

# **“The Economics of Telecoms” Report 2013 edition**

**5 December 2013**

**Arthur D. Little for the Fédération Française des Télécoms**

## Agenda

- 1 The telecom sector contributes to shaping the future of the French economy**
- 2 Despite a difficult environment, telecom operators are sustaining their level of investment
- 3 The European approach needs to change to favor investments
- 4 Two issues to deal with as priorities
- 5 Conclusion: For a digital New Deal

### Telecom operators are creating value for the French economy

#### Efficiency improvements for the economic players

##### Consumers



- Strong growth in telecom services usage: **mobile Internet usage has multiplied by 200** since 2006
- **22% price decrease** since 2006

##### Business



- **15% gain in profitability** for SMEs thanks to the telecom sector
- **58% of employees** use mobile connected devices to do 3/4 of their work

##### State



- **In 2012, telecom operators paid 87% of the digital ecosystem's taxes, while OTT players paid only 1%**

#### Multiplier effect on the economy as a whole

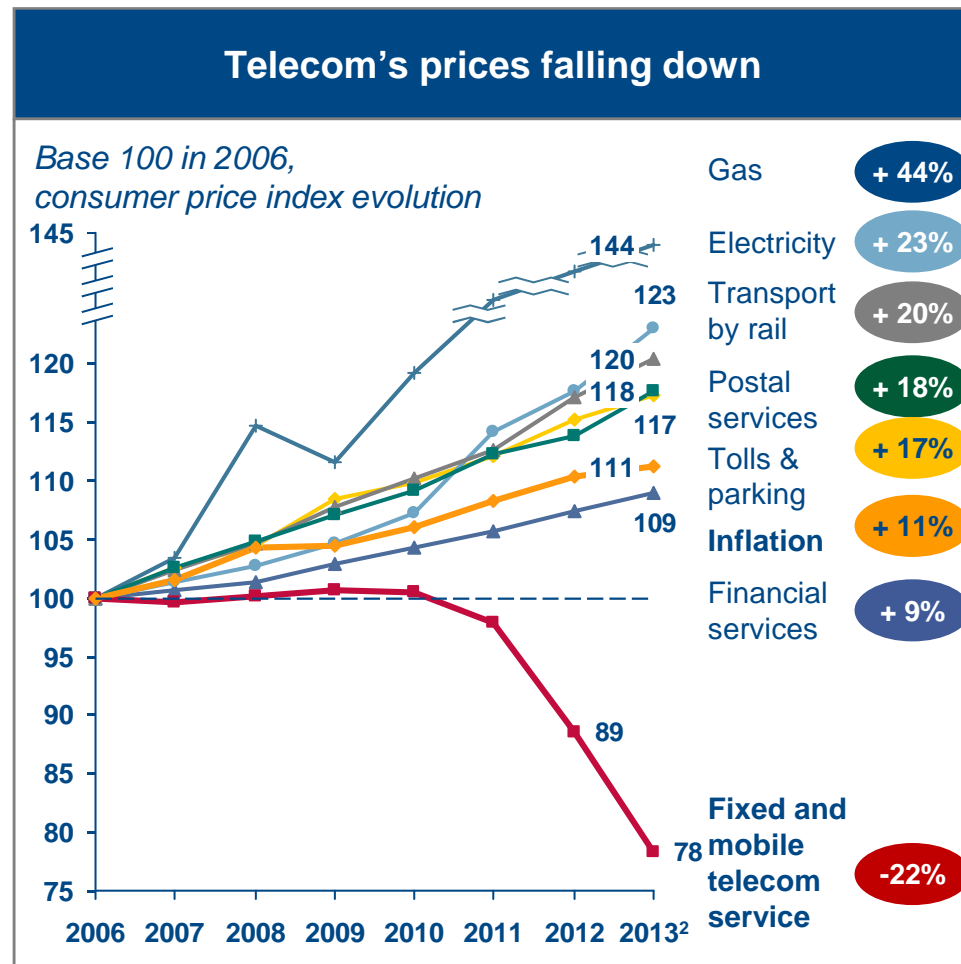
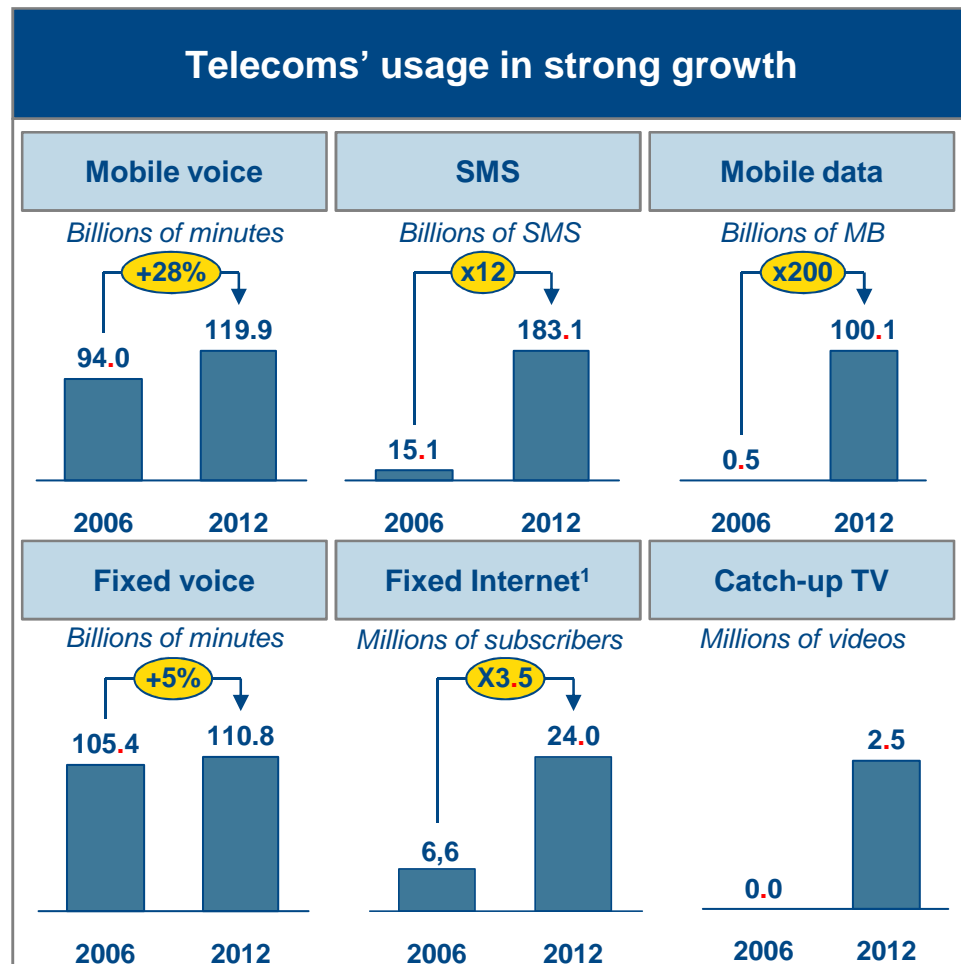
##### Economy



- Telecom operators injected **245 bn€ into the French economy between 2006 and 2012**
- Amounts invested in telecommunication networks generate **6 times more wealth and 3 times more State revenues**
- **Upgrading broadband speed generates positive macroeconomic effects such as:**
  - Time savings and productivity gains
  - Emergence of new players (cloud, catch-up TV, VOD...)
  - Job creation
  - Environmental gains
  - Social welfare

Source: INSEE, ARCEP, SQW, Google, IDC, Arthur D. Little analysis

### Usage of telecommunication services is soaring, while prices are falling down



Source: INSEE, ARCEP, CNC, Arthur D. Little analysis

(1) All Internet access with a minimal speed of 0.128Mb/s  
(2) Average on H1 2013

### Business and administration productivity is supported by the telecom industry

#### Increase of productivity for businesses and employees

**+15%** Profitability gain for SMEs thanks to telecoms:

**+7% cost reduction** (purchasing, marketing)

**+8% revenues increase**  
(new customer segments, increased commercial reach)

**-7%** Reduction of travel costs thanks to telecommunication services (phone, mail, conferences)

**58%** Of employees use mobile connected devices for 3 quarters of their tasks

#### Savings for the French administration

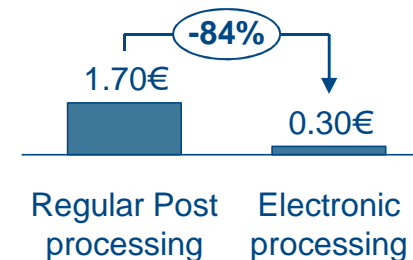
■ **€780m** of savings and increase in revenues per year with the new online tax system

In € millions



■ **€1.5bn** savings per year due to the e-health “Vitale” card

Cost of processing a medical reimbursement, in €



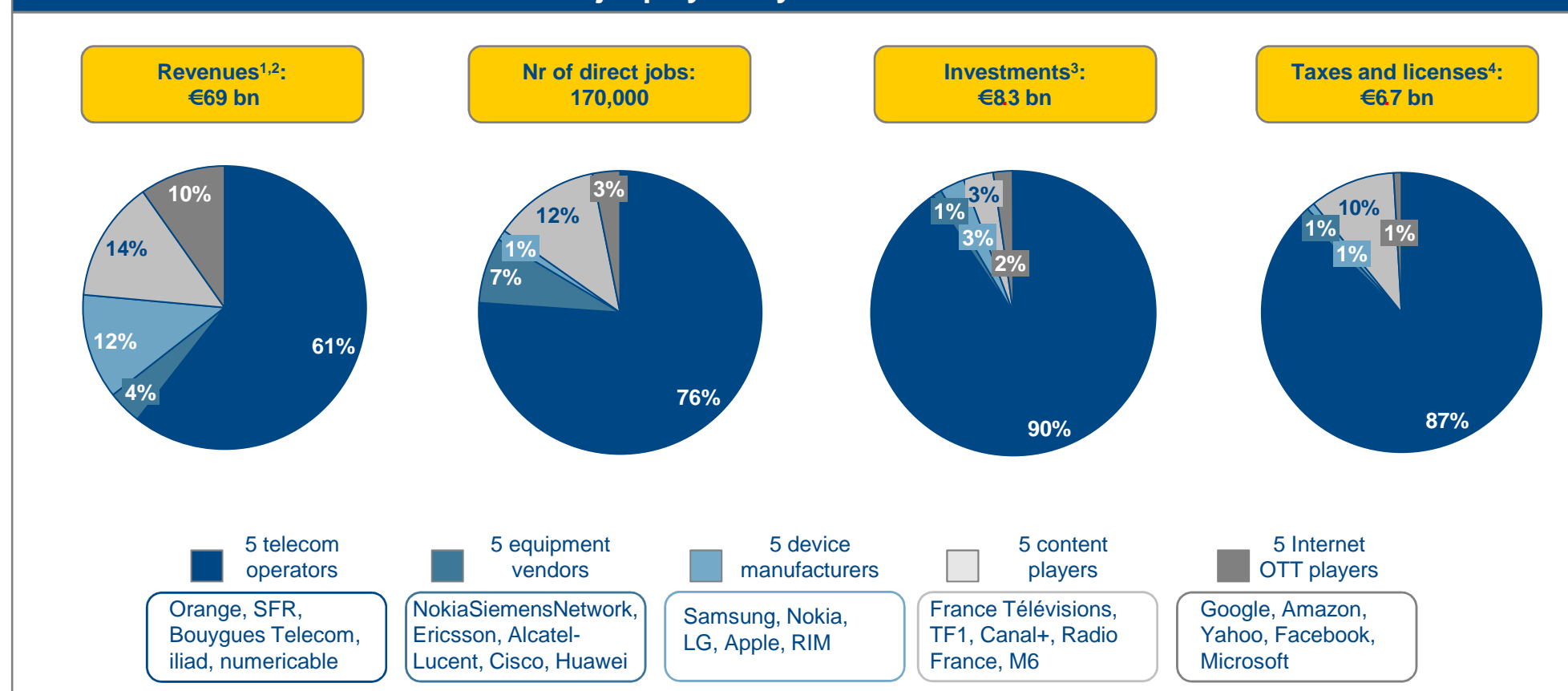
Source: Cisco, Google, IDC, Arthur D. Little analysis

