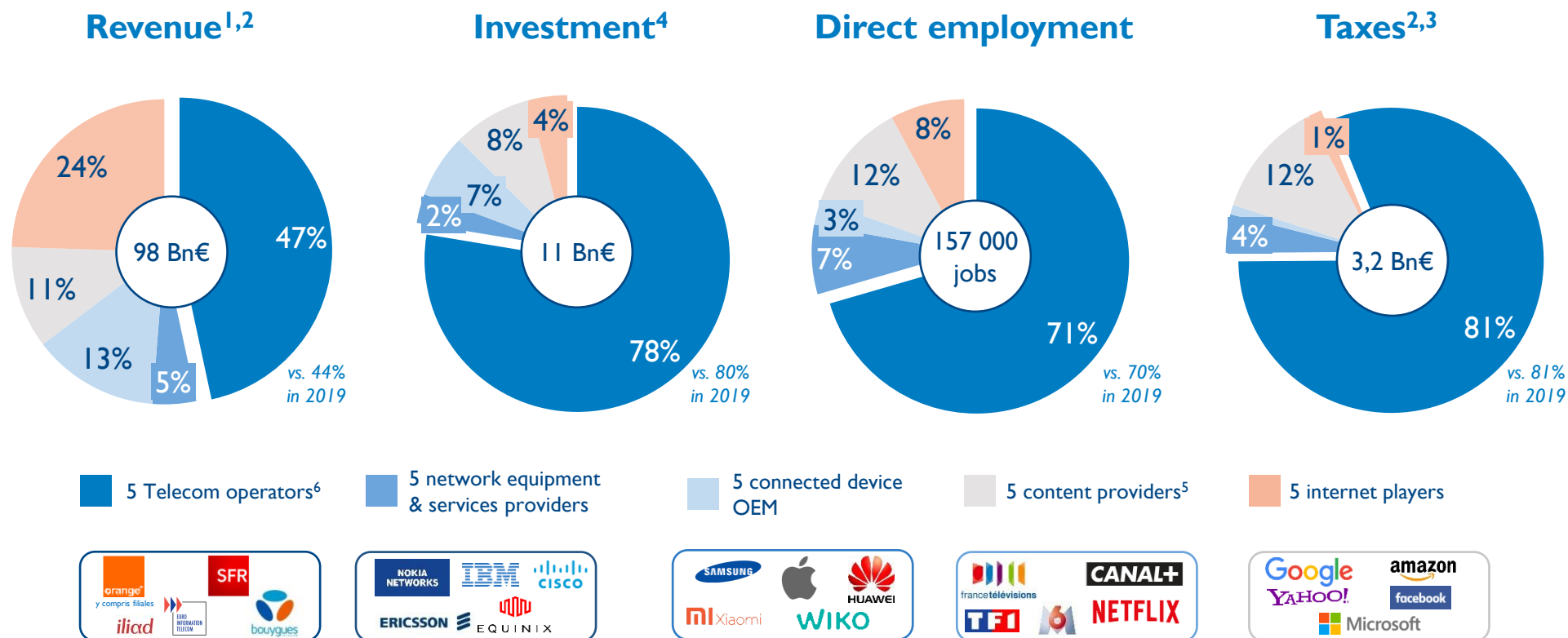
02

French telecom operators continue to invest despite the pandemic in order to support usage development

Telecom operators play an essential role in the development of the French digital ecosystem

Contribution of main players to the French digital ecosystem

France, 2020 (vs. 2019)



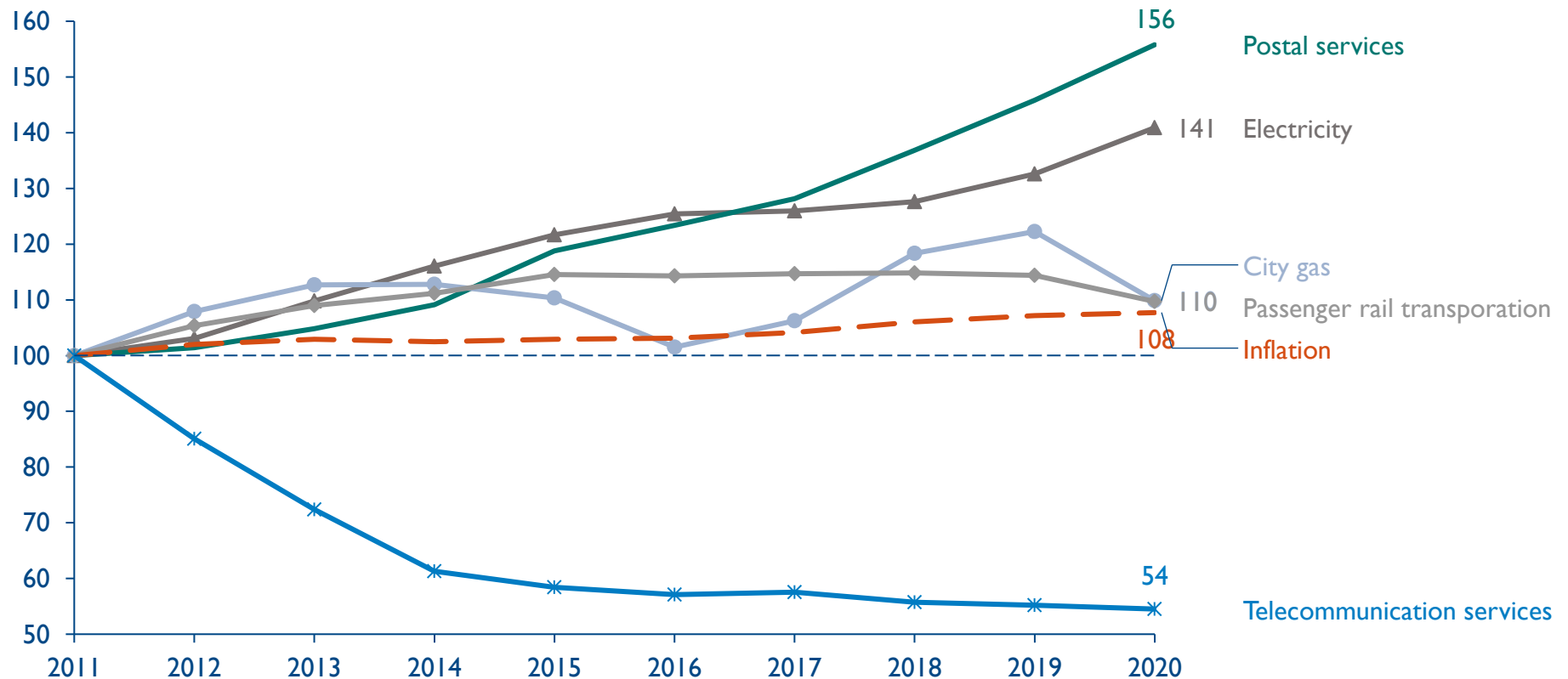
Source: Thomson Reuters Eikon, Diane, Annual Reports, Arthur D. Little

