Arthur D Little

2018 « Economics of Telecoms » Report – Update of key economic metrics

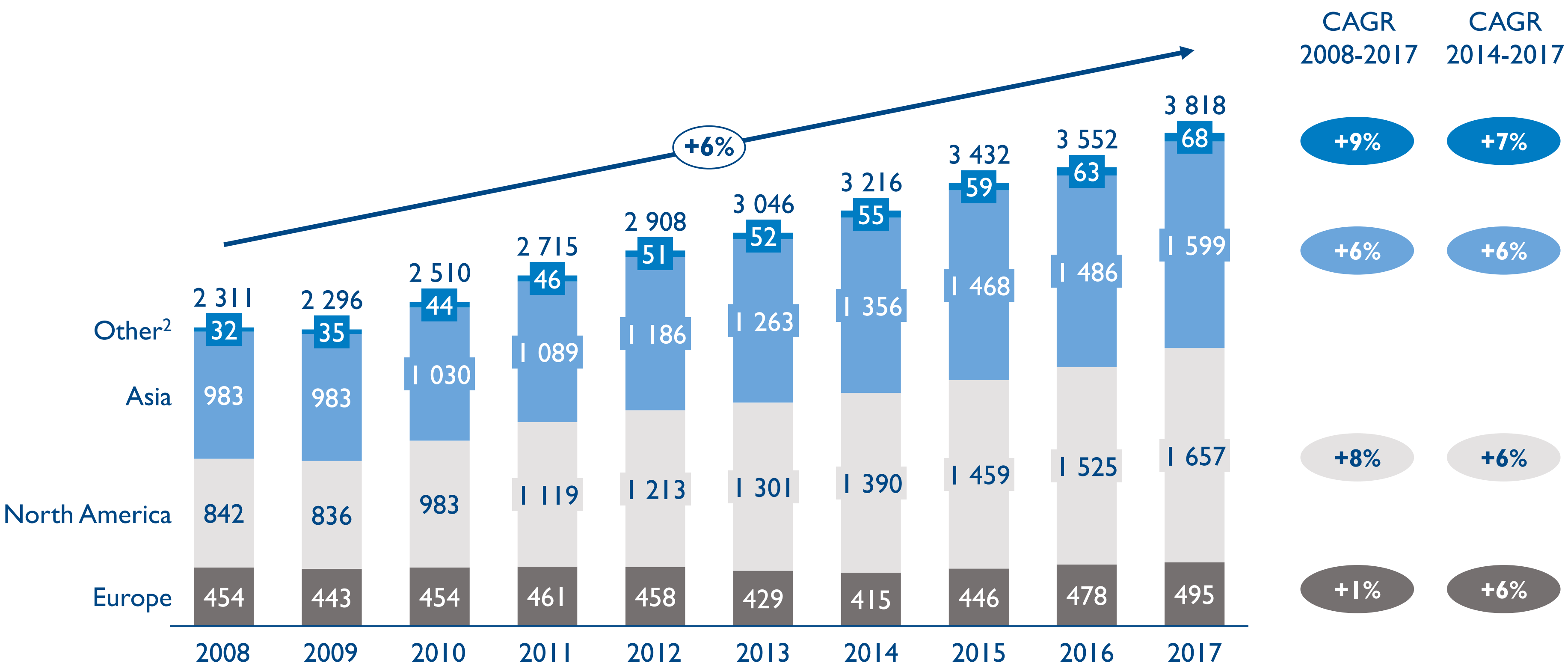
December 2018

Agenda

All regions have been growing at a similar pace since 2014

Revenues of the digital ecosystem

World, 2008-2017, billions of euros[1]