Source: Sénat, Cour des Comptes, INSEE, Arthur D. Little analysis

## 1 Telecoms: shapers of the French economy's future

**In the French digital ecosystem, telecommunication operators account for 90% of investments and 61% of revenues**

**Revenues, jobs, investments and taxes 2012  
of 5 major players by sub-sector in France**



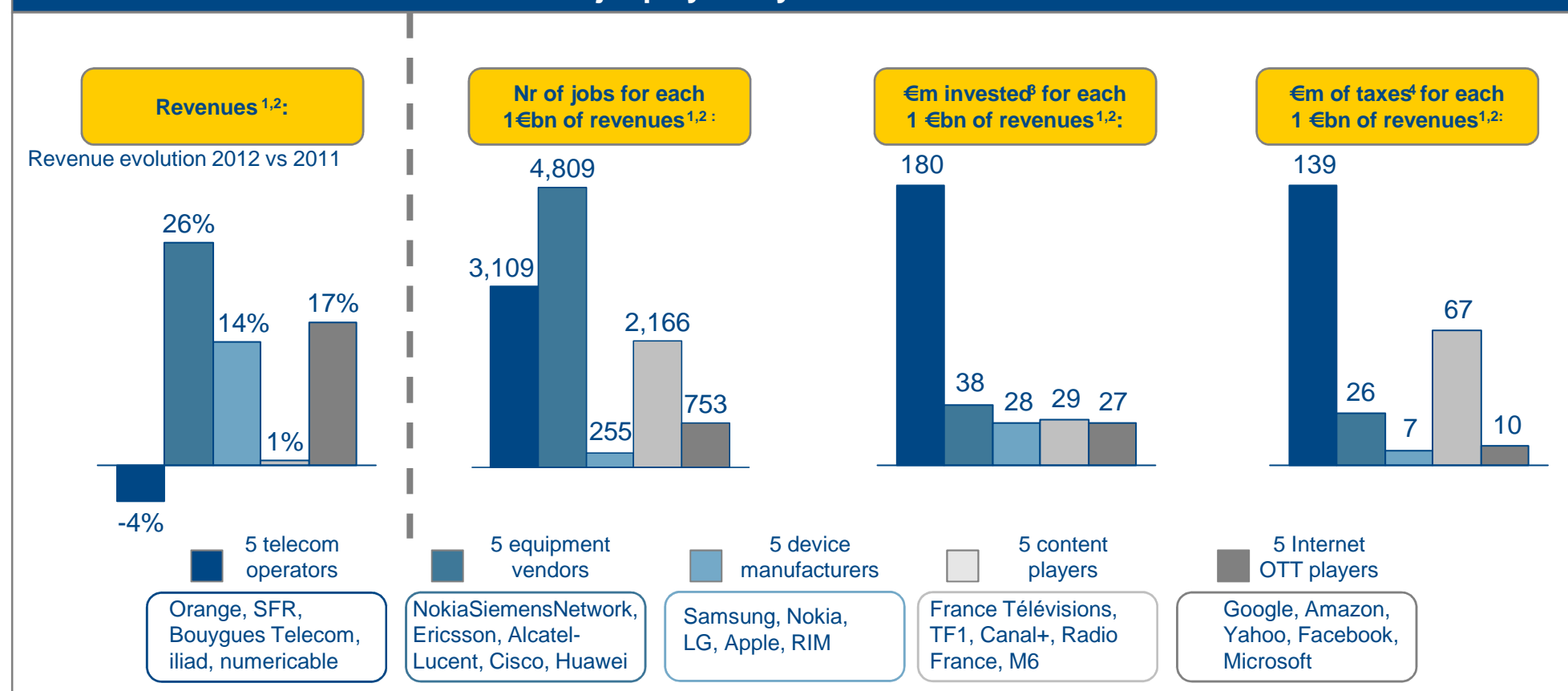
Source: ARCEP, Diane, Reuters, annual reports, Arthur D. Little analysis

(1) Revenue declared or published in the press  
(2) Data adapted to take into account the estimated effective revenues of Internet players in France

(3) Excluding licenses; if data unavailable, estimation based on the number of jobs located in France  
(4) Taxes on businesses, other taxes and assimilated payments excluding VAT and licenses

### The contribution of telecom operators to the economy is more important than the contribution of other players in the digital ecosystem, despite decreasing revenues

Evolution of revenues compared to 2011—Jobs, investments and taxes for 1bn€ of revenues 2012 of 5 major players by sub-sector in France

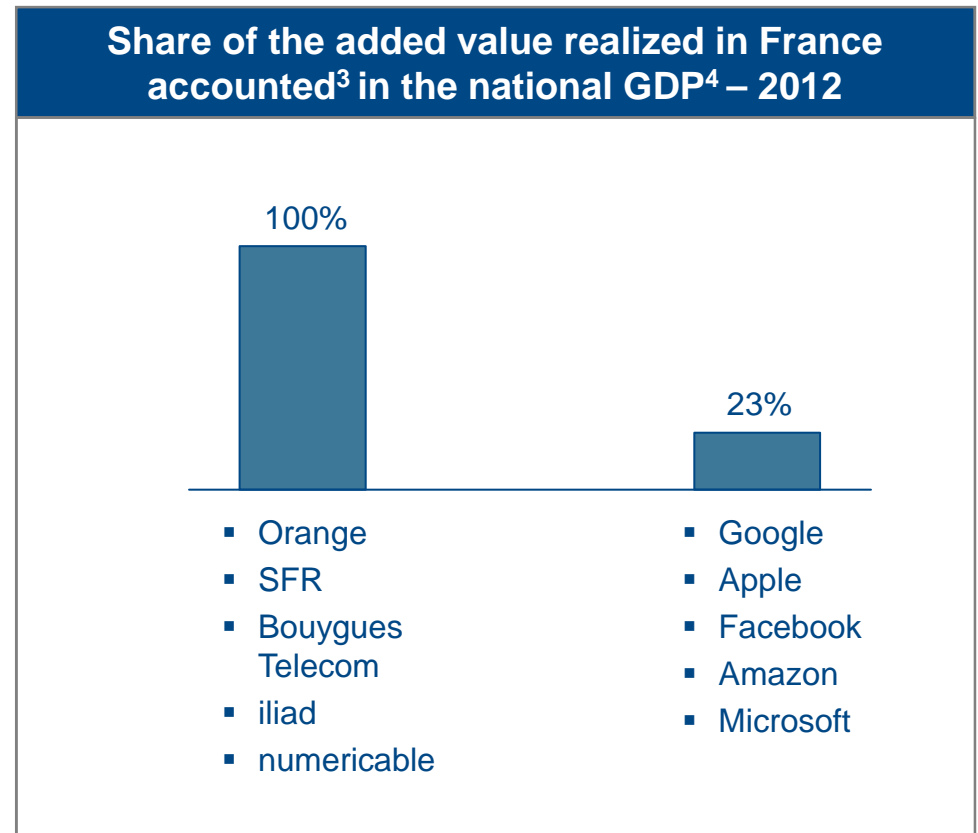
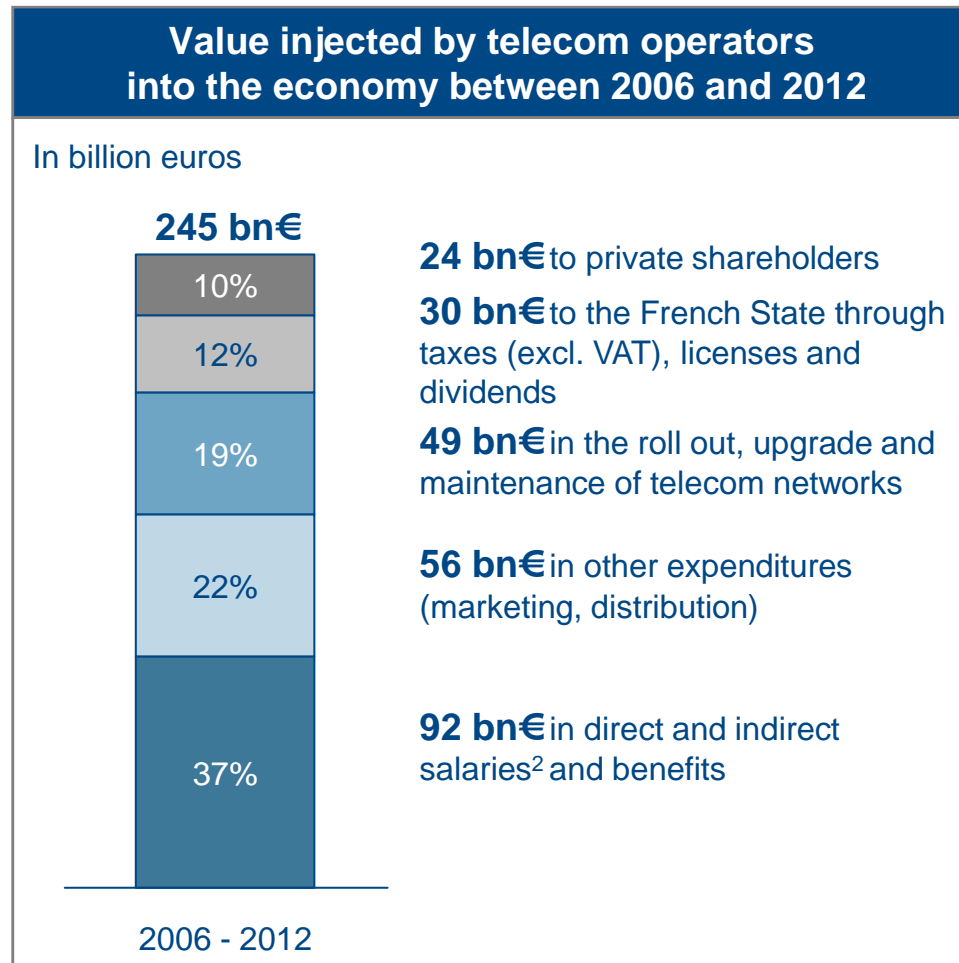


Source: ARCEP, Diane, Reuters, annual reports, Arthur D. Little analysis

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### Telecom operators contribute heavily to France's GDP growth, unlike the "GAFAM"<sup>1</sup>