Note: 1) Reported or estimated revenues in France or documentary research, 2) Data adjusted to take into account the estimated effective revenues of international players in France, 3) Corporate income tax and similar taxes and payments - excluding fines/agreements/adjustments paid by Internet players; 4) Based on gross investments (excluding asset disposals) 5) Netflix revenues calculated on the basis of the number of subscribers reported. 6) EIT consolidated with BT from April 2021

Telecom prices continue to decrease while other regulated sectors tend to increase their prices

Consumer prices evolution for a selection of essential services

France, 2011-2020, Base 100 in 2011

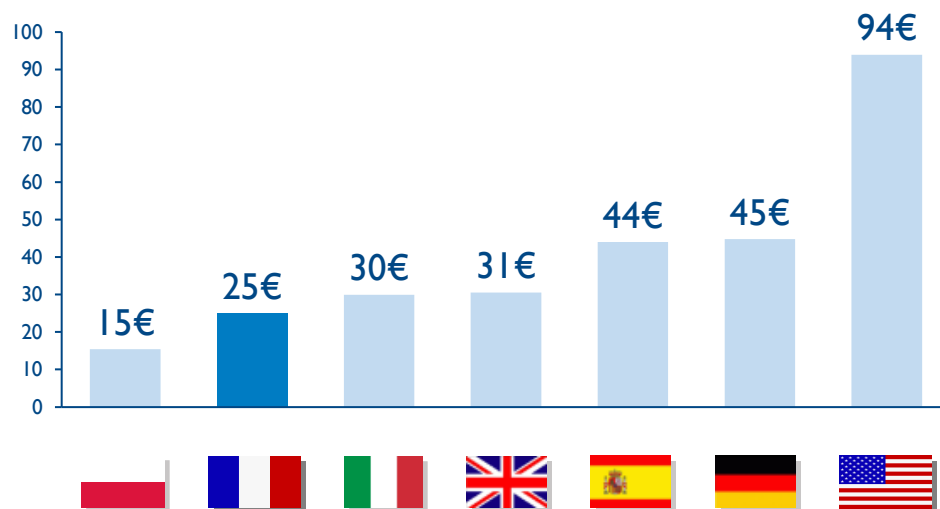


Source: INSEE, Arthur D. Little

Prices of telecom services in France are among the lowest in major Western markets

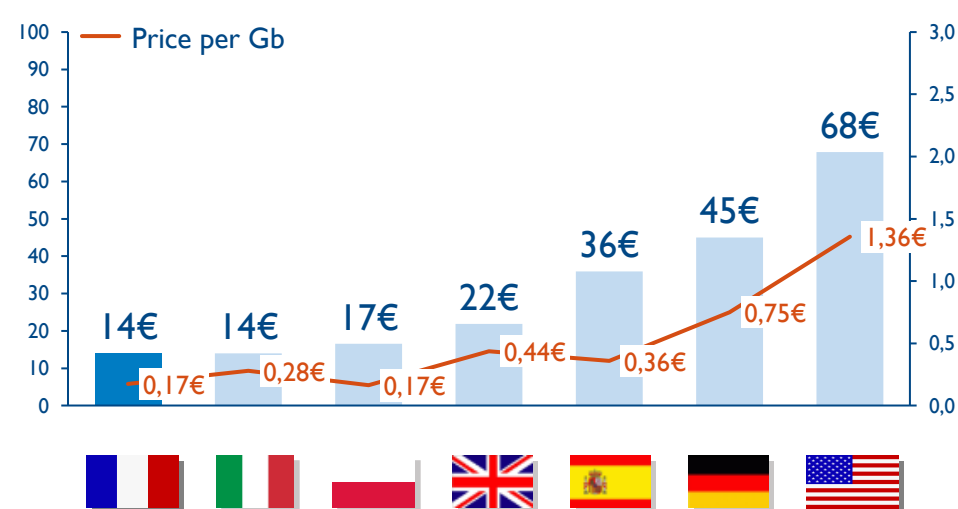
Price benchmark from leading operators
Country selection, September 2020, € / month (inc. taxes)