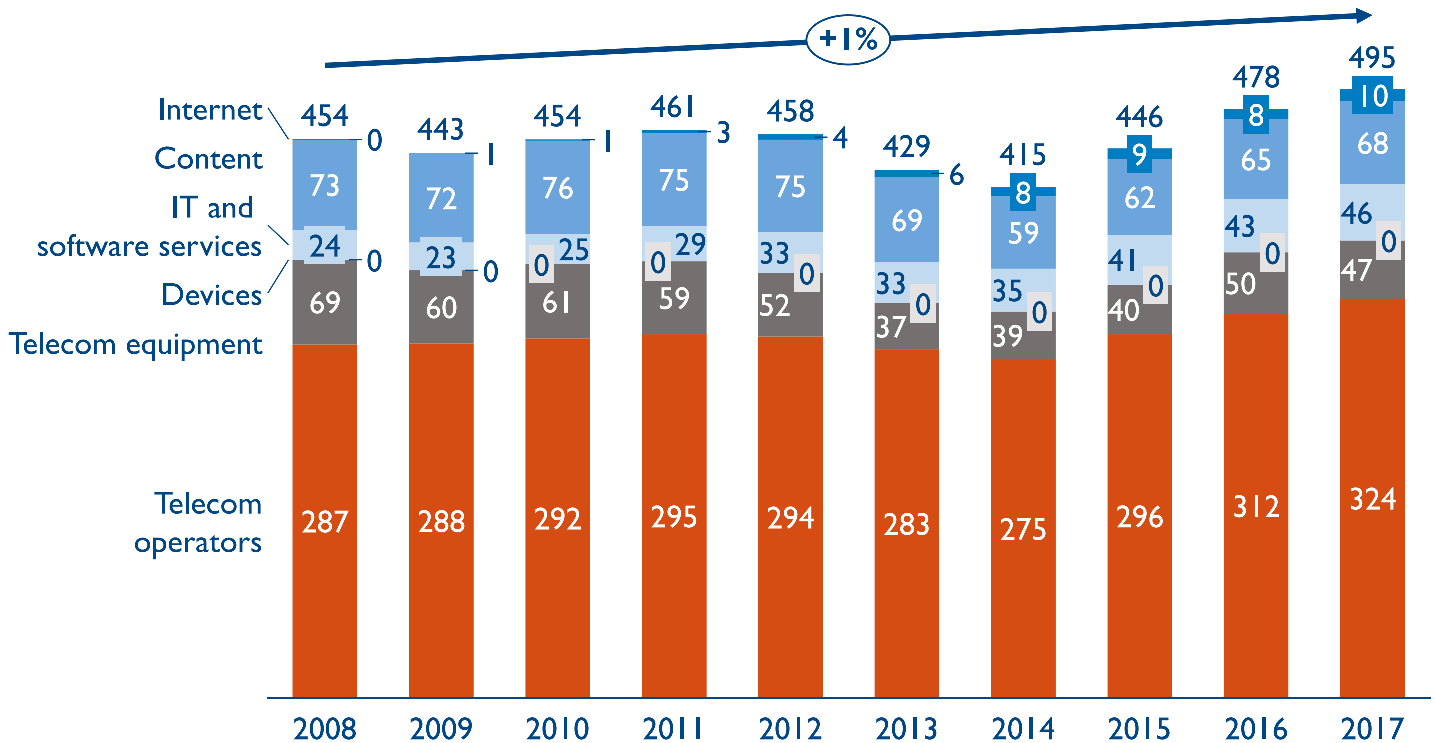
Source: Thomson Reuters, Arthur D. Little

Notes : 1) Constant exchange rate 2017, 1USD = 0,887EUR, 2) Includes top 30 players from everywhere but Asia, North America, and Europe (i.e Oceania and South America)

After a low point in 2014, the European digital ecosystem returned to growth, mainly driven by telecom operators

Revenues of the European digital ecosystem[1]

Europe, 2008-2017, billions of euros[2]



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR 2008-2017	CAGR 2014-2017
Total	454	443	454	461	458	429	415	446	478	495		
Internet	0	1	1	3	4	6	8	9	8	10	+41%	+10%
Content	73	72	76	75	75	69	59	62	65	68	-1%	+5%
IT and software services	24	23	25	29	33	33	35	41	43	46	+7%	+10%
Devices	0	0	0	0	0	0	0	0	0	0		
Telecom equipment	69	60	61	59	52	37	39	40	50	47	-4%	+7%
Telecom operators	287	288	292	295	294	283	275	296	312	324	+1%	+6%

Source : Thomson Reuters, Arthur D. Little

Note : 1) Panel of 180 companies corresponding to the top 30 by sector in terms of turnover 2) Constant exchange rate 2017, 1 USD = 0,887EUR