**3/4 of the added value realized in France by the "GAFAM"<sup>1</sup> are not accounted for in the French GDP growth**

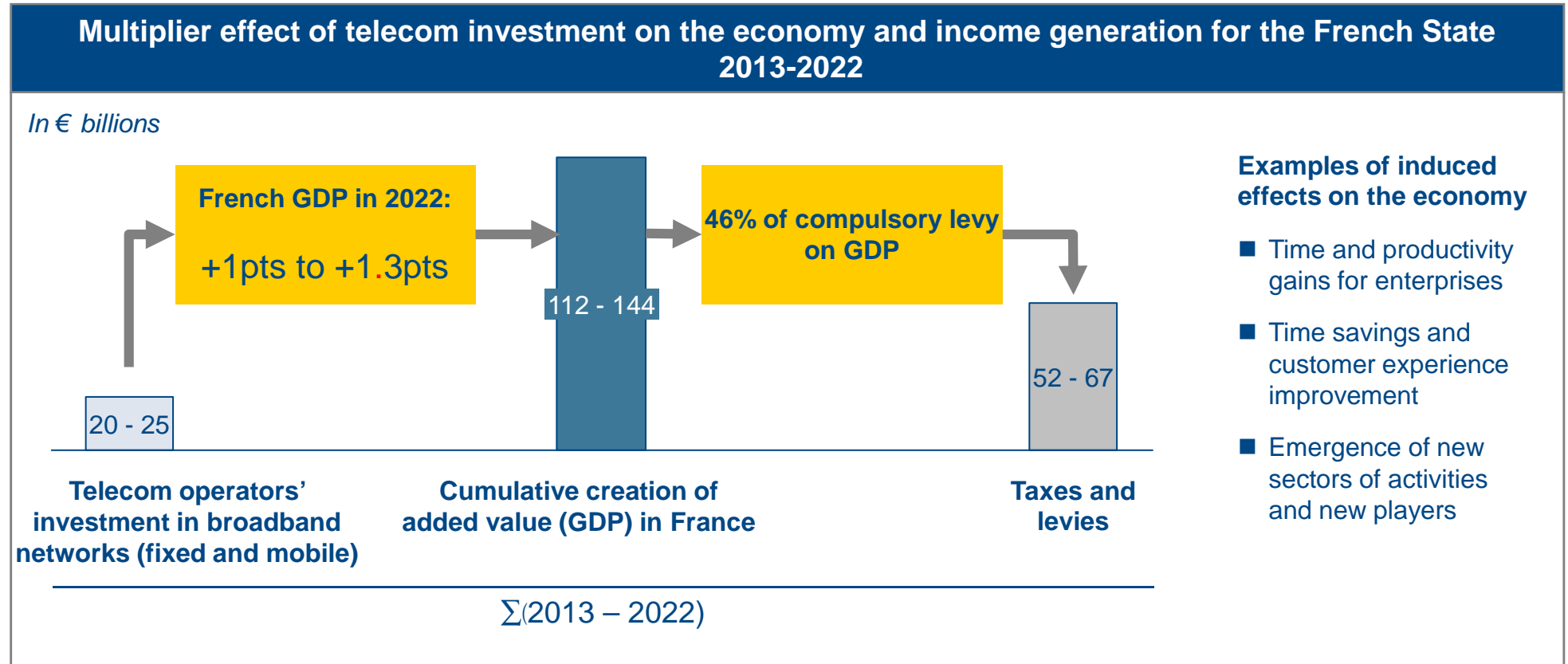
Source: Diane, annual reports, press, Arthur D. Little analysis

(1) Google, Apple, Facebook, Amazon, Microsoft  
 (2) Including wages and social charges  
 (3) Declared added value compared to estimated added value  
 (4) GDP = sum of declared added value in France



## 1 Telecoms: shapers of the French economy's future

### Telecoms have a multiplier effect on the economy, as telecom investment yields 6 times the amount invested for the French economy



**1 euro invested in broadband networks creates 6 euros of GDP, which represents 3 euros of revenue for the State**

Source: INSEE, IDATE, ARCEP broadband observatory, Arthur D. Little Ericsson Chalmers university of technology "Socioeconomic effects of broadband speeds", French State finance law project 2013 report on compulsory levy and their evolution, Arthur D. Little analysis

## 1 Telecoms: shapers of the French economy's future

### The existence of reliable infrastructures fosters the emergence of innovative players, leaders in their markets

Sectors	Leaders
Payment	<b>GEMALTO:</b> Global leader of smart cards <b>Oberthur Technologies:</b> 2 <sup>nd</sup> player of smart cards worldwide <b>Ingenico:</b> Global leader of EPT <sup>(1)</sup>
Transport	<b>Coyote:</b> Leader of driving assistance systems in France <b>Wikango</b> <b>Inforad</b>
Animation	<b>MAC GUFF</b> <b>Les Armateurs</b> <b>Folimage</b> <b>Autochenille</b> World's 3 <sup>rd</sup> in animation industry
Computer-aided design	<b>Dassault Systemes</b> Global leader of 3D conception
E-commerce	<b>vente-privee.com</b> European leader of events sales <b>discount.com</b> 2 <sup>nd</sup> e-commerce website in France

Sectors	Leaders
Music	<b>Deezer</b> Leader of online music listening services <sup>(2)</sup> in France
Video	<b>Dailymotion</b> 2 <sup>nd</sup> biggest video platform in the world <b>VLC</b> Most downloaded software in France
Video games	<b>Ubisoft</b> European leader of video games <b>Gameloft</b> French leader of mobile gaming
Dating sites	<b>Meetic</b> European leader of dating sites
Professional social networks	<b>Viadeo</b> French leader of professional social networks

Source: FEVAD, Companies, press, Arthur D. Little analysis

- (1) EPT: Electronic payment terminals  
 (2) Ranking in number of paying users for streaming services or podcasts, excluding direct download

## Agenda

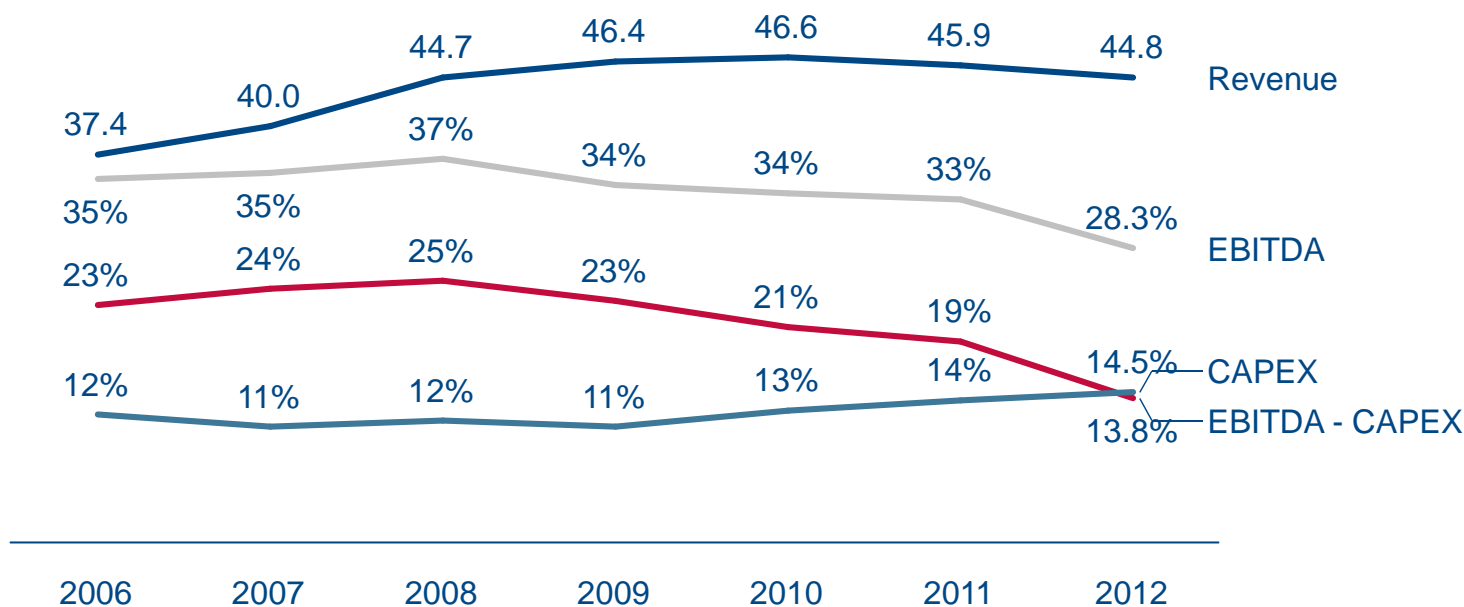
- 1 The telecom sector contributes to shape the future of the French economy
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### Despite lower revenues and margins, telecom operators continue to invest significantly

Evolution of revenue, EBITDA, CAPEX and cash flows  
- telecom operators in France<sup>1</sup> -

In billion euros

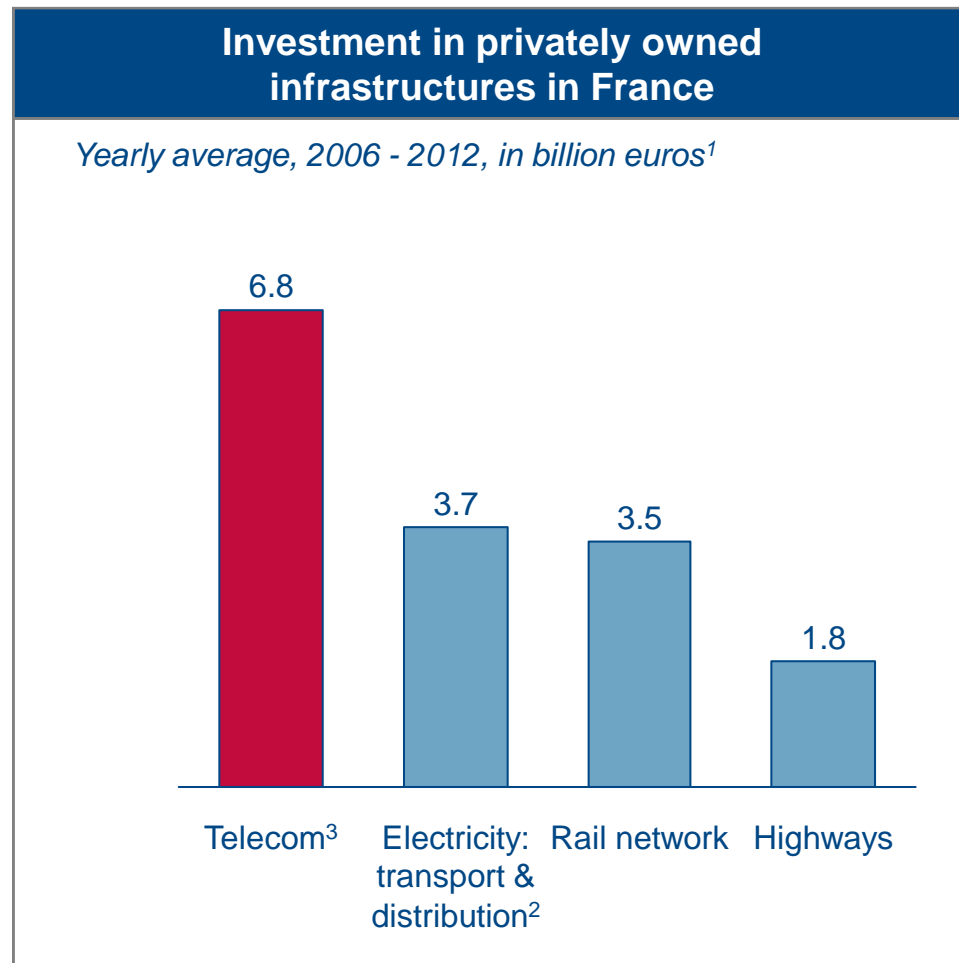
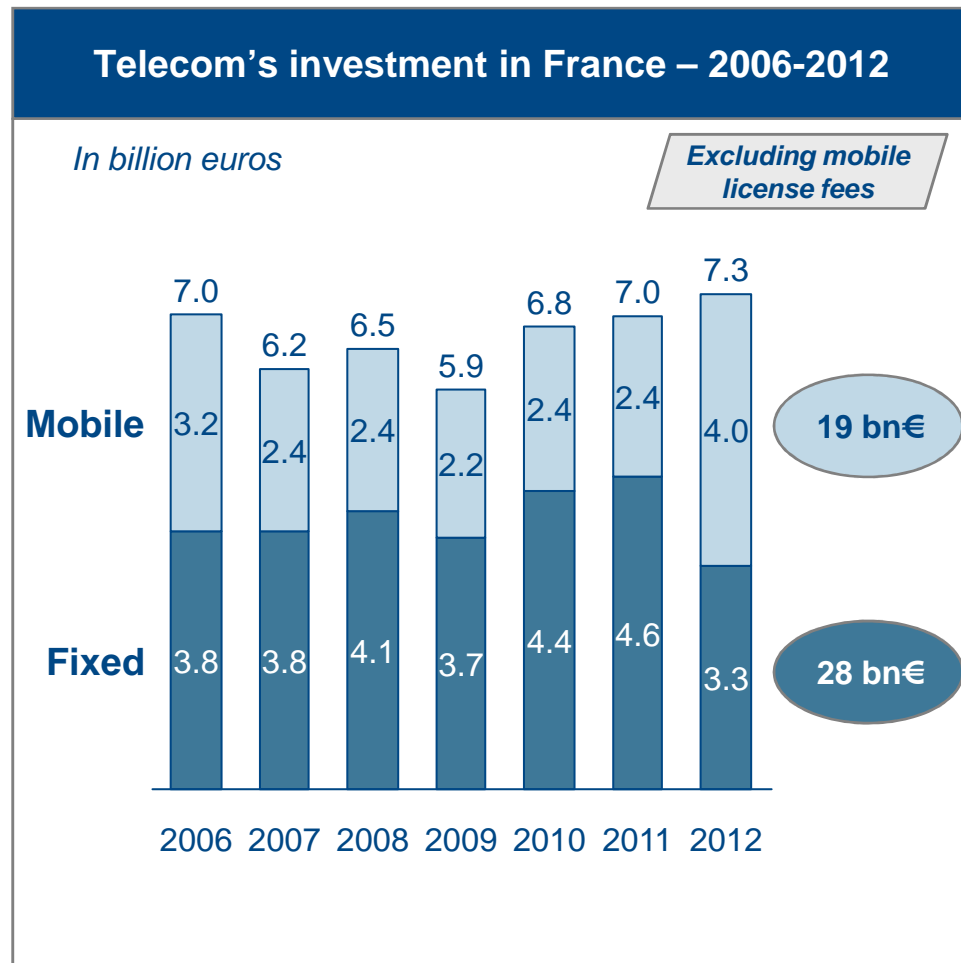
In percentage of revenue