Fixed (Triple Play)¹



Mobile²

Benchmark
Mobile 50 Gb



Excluding promotions and connection fees

By country, selection of the most competitive package among operators with over 10% market share

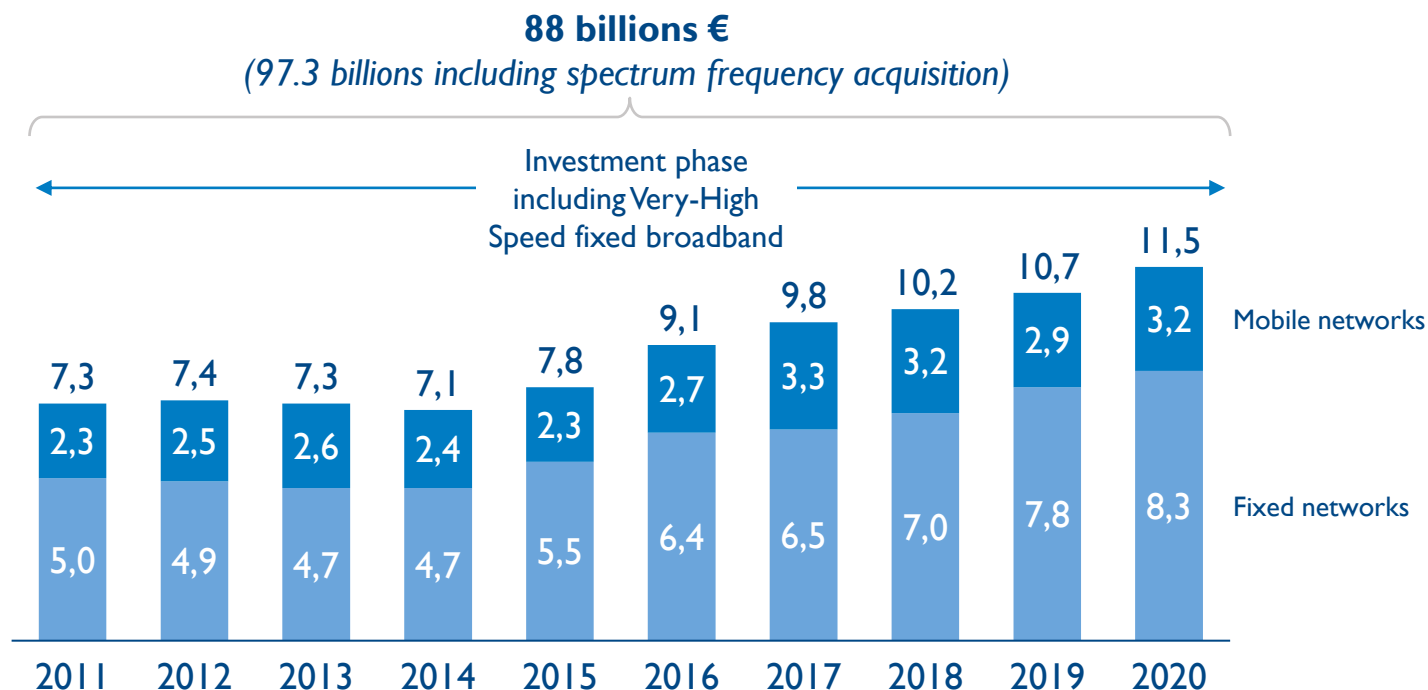
Source: Operator sites, Arthur D. Little

Note: 1) Triple play offers only; unlimited telephony at least to landlines; unlimited broadband Internet via xDSL or fiber; television included, excluding additional packs; operators with market share > 10% excluding promotions, 2) Unlimited calls (when available otherwise >500 minutes), unlimited SMS/MMS, Internet at least 50 GB; offers without terminal, offers without commitment when available; operators with market share > 10%.

Investment in telecom infrastructure continuously increases and reached 11.5 Bn€ in 2020

Investment in telecom networks¹

France, 2011-2020, billion d'euros



+ 9,1 billion € spectrum purchase over the period.