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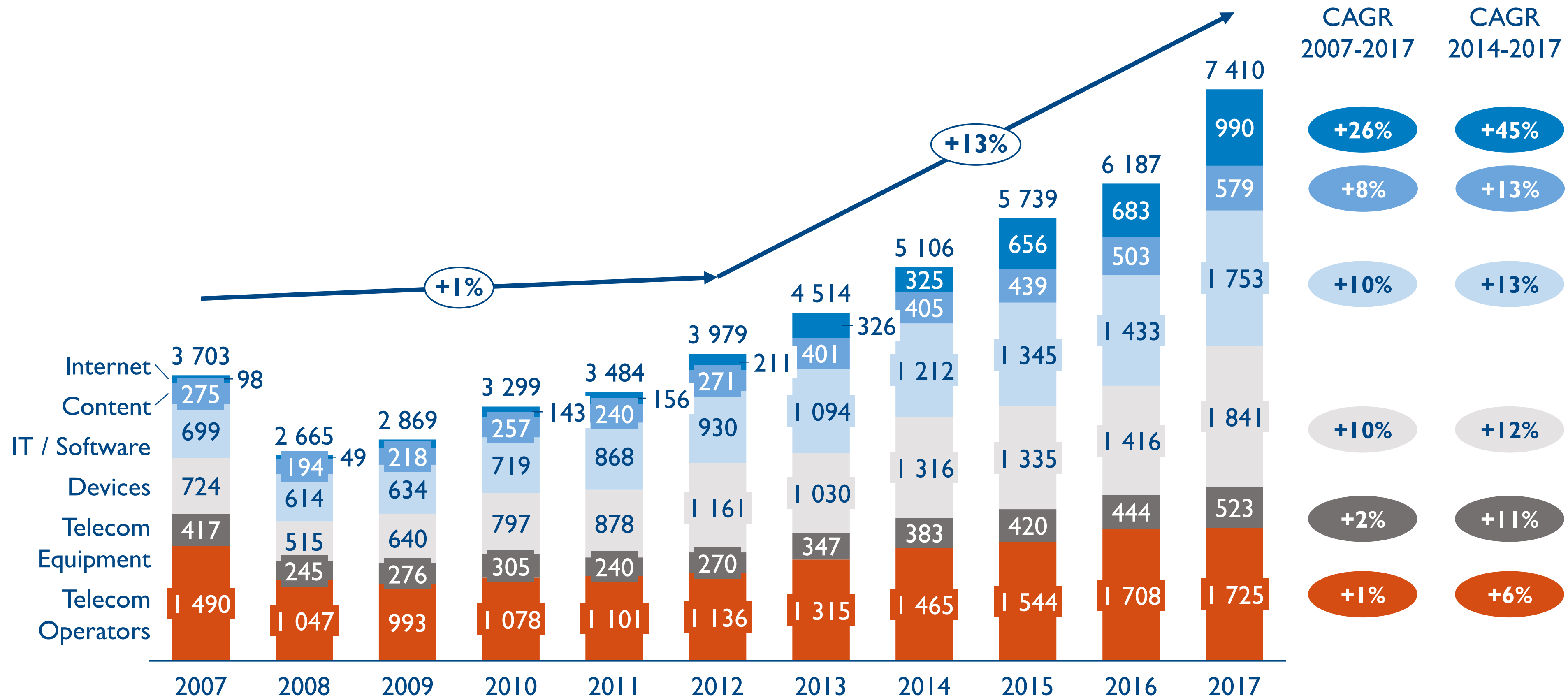
The ecosystem has caught up with its pre-crisis market capitalization level long ago, with growth driven by the Internet and Software segment

Market capitalization by sector

World, 2007-2017, billions of euros[1]