Source: ARCEP, Diane, annual reports, operators' communication,  
Arthur D. Little analysis

(1) Atos Worldline, Bouygues Telecom, Breizh mobile, BT, Casino Mobile, CIC Mobile, Cofidis Mobile, Colt France, Crédit Mutuel Mobile, DartyBox, Hub Telecom, Iliad, La Poste Mobile, M6 Mobile, Naxos, Numericable, NRJ Mobile, Orange-France Télécom, Prosodie, SFR, Télé 2 mobile, Universal Mobile, Verizon Business, Virgin Mobile, Wifirst

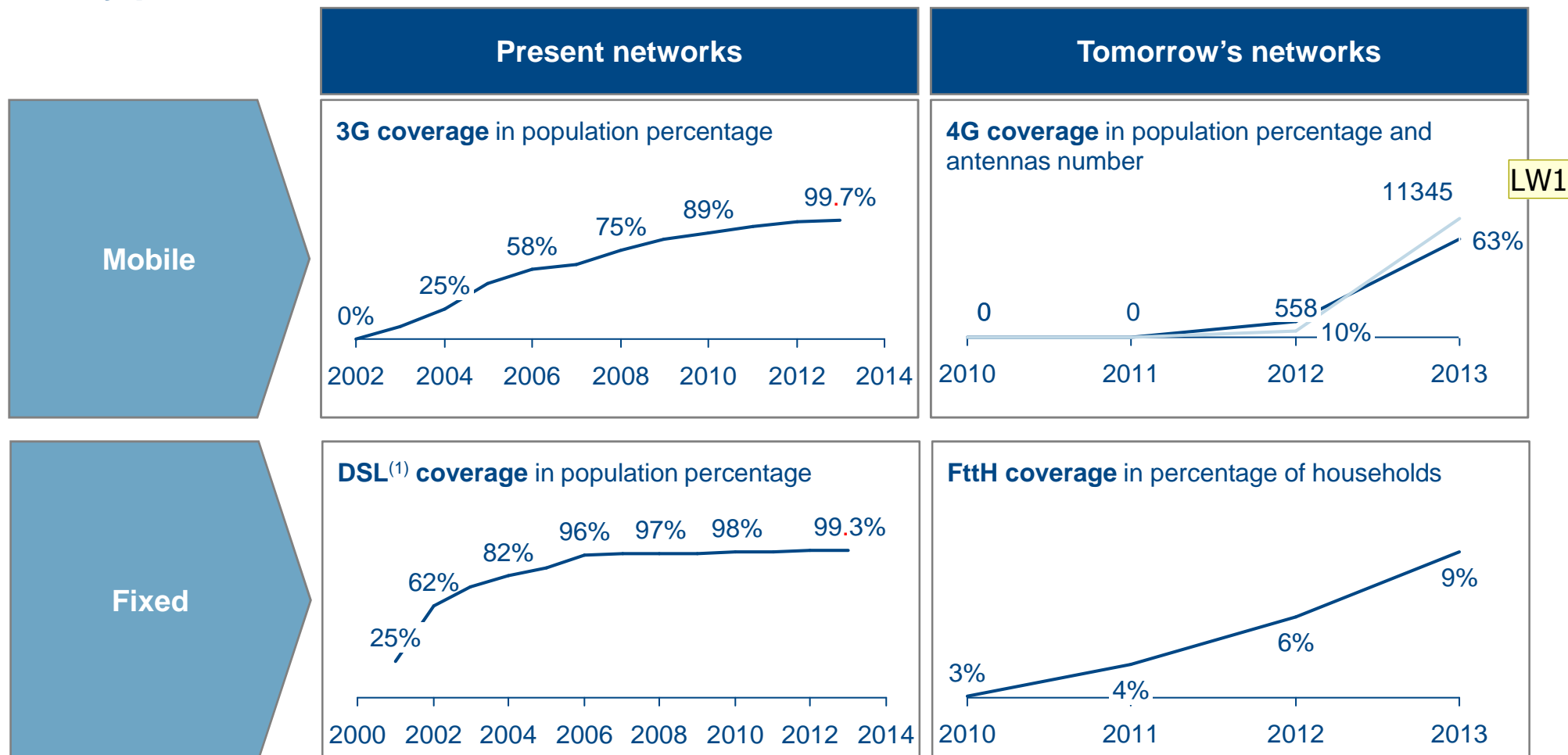
### Telecom's investment level in France reached a new record in 2012, far above that of other private infrastructure networks



Source: "Association des Sociétés Françaises d'Autoroutes" (ASFA), RFF, RTE, ERDF, ARCEP, Diane, Reuters, annual reports, Arthur D. Little analysis

(1) Telecoms: Orange, SFR, Bouygues Telecom, Iliad, Numéricâble; Electricité: RTE et ERDF; Réseau Ferré de France: statut d'EPIC; Autoroutes: ASFA (Sanef, SAPN, ASF....)  
 (2) Average for 2008-2012  
 (3) Excluding mobile license fees

### Telecom operators have rolled out high-quality networks and are now investing at a steady pace in tomorrow's networks



Source: ARCEP, ANFR, operators' communication, Arthur D Little analysis

(1) Digital Subscriber Line

## Slide 14

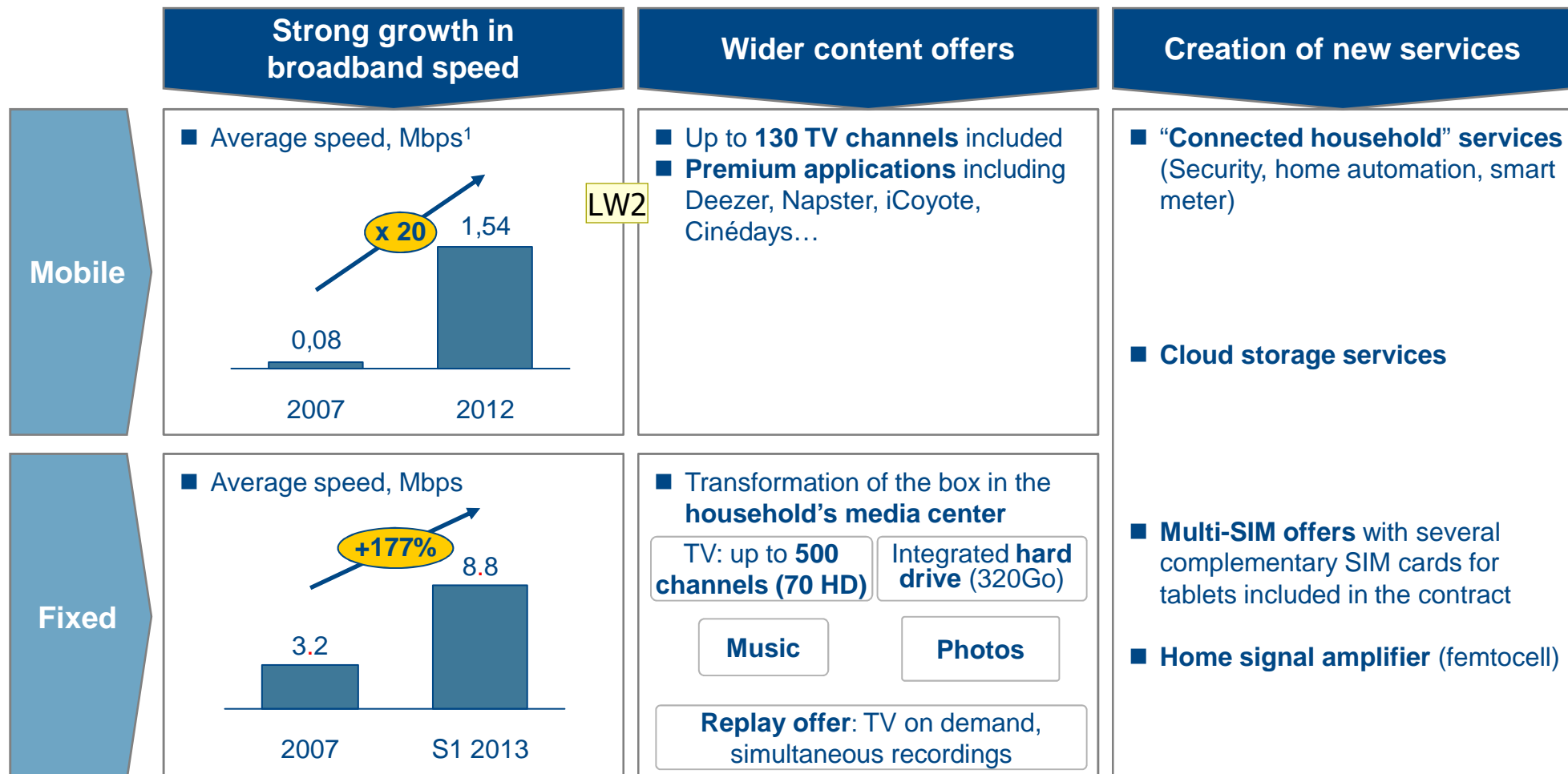
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**LW1**

Can't edit this chart - the number 11345 needs a comma added after the 11.