0,9 in 2011
2,6 in 2012
2,8 in 2015
2,8 in 2020

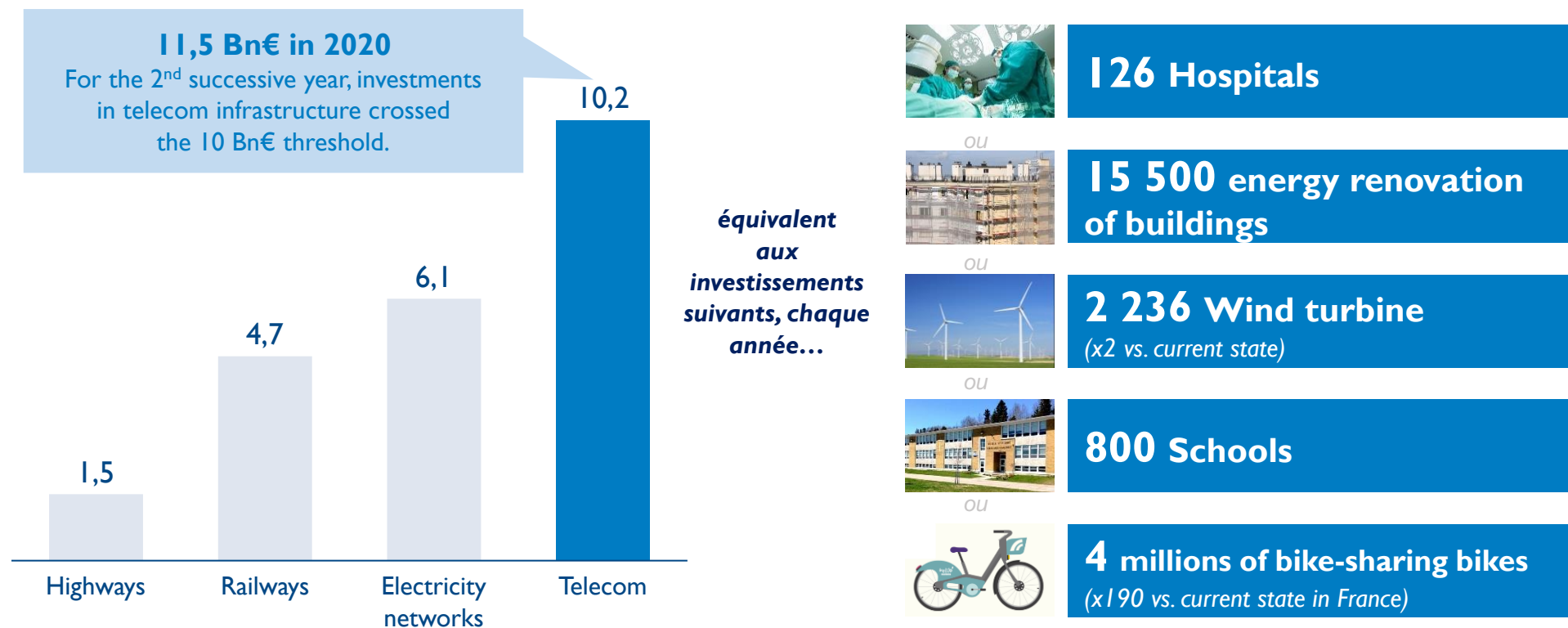
Source: ARCEP, Arthur D. Little

Note: 1) Investment of the entire telecom sector in networks (telecom service operators and other private players), excluding purchases of mobile frequencies

The telecom industry represents the largest private investor in infrastructures in France

Investment¹ from Telecom versus other Infrastructure industries

France, 2016-2020, 5 years annual average, billion euros



Source: Companies, Documentary Research, Arthur D. Little

Note: 1) Telecoms: ARCEP figures (excluding purchase of frequencies); Electricity: ERDF; Railway: RFF; Motorways: ASFA (Sanef, SAPN, ASF....)

The continuous investment provides a state-of-the-art infrastructure connecting all French people



Rise of mobile data

1 Gb monthly usage per user threshold crossed early 2021

Average 4G data consumption¹
Monthly average



Accelerated fiber deployment

Generalization of very-high speed internet

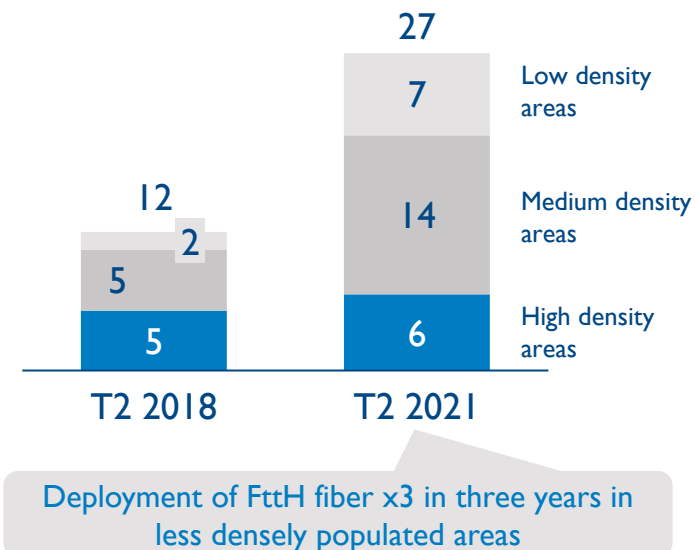
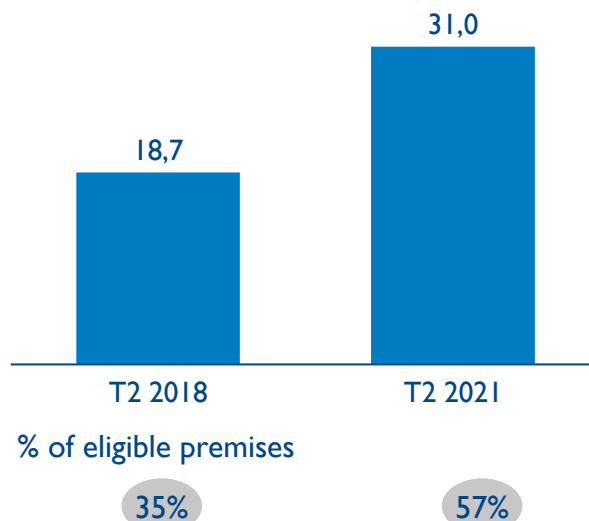
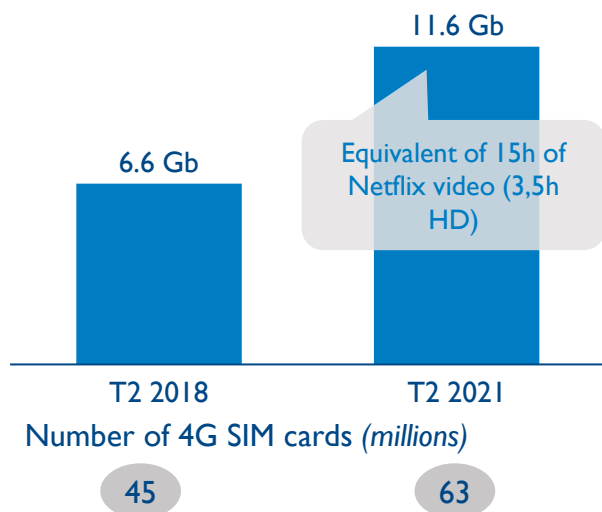
Premises eligible to very high-speed internet offers² Million premises