Source: Thomson Reuters, Arthur D. Little

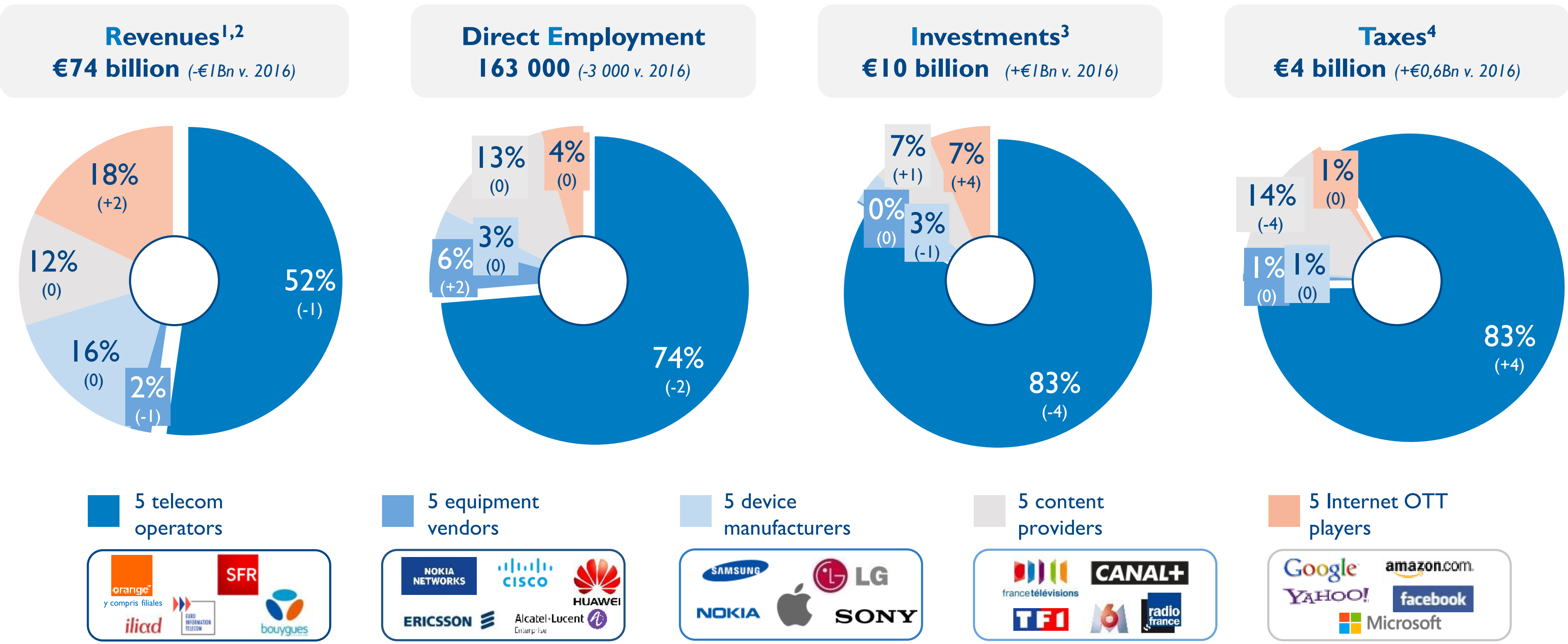
Note : 1) Constant exchange rate 2017, 1USD = 0,887EUR

Agenda

Telecom operators are essential to the French digital ecosystem

Relative size of players in the digital ecosystem 2016-2017

France, 2017 (v. 2016)