Lindsay Wilson; 04.01.2015

### Operators are offering growing broadband speeds and widening their content offers



Source: Opérateurs, ARCEP, Akamai, Degrouptest, Arthur D Little analysis

(1) Download speed reached for 90% of the measures on the best-sold smartphones



## Slide 15

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**LW2**

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Lindsay Wilson; 04.01.2015

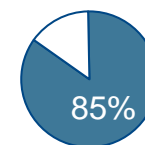
### Thanks to investment in broadband networks, telecom operators improve the customer experience and support the development of the usage of telecom services

#### Case of Palaiseau FttH<sup>(1)</sup> connected city

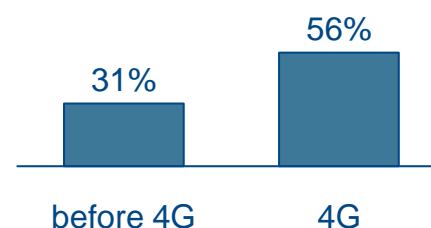
- **90% of households are eligible for a FttH<sup>(1)</sup> 100Mbps connection**
- **Strong growth in the use of services**
  - **x3** on the **volume of downloaded data**
  - **x3** on the consumption of **video on demand**
  - **x3** on customers subscribing to **paying TV**
  - **x7** on the consumption of **catch-up TV**
- **Stronger interactivity**
  - **x8** on the volume of **uploaded data**
  - **Reduction of the asymmetry** between upload and download

#### 4G impact on customers' comfort

- **Gain in time in everyday life:**  
Percentage of users in France saying that 4G helps them save time



- **Usage increase**  
Percentage of users in France using video conference services



- **New services**

Mobile  
HD TV

HD  
Video call

Instant  
navigation

Augmented  
reality

Source: TNS, operators, press (zdnet, clubic), Arthur D. Little analysis

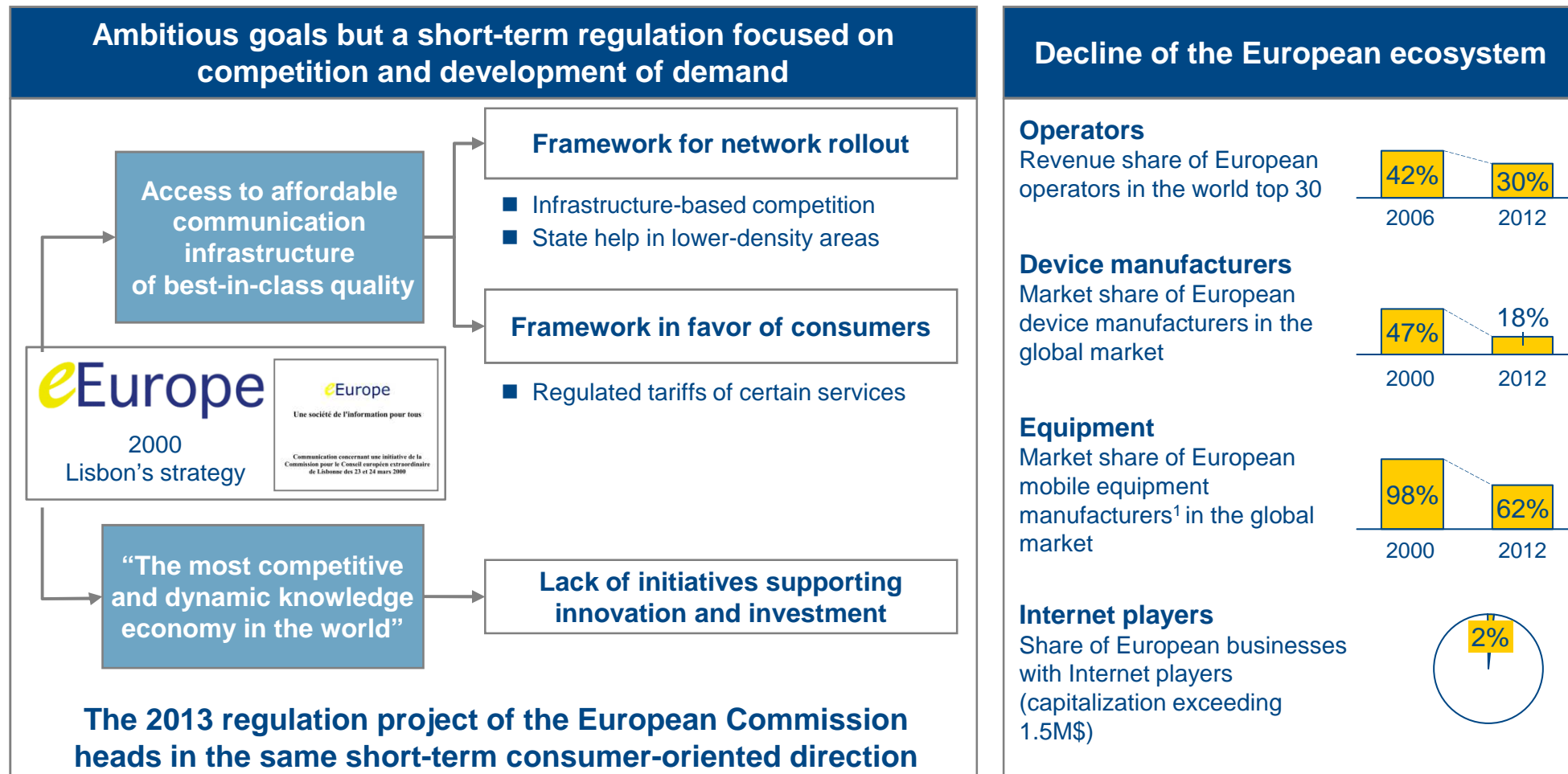
(1) Fiber to the Home

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## 3 Favoring investment through a different European approach

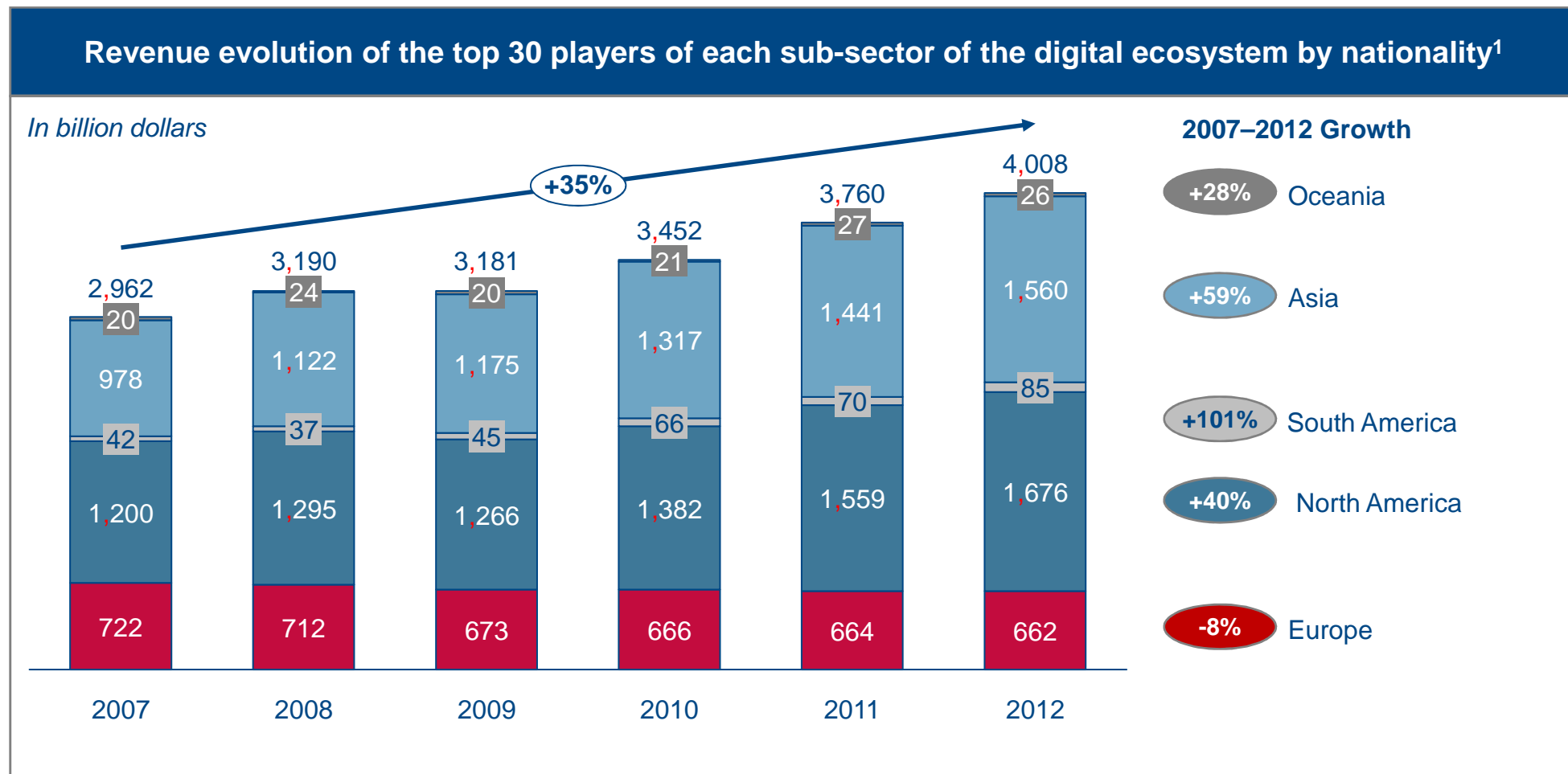
### The European approach towards the digital sector has contributed to the industrial decline of the continent



Source: European council communication regarding Lisbon's initiative March 23<sup>rd</sup>, IDC, CGSP, BoA-Merrill Lynch, Thomson Reuters, equipment manufacturers' annual reports, Arthur D. Little analysis

## 3 Favoring investment through a different European approach

### The growth in other geographical areas shows that Europe's decline is not a fatality

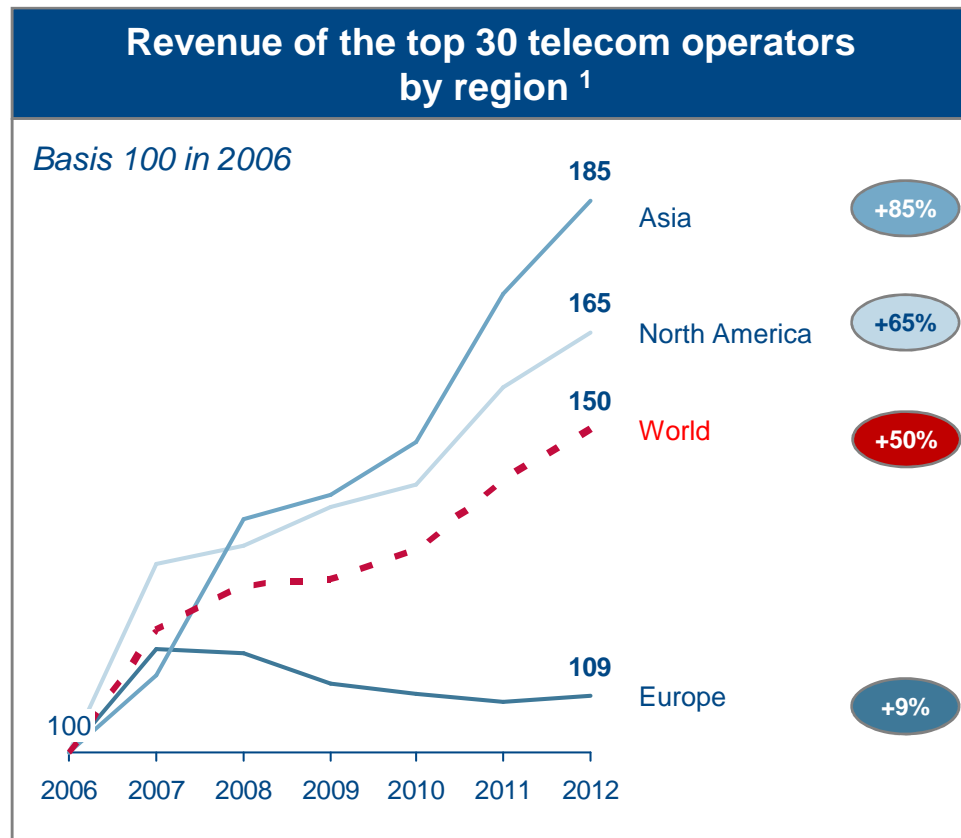


Source: Thomson Reuters, Arthur D. Little analysis

(1) Top-30 players according to their revenue in each sub-sector: Content, software, network equipment, Internet players, telecom operators  
Players are classified according to the nationality of their head office 19