National connectivity

New milestone in household passed in low density areas in 2021

XX Number of premises eligible for FttH in millions



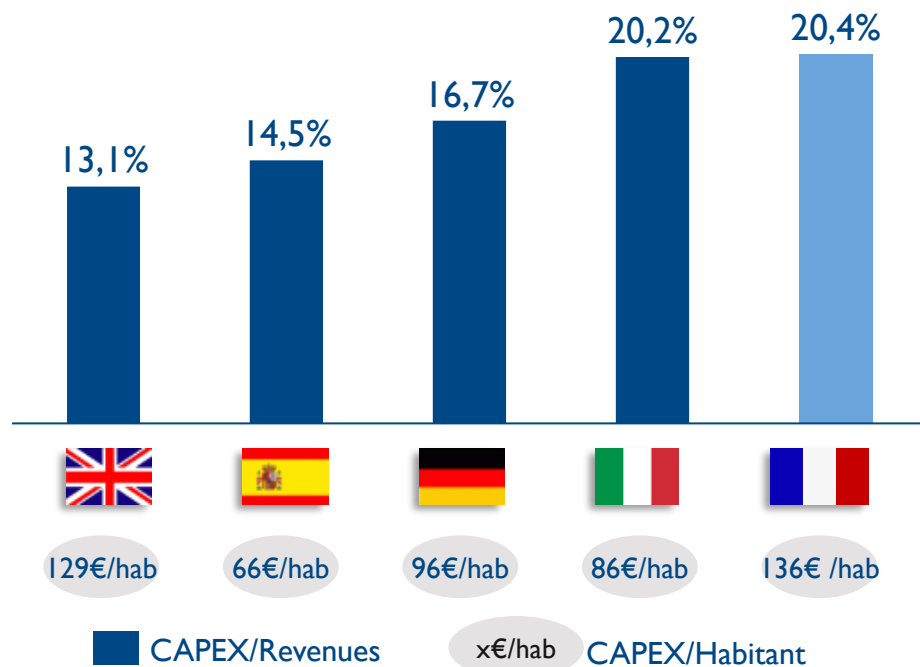
Source: ARCEP, operators, Arthur D. Little
Note: 1) Consumption by active 4G card

Investment effort of French telecom operators is amongst the most important ones in Europe

Largest investment effort in Europe

Investment effort rate per country (CAPEX¹/Revenues¹)

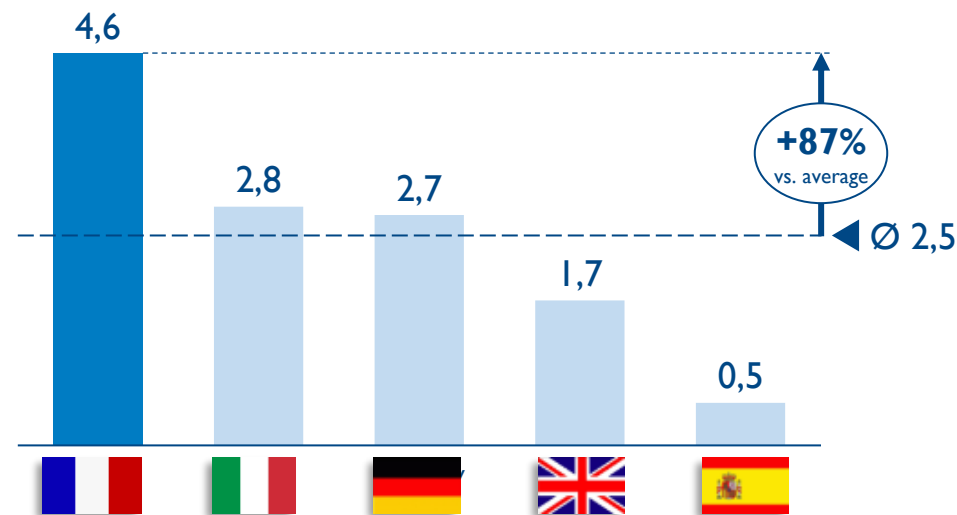
United Kingdom, France, Spain, Germany, Italy 2020