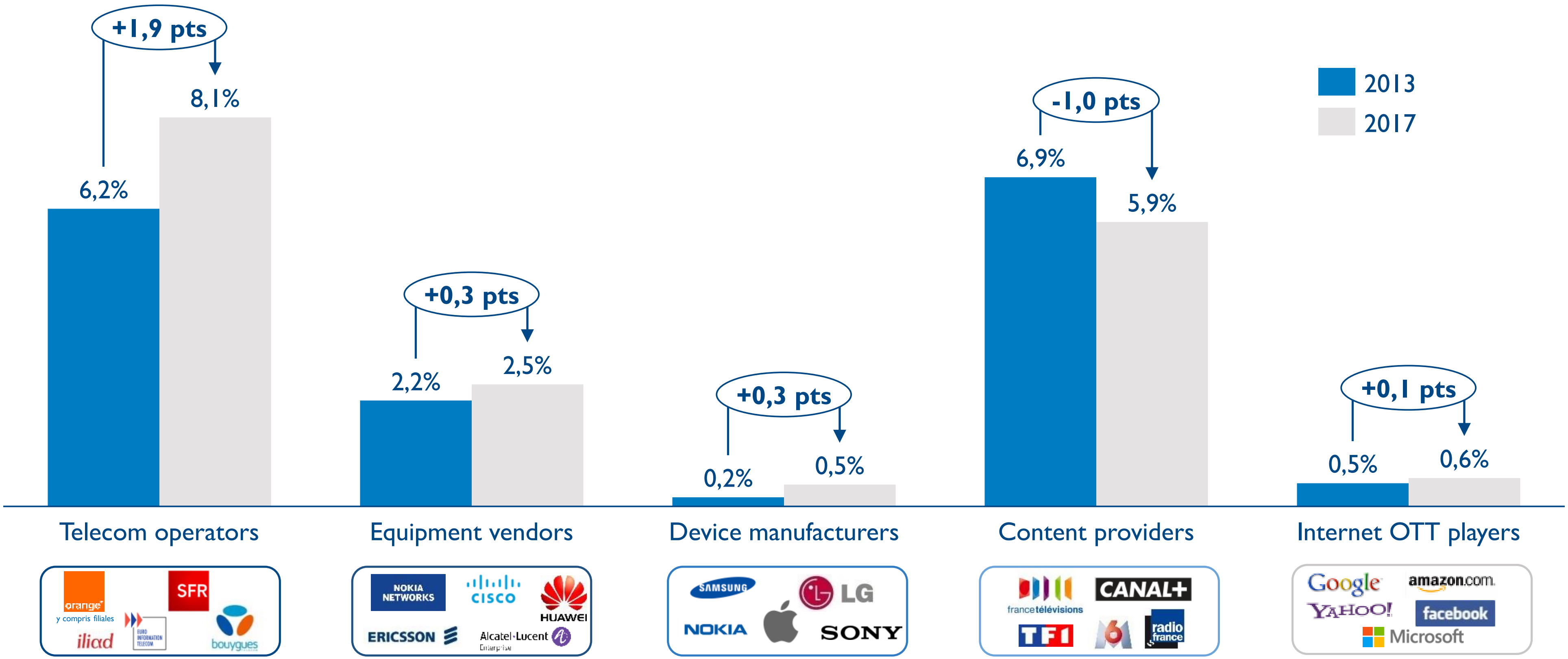
Source : Diane, annual reports, Arthur D. Little

Note : 1) Revenues declared in France or from literature search, 2) Data adjusted to take into account the estimated actual turnover of international players in France, 3) Nokia's mobile division investments are integrated into Microsoft following the acquisition of the mobile division in 2014, 4) Corporation tax, taxes and similar disbursements

Telecom operators have faced a sharp increase in their tax rates, as opposed to equipment vendors and internet players