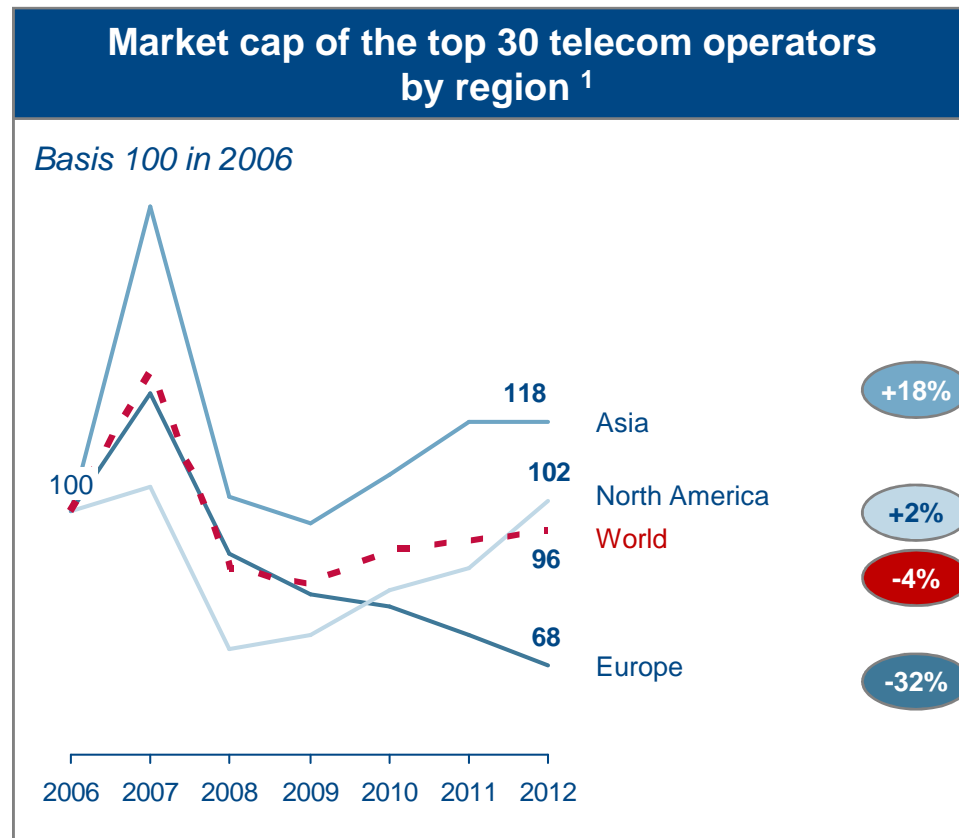
## 3 Favoring investment through a different European approach

Unlike in other regions, European telecom operators have hardly grown in 6 years, which resulted in a sharp drop in value



▶ European telecom revenue growth is **7 to 9 times lower** than that in Asia and North America

Source: Thomson Reuters, Banque mondiale, Arthur D. Little analysis

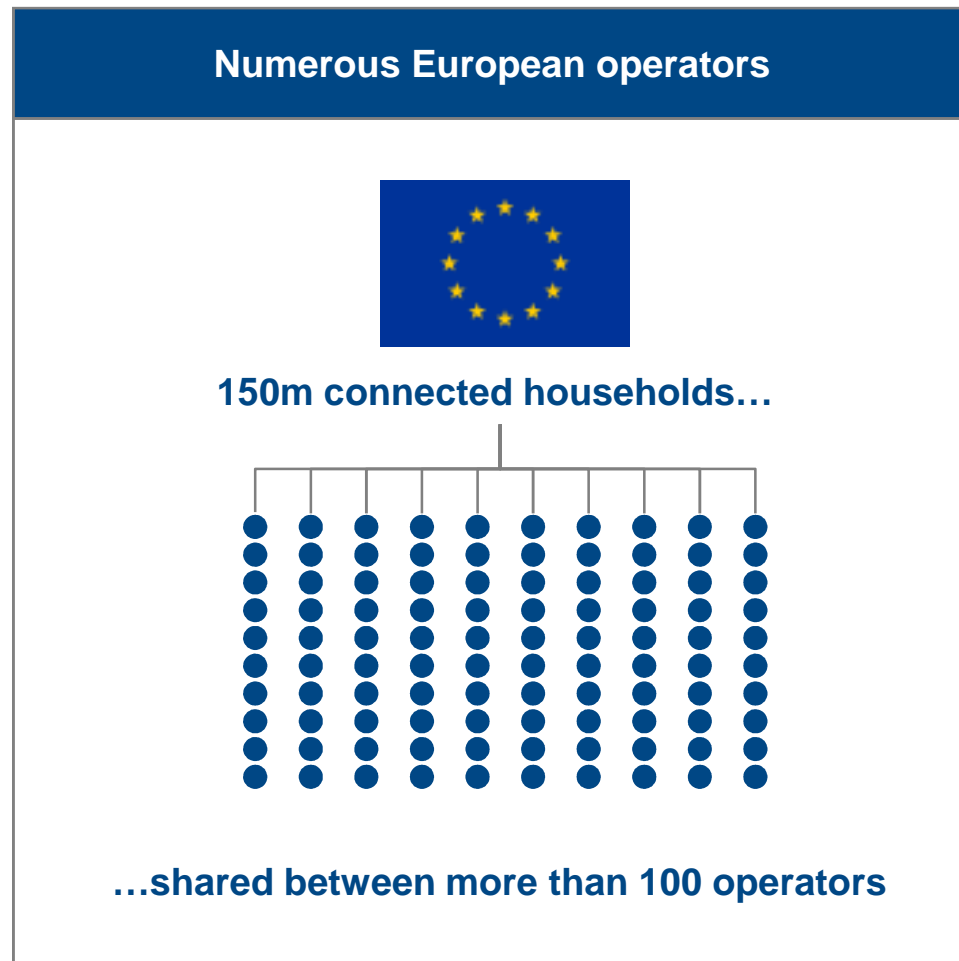
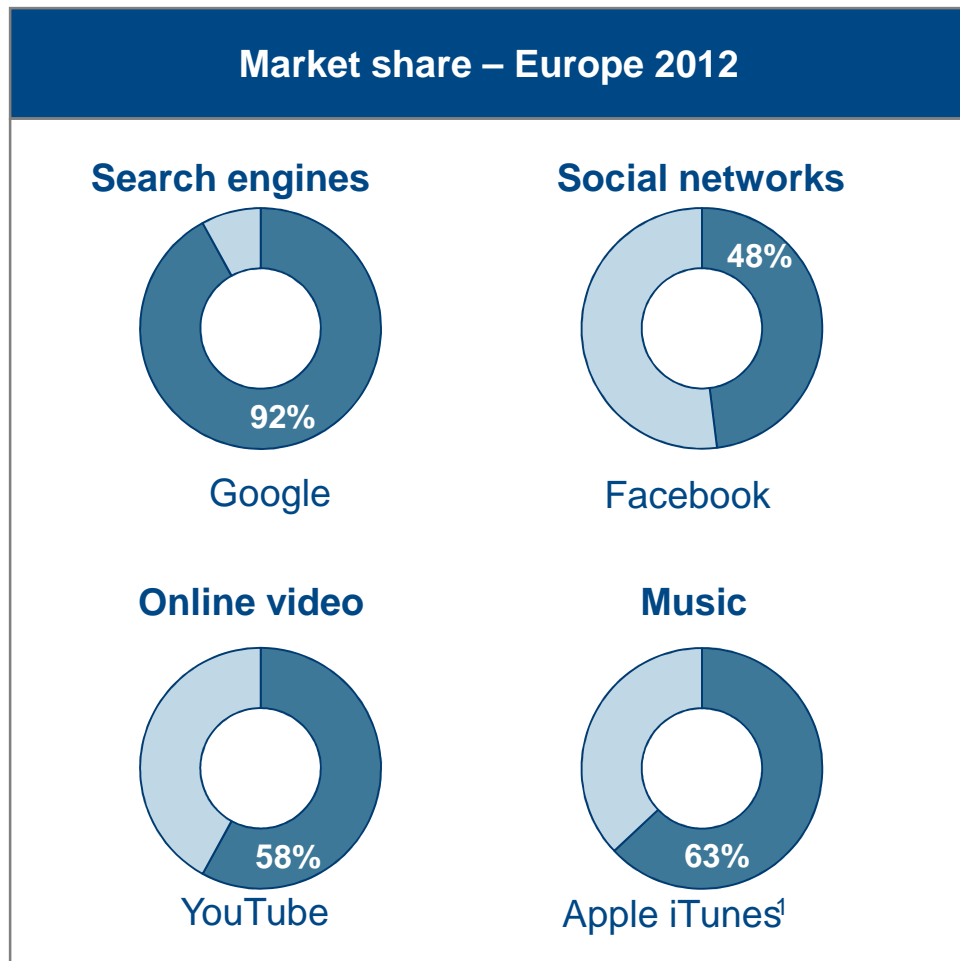


▶ European telecom value shrank by **32%** between 2006 and 2012

(1) Top 30 players according to their revenues  
Players are classified according to the nationality of their head offices; revenue growth of Australian and South American players are respectively 52% and 162%

## 3 Favoring investment through a different European approach

**In their core markets, OTT players enjoy strong positions while facing numerous operators**



























Source: Comscore, NPD Group, Nielsen, analyse Arthur D. Little

Note: 1) Market share in number of users except music(revenues)

(1) Market share worldwide

## 3 Favoring investment through a different European approach

### Europe has seen only a few leading companies emerge in digital services

Market	Top 3 <sup>1</sup>	Nationality	Market	Top 3 <sup>1</sup>	Nationality
Smartphones	Samsung Apple Huawei	  	Video on demand <sup>3</sup>	Netflix hulu iTunes	  
VoIP <sup>2</sup>	Skype Viper fring	  	Social networks	Facebook Twitter Weibo	  
Search engines	Google Yahoo Baidu	  	Music <sup>4</sup>	iTunes Spotify Soundcloud	  
Video platforms	YouTube Dailymotion metacafe	  	Cloud solutions	iCloud dropbox SkyDrive	  

**Apart from a few notable exceptions (Dailymotion, Spotify), the majority of companies in digital services stem from America or Asia**

Source: Strategy Analytics, Netmarketshare, Alexa, eBizMBA, Cloud services Review, Soundcloud, Analysys Mason, Techcrunch, Arthur D. Little analysis

- (1) Ranking according to the number of users
- (2) Voice over Internet Protocol
- (3) Legal downloading platform (iTunes) or paying services (ex: Netflix, Hulu)
- (4) Ranking according to the number of paying users for web radio or streaming services



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## 4 Two issues to deal with as priorities