Largest Fiber deployment in Europe

Number of premises connected in FttH/B over 12 months

Selected European countries, Sept 2019 - Sept 2020, millions of premises



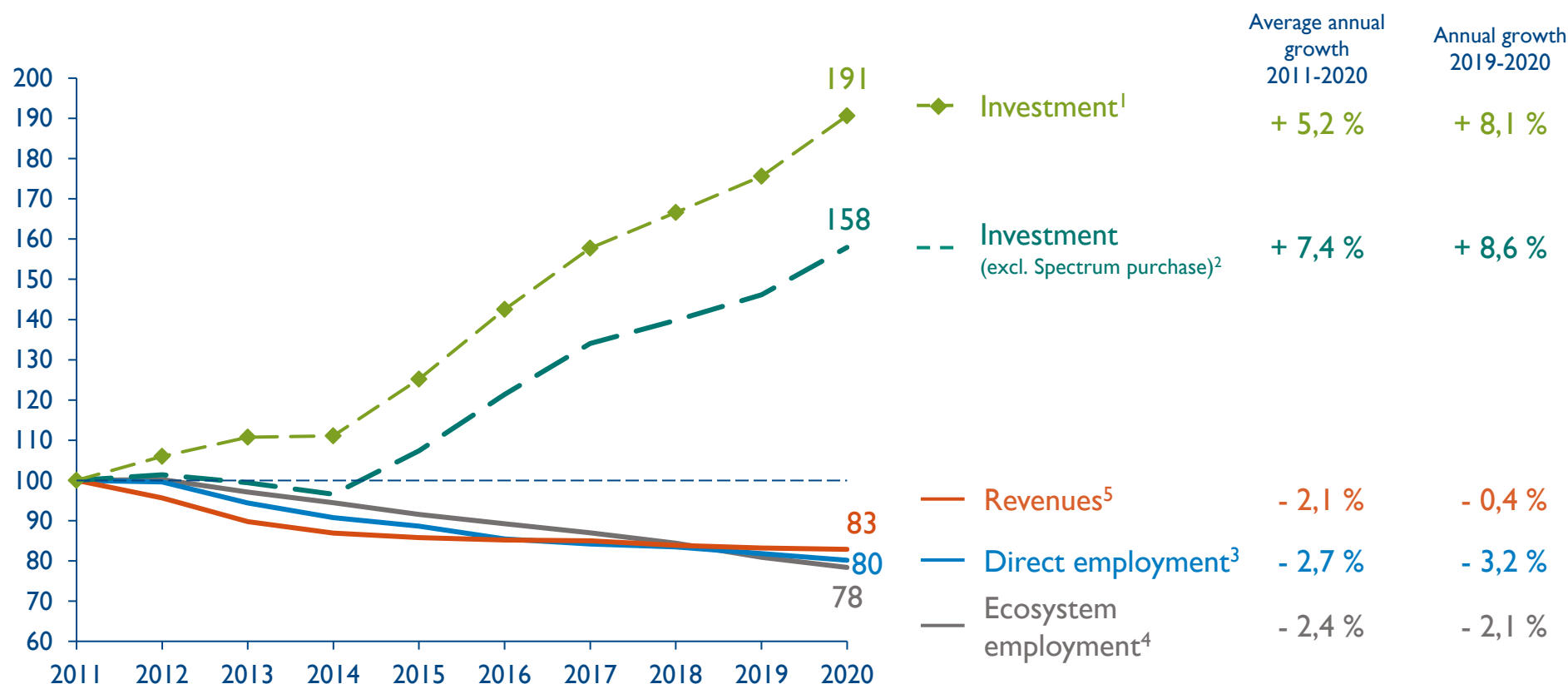
Source: Annual Report, Arthur D. Little

Note: 1) Turnover and CAPEX of telecom operators with a fixed or mobile market share >10%.

Telecom investments keep increasing and have reached their highest level in 10 years