Taxes[1] to Revenues[2,3] ratio per type of players

France, 2013 v. 2017, %



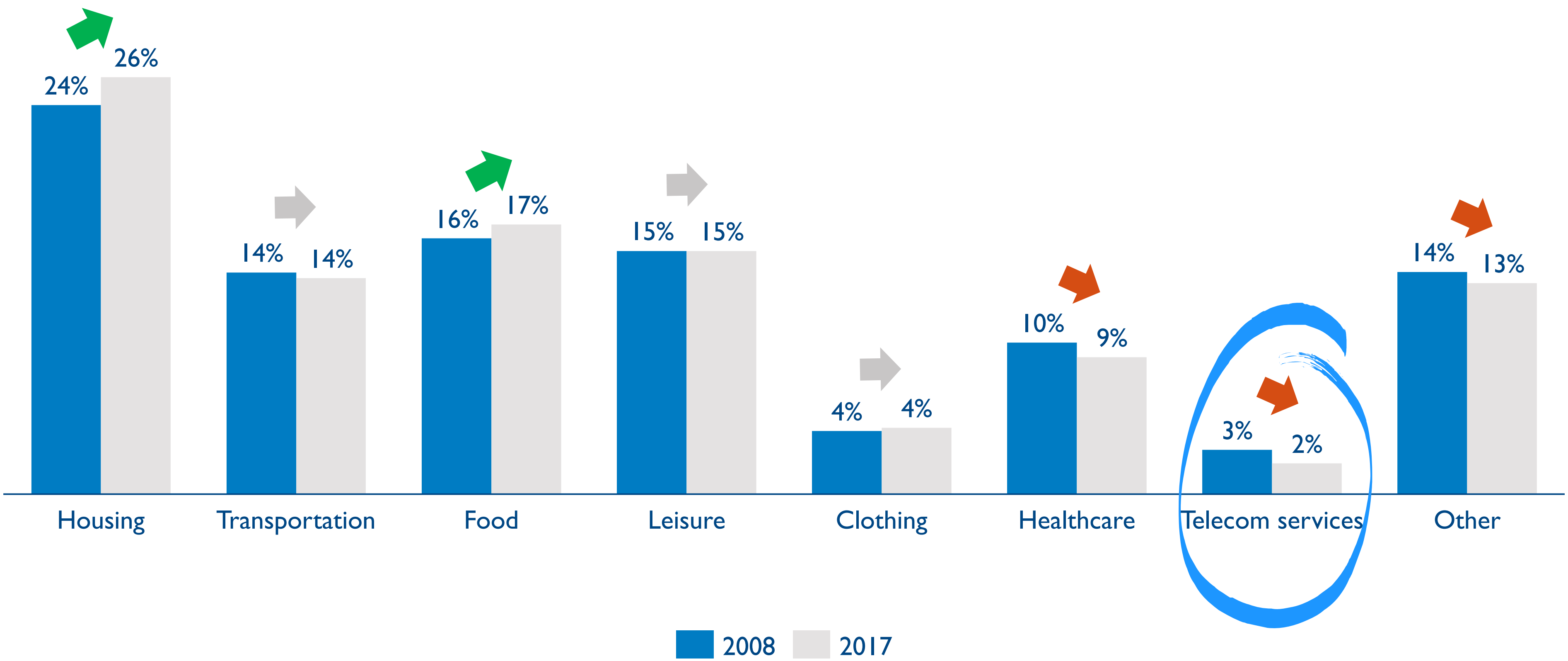
Source : Diane, annual reports, Arthur D. Little

Note : 1) Corporation tax, taxes and similar disbursements, 2)Revenues declared in France or from literature search, 3) Data adjusted to take into account the estimated actual turnover of international players in France

The share of telecom services in French households' spending is low and has decreased over the last years, contrary to other expense items