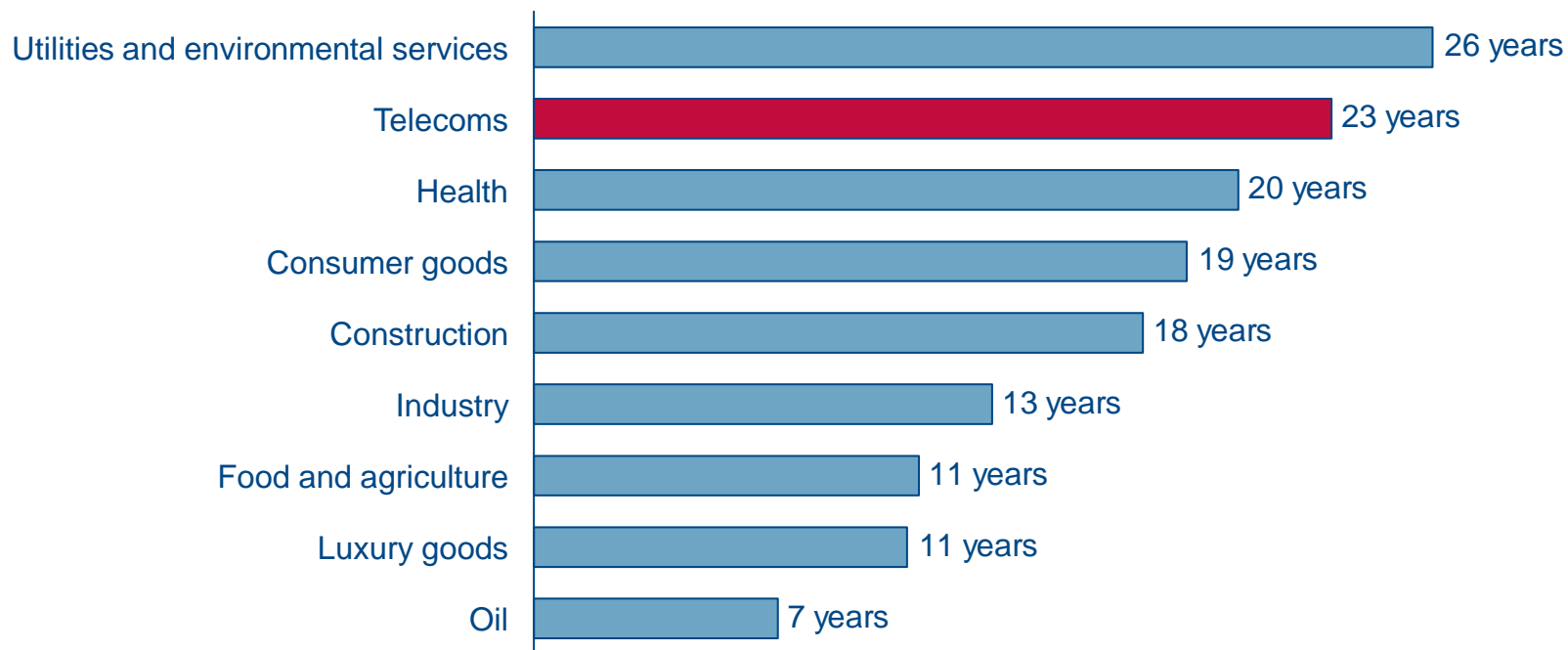
- 1** No long-term strategic vision  
in favor of investment
- 2** Loss of leadership of Europe and France  
in the digital ecosystem

## 4 Two issues to deal with as priorities

### 1 The telecom sector bears heavy and long-term investment requirements

#### Return on investment timeframe for various business sectors<sup>(2)</sup> – 20 largest CAC40 companies, 2013

*Estimated minimal period for return on investment (1 / ROCE<sup>(1)</sup>), in years*

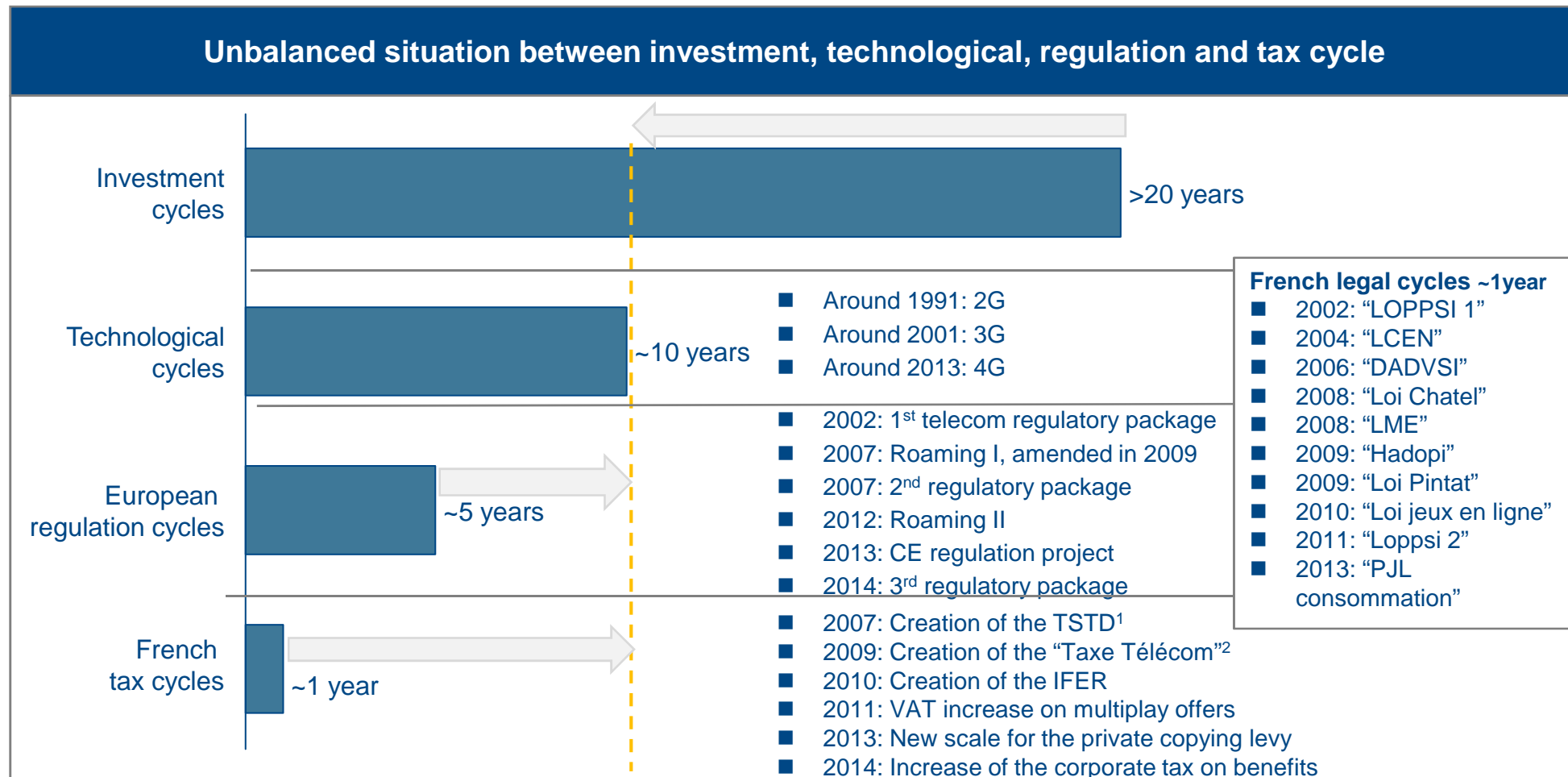


Source: Thomson Reuters, Arthur D. Little analysis

(1) ROCE: return on capital employed is the ratio between income and invested capitals, (EBIT/capital employed)

## 4 Two issues to deal with as priorities

### 1 Legal and regulatory cycles are not in line with the long cycles of telecom investment

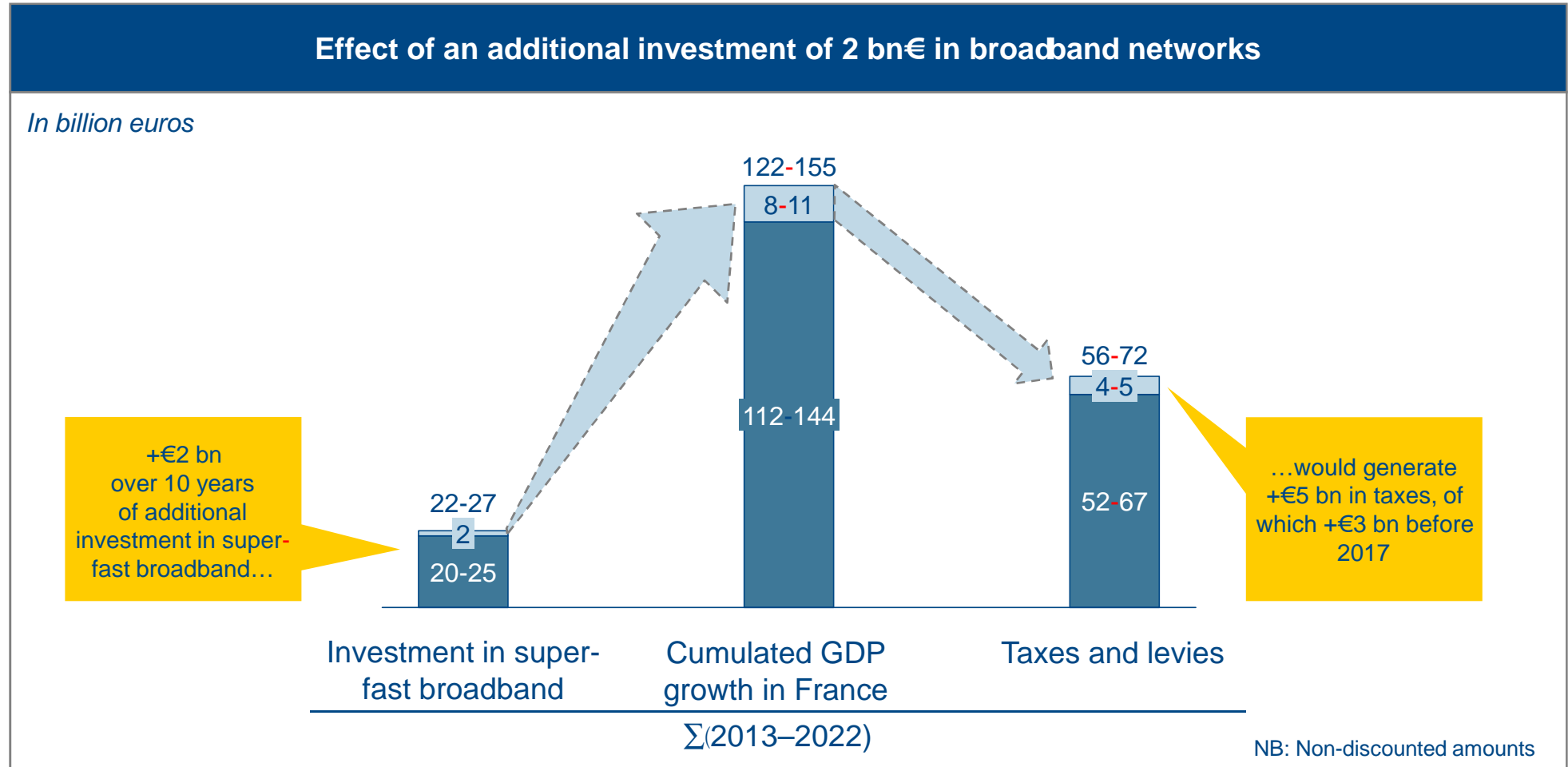


Source: operators, ARCEP, European commission,  
Journal Officiel, infinancials, FFT  
Thomson Reuters, Arthur D. Little analysis

(1) Tax on television services  
(2) Tax based on operators' revenues financing French public television  
NB: For technological cycles, licenses' attribution in France