Employment, revenues and investment of Telecom players in France

France, 2011-2020, base 100 in 2011



Source: Arcep, DARES, Insee, Arthur D. Little

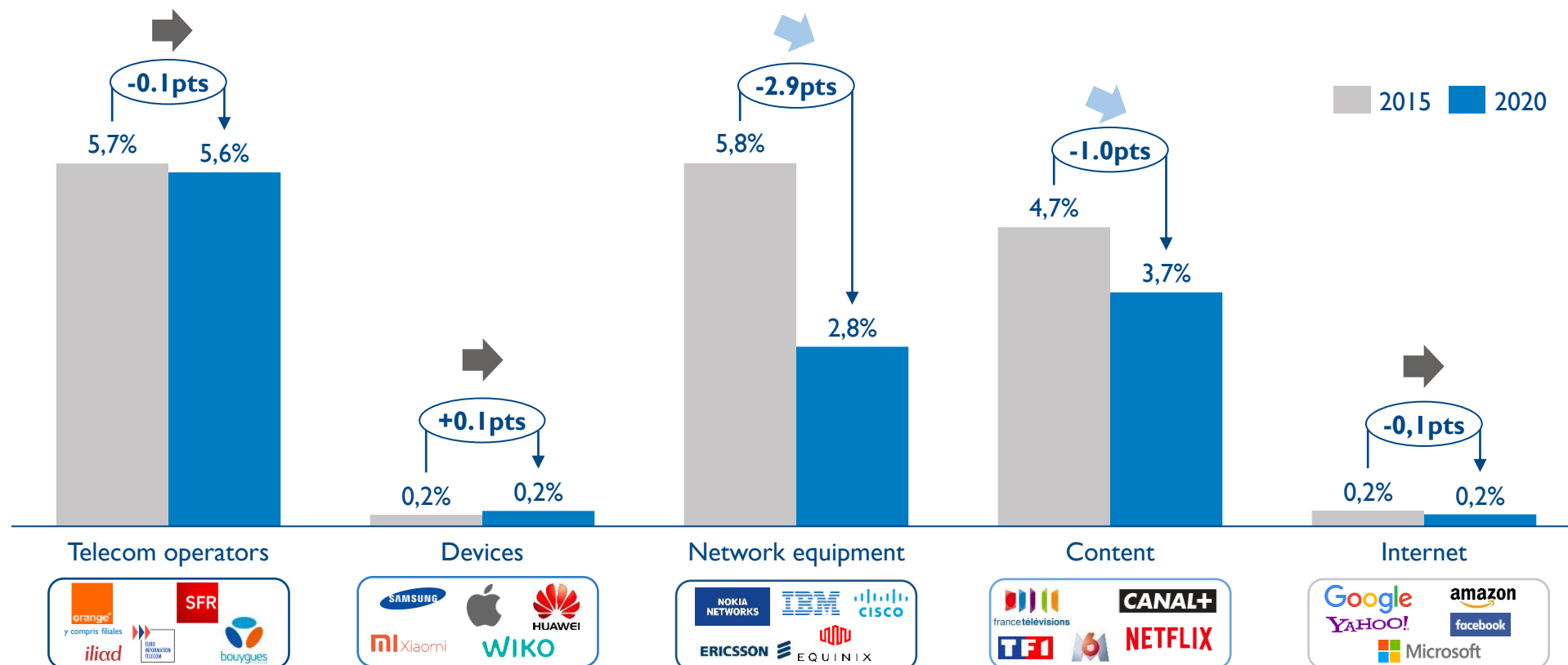
Note: 1) Telecom players investment (excluding spectrum purchase) / revenues, 2) provisionnal Arcep data for 2020,

3) Arcep data, 4) Arcep data including a part of direct employment, 5) provisionnal Arcep data for 2020

The taxation level for telecom operators remains stable while it decreases for other players of the digital ecosystem

Taxation level¹ as a proportion of revenue^{2,3}

For main players in the French digital ecosystem, 2015 vs 2020



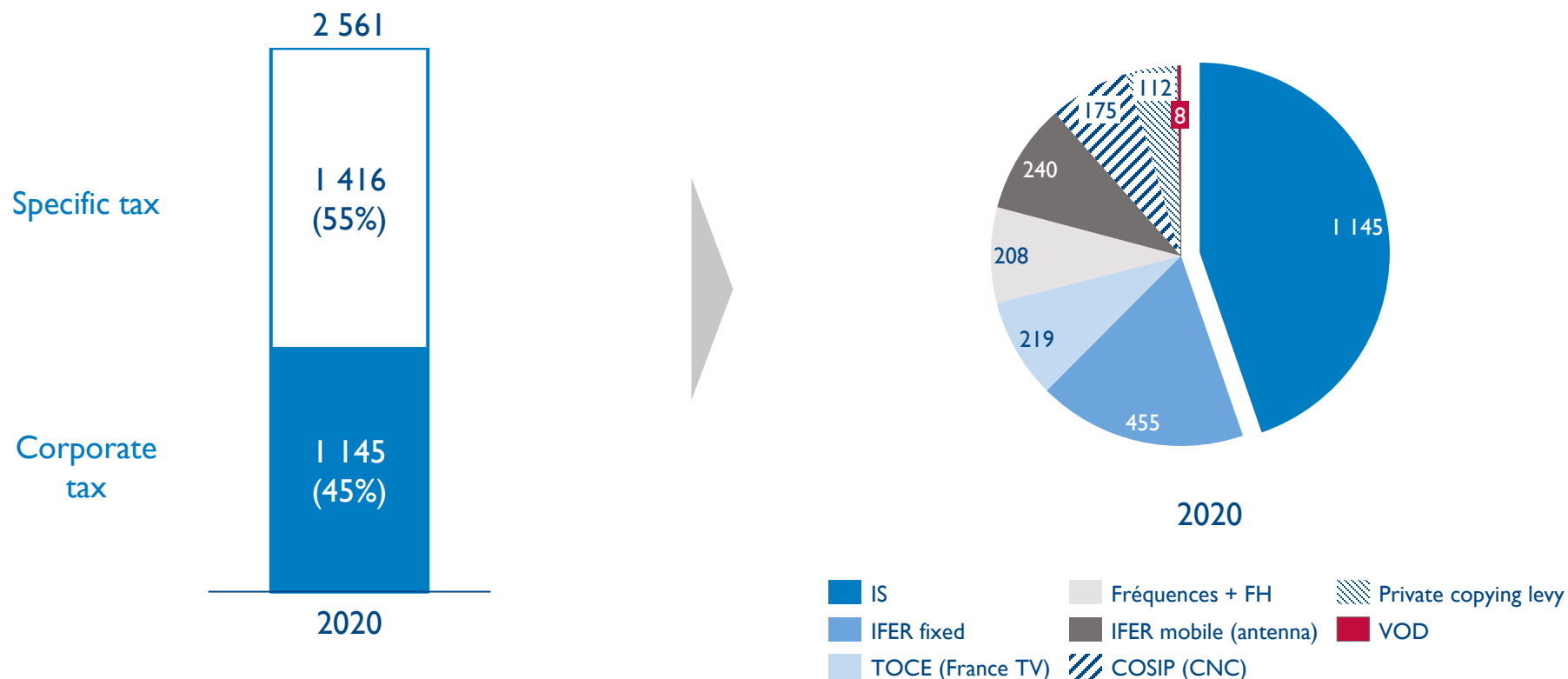
Source: Diane, Annual Reports, Arthur D. Little

Note: 1) Corporate income tax and similar taxes and payments - excluding fines/agreement/adjustments paid by Internet players between 2018 and 2020, 2) Revenue declared in France or documentary research, 3) Data adjusted to take into account the estimated effective revenue of international players in France.