Share of telecom services expenses in French households' total spending

France, 2008-2017, % of total spending

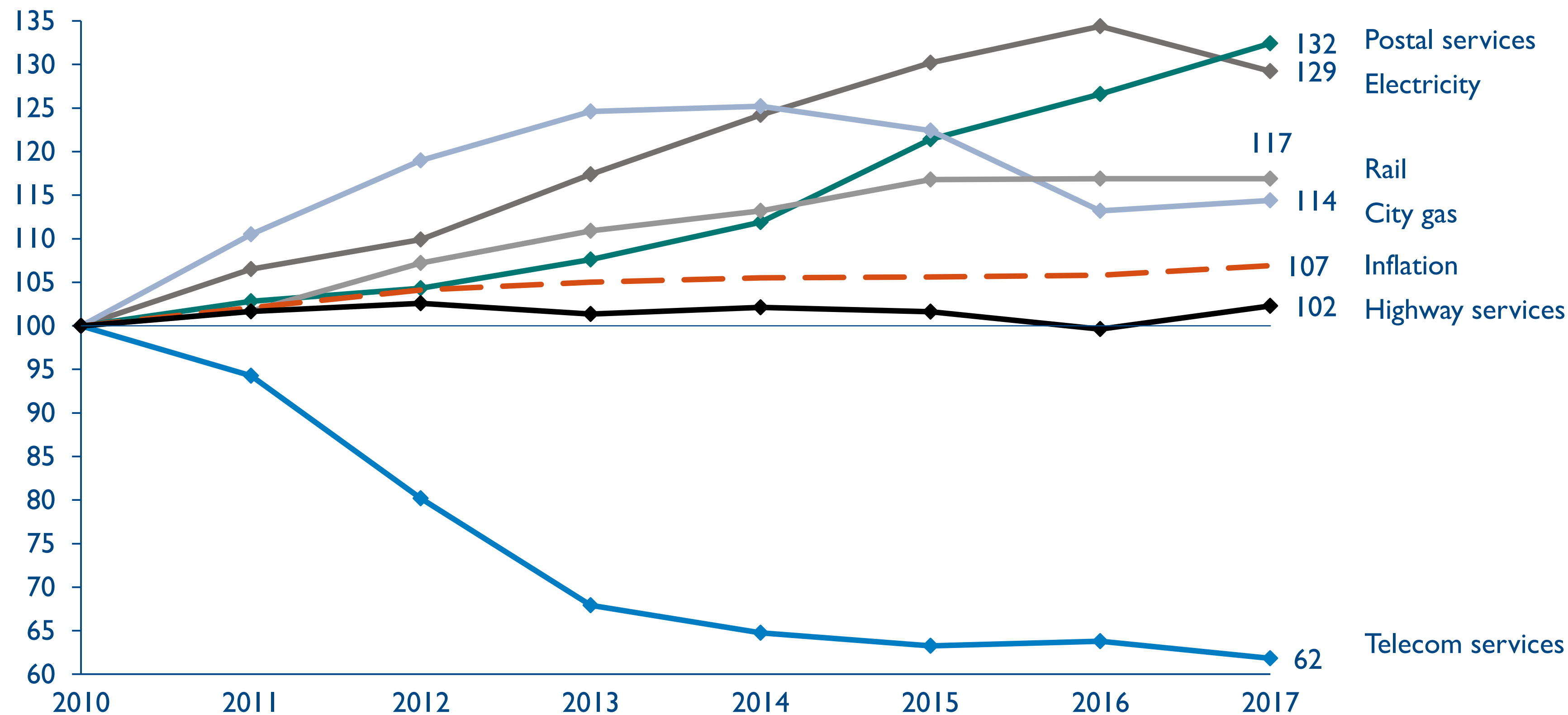


Source : INSEE, Arthur D. Little

Contrary to other key regulated sectors, telecom services have witnessed a sharp fall in prices over 2010–2017

Consumer price index evolution on selected products

France, 2010–2017, Base 100 in 2010



Source: INSEE, Arthur D. Little

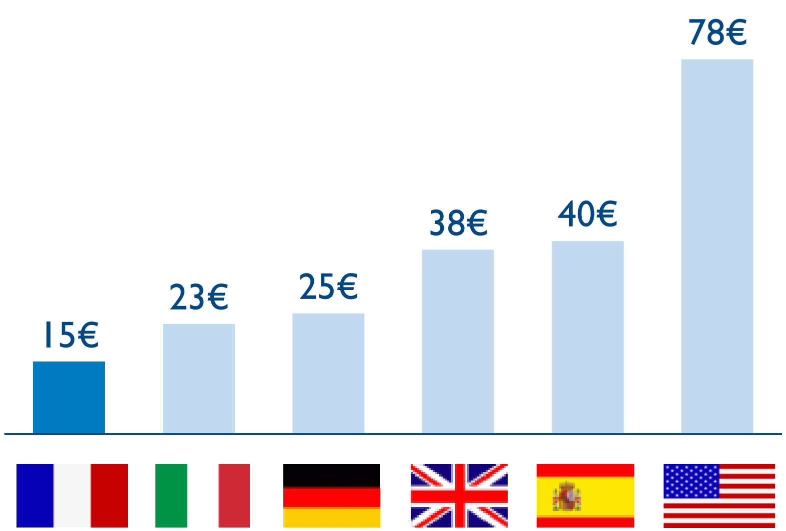
Prices of telecom services in France remain the lowest among large Western countries