## 4 Two issues to deal with as priorities

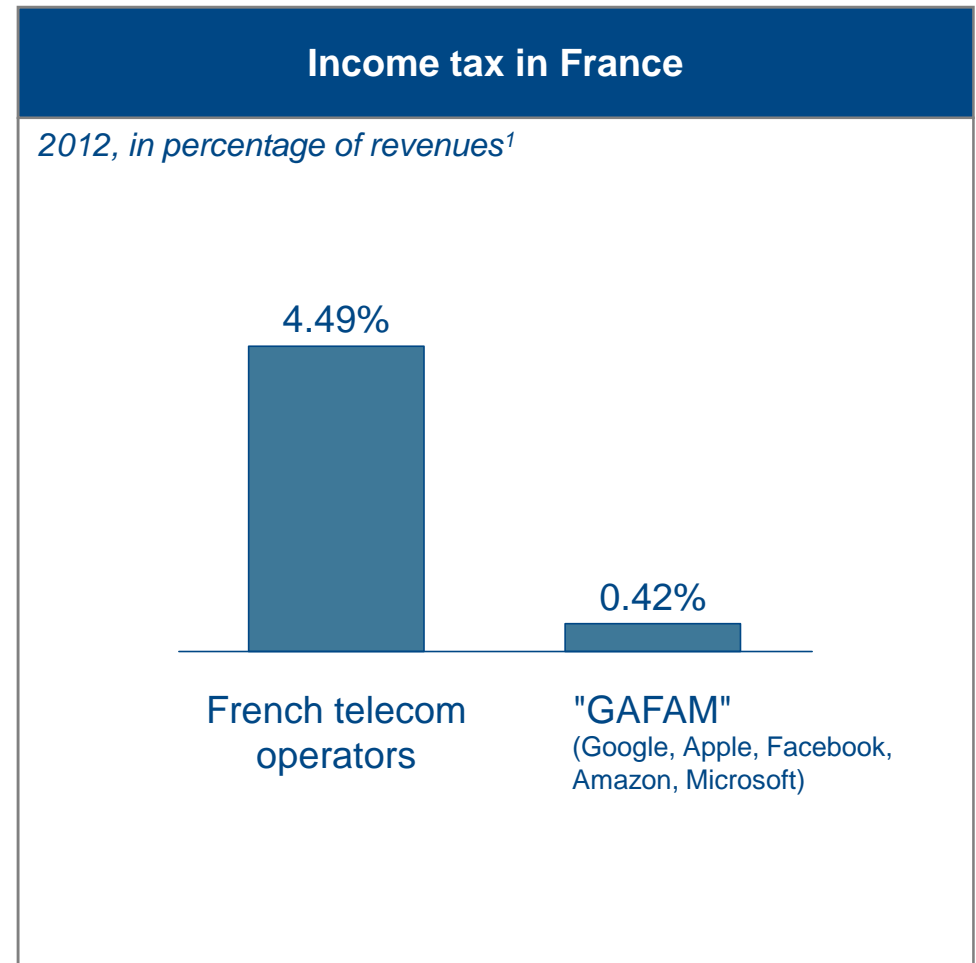
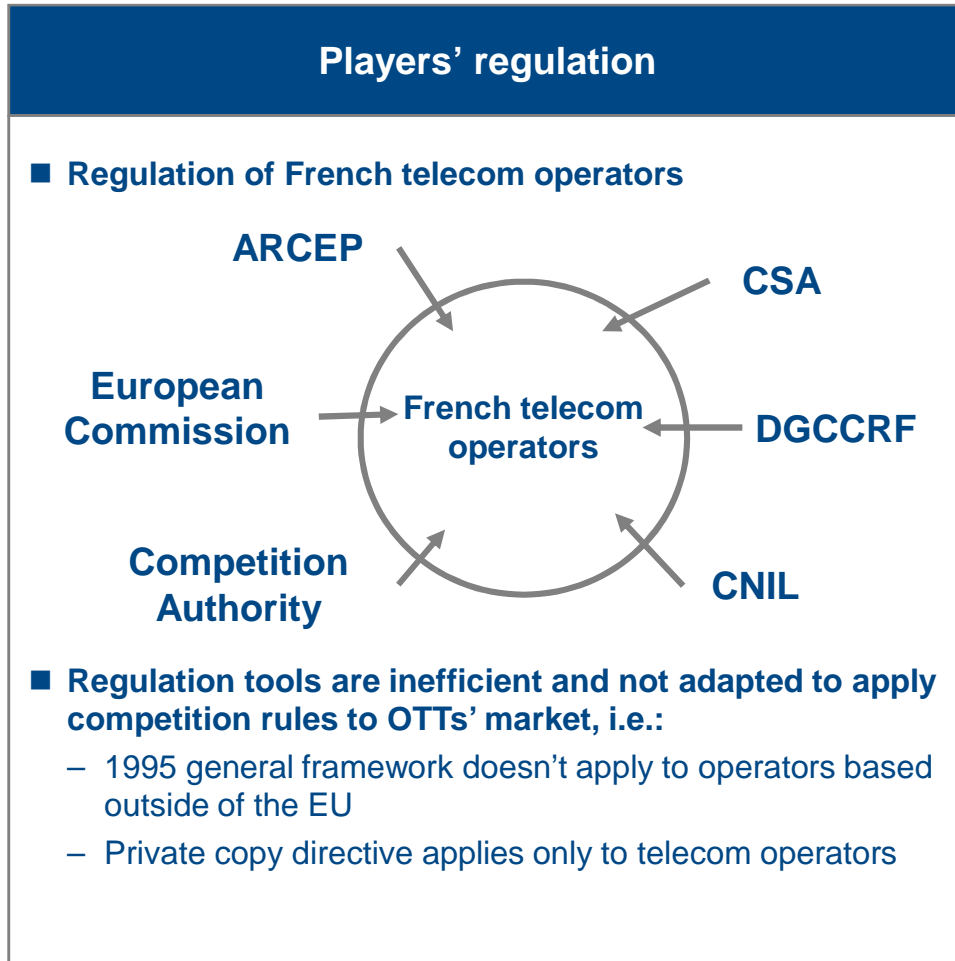
### 1 Telecom investment constitutes a powerful lever for the economy and for State revenues



Source: INSEE, IDATE, ARCEP broadband observatory, Arthur D. Little Ericsson Chalmers university of technology "Socioeconomic effects of broadband speeds", State finance law project 2013 report on compulsory levy and their evolution, Arthur D. Little analysis

## 4 Two issues to deal with as priorities

### 2 Regulation is focusing on players that contribute the most to national wealth



Source: comScore, ARCEP, Diane, annual reports, press, Arthur D. Little analysis

(1) Revenues estimates for the "GAFAM"

## 4 Two issues to deal with as priorities

### 2 The outburst of services located outside of the European Union requires creation of a strong trust relationship between users and the networks

#### French population survey

**46%** of the revenues of the data center market is located in North America

**48%** of French people fear the consultation of their personal data by a third party

**92%** of French people wish to impose a time limit for the conservation of their personal data

**66%** of French people do not trust websites with safeguarding their personal data; for example, social networks such as Facebook or e-commerce websites

“Regarding the use of Internet means for economic intelligence, our country and our businesses are not sufficiently aware of the dangers that Internet represents. This is one of tomorrow’s biggest challenges” – Patrick Calvar, National director of the French counter-intelligence agency

Source: Caisse des dépôts, IFOP, IDATE, Gartner, Institut BVA, Arthur D. Little analysis

## 4 Two issues to deal with as priorities

### 2 Development of future digital businesses depends on the existence of efficient networks and telecommunication services

Future businesses	Leaders & potential leaders
<b>Big Data</b>	Criteo ingensi      talend
<b>Cloud computing</b>	Cloudwait      OHV.com NUMERGY
<b>Software &amp; embedded systems</b>	Dassault Systemes      Sopra Thales
<b>Digital hospital</b>	Orange      EyeTechCare Santech
<b>Contactless services</b>	ingenico      Buyster      gemalto Oberthur Technologies
<b>Smart grids</b>	Linky      Denko      Schneider Electric

Future businesses	Leaders & potential leaders
<b>E-learning</b>	coopacademy EDUNAO      OpenClassrooms
<b>Telecom sovereignty</b>	Alcatel-Lucent      gemalto Oberthur Technologies
<b>Connected objects</b>	Withings      Parrot netatmo
<b>Augmented reality</b>	AUGMENT Total Immersion
<b>Cyber security</b>	denyall inwebo      Bull
<b>Auto-piloted vehicles</b>	Renault      Peugeot      Valeo

Source: French government press release 12<sup>th</sup> September 2013 (34 industries), Alcatel-Lucent (white paper "Smart Choices for the Smart Grid"), campustechnology.com, CIO.com, ("Fast broadband critical to future of education: teachers"), Arthur D. Little analysis



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**Given the strong growth in telecom services usage and the economic context, it is critical to support the investment effort of telecommunication operators**

**Usage of telecom services is growing strongly**

**x 200**

Mobile Internet usage since 2006

**The European approach has had negative consequences**

**-32%**

Decline of market capitalization of European telecom operators between 2006 and 2012

**Operators have nonetheless maintained their investment level in an uncertain environment**

**14.5%**

Of operators' revenues were invested in 2012

**The telecom sector has a major boosting effect on the French economy**

**>100 bn€**

Of cumulated GDP will be created between 2013 and 2022 by operators' investment in super-fast broadband networks

Source: Fédération Française des Télécoms, Arthur D. Little

## **For a digital New Deal that will foster telecommunication investment (1/3)**

**Develop a strategic long-term vision to foster a productive investment**

**Restore European and French leadership in the digital industry**

Source: Fédération Française des Télécoms, Arthur D. Little

### For a digital New Deal that will foster telecommunication investment (2/3)

**Develop a strategic long-term vision to foster a productive investment**

**1**

#### **Guarantee predictability and stability of the regulatory environment to ensure the necessary visibility for investment**

- Prepare the new telecom regulatory package within the context of a strategic vision for the industry
- Shift from a microeconomic to a macroeconomic regulatory system designed to foster the development of European players
- Carry out detailed impact studies before any change in regulation
- Ensure consistent management of the radio spectrum with an industrial logic
- Implement the European roaming framework adopted in 2012

**2**

#### **Implement tax incentives and financial mechanisms to foster investment in the telecommunication sector**

- Reduce the over-taxation of telecommunication operators
- Release €2 billion over 10 years to accelerate private investments in accordance with the plan “France high-speed broadband”

Source: Fédération Française des Télécoms, Arthur D. Little

### For a digital New Deal that will foster telecommunication investment (3/3)

**Restore  
European and  
French  
leadership in the  
digital industry**

**3**

#### **Establish a tax and regulatory playing field among all players of the digital ecosystem**

- Apply the principle of "same rules for competing businesses"
- Terminate the possibility given to OTT players to massively reduce their European taxes, with a new international tax regime
- Widen the taxation base of OTT players to specific sector charges
- Spread widely in Europe the concept of "restrictive practice" in order to apply it to global OTT players

**4**

#### **Reinforce confidence in networks in the digital era**

- Carry out the digital identity project based on SIM cards (requires a strong political leadership of the State and/or Europe)
- Set up and promote a European certification for data storage
- Certify software and critical equipment distributed in Europe

**5**

#### **Stimulate the development of future digital businesses through public authorities initiation**

- Ensure the exemplary role of the State to foster the usage of digital services without excluding alternative European solutions (secured public cloud, NFC in public transport, extension of the MOOC<sup>1</sup> objectives especially for professional training, usage of telecenter among civil servants, invoice and administrative exchange digitization)
- Support innovative and future digital systems (big data, cloud, contactless application, M2M, smart home, smart city)

Source: Fédération Française des Télécoms, Arthur D. Little

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