The taxation specific to telecom operators represents a major part of their overall taxation

Telecom operators taxes

France, 2020, million euros and split per tax

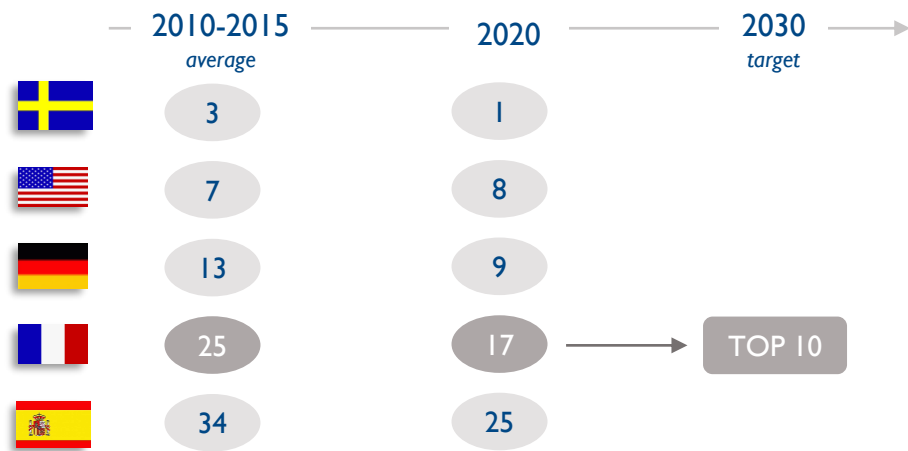


Source: telecom players, Fédération Française des Télécoms, Arthur D. Little

France pursue its investments and aim for a global top 10 ranking on the network readiness index by 2030

Progress and ambition...

Network readiness index*



France progressed on the following criteria:

Criteria	20	vs. 15
Technology	18	+8
Governance	15	+11
People	20	+4
Impact	12	+11

(*): the network readiness index is an index published annually since 2002 by the World Economic Forum in collaboration with INSEAD that aims to measure the degree of readiness of countries to exploit opportunities offered by information and communications technology.

...to be coordinated with public authority

1 Pursue infrastructure deployment

- Generalize optical fiber
- Encourage high speed mobile network (4G and 5G)

2 Reduce deployment constraints

- Act on inconsistent directions between key stakeholders to ease network deployment

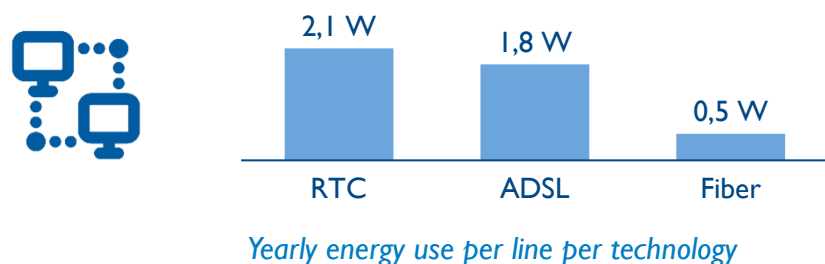
3 Develop usages

- Go on with digitalization of public authority services
- Promote digitalization and high speed network (for both fixed and mobile) for individuals and companies

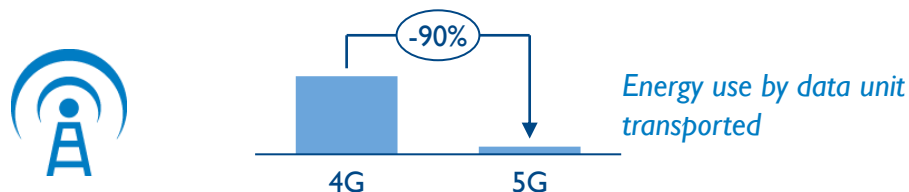
New generation telecom networks and evolution of usages contribute to the ecological transition

An increasing energy efficiency...

Shift to optical fibre divides by 3 the energy use for fixed network



Shift to 5G network increases by 90% energy efficiency for mobile networks



...and a usage substitution

Communication technologies provided by telecom operators enable new usages and encourage the development of responsible behaviour

- I videoconference user reduces its yearly carbon footprint by 4t of CO2

I train journey of 100 000 km, equivalent to 2.5x world tour

- I day per week of remote work represents a saving of 200kg CO2 per worker per year

I 075km by plane, equivalent to a round trip Paris - Toulouse

The telecom industry provides solutions to the environmental challenges and facilitates the ecological transition

Source: APCC, Haut Conseil Climat, étude TeamViewer, ADEME, Arcep, Nokia, Arthur D. Little

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