Benchmark Mobile 50 Go

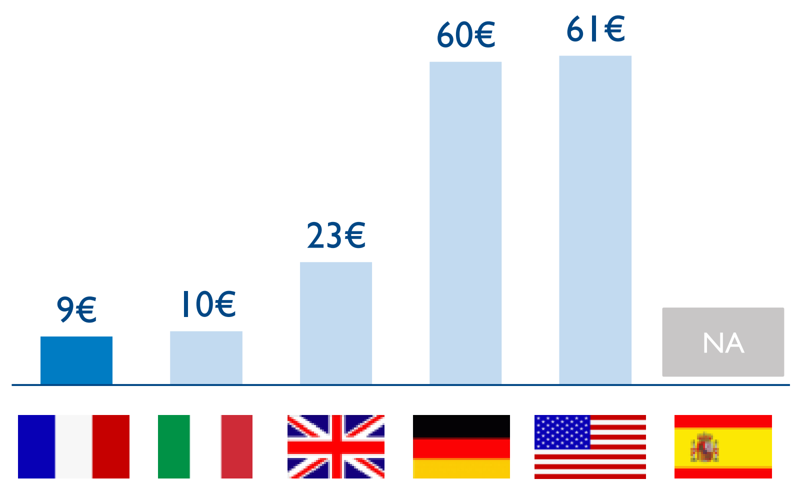
Offer benchmark – Main operators

Selection of countries, November 2018, € incl. taxes/month

Fixe (Triple Play)[1]



Mobile[2]



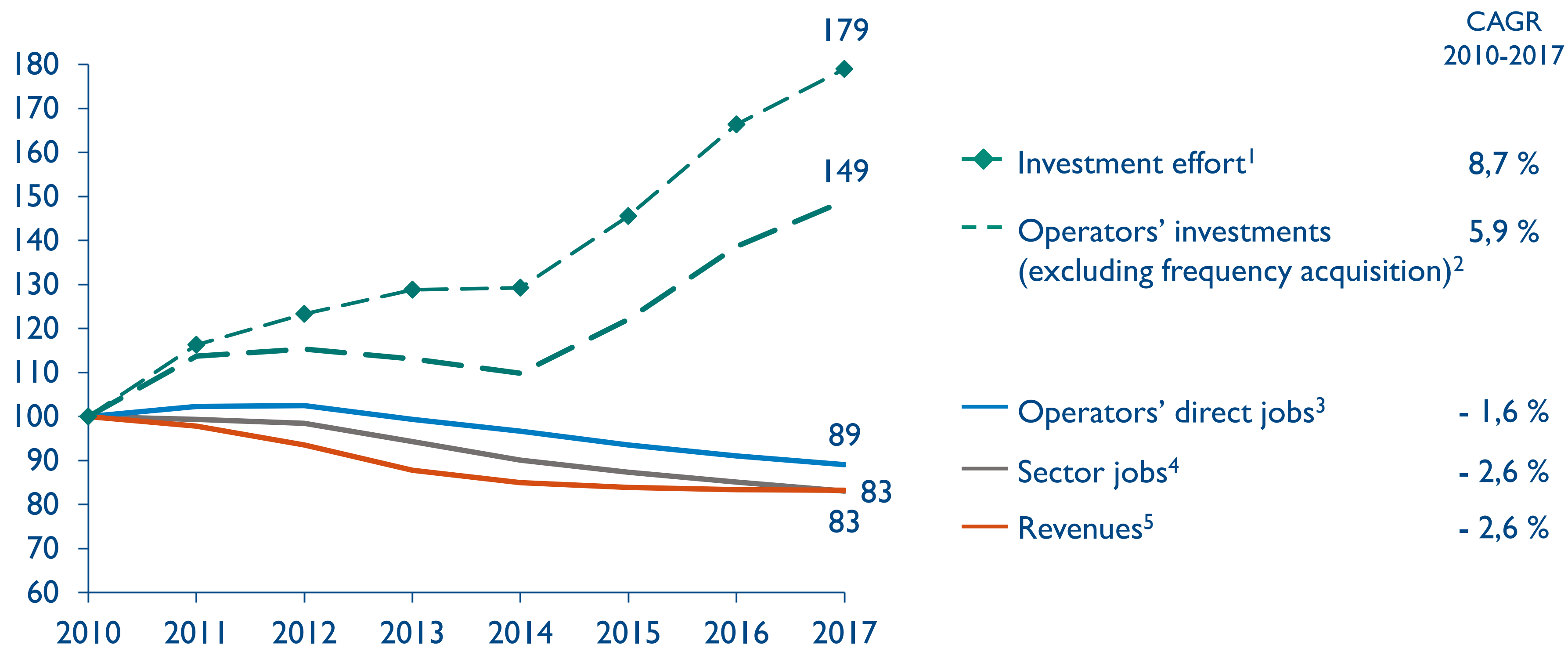
Source: Operators, Arthur D. Little

Note: 1) Triple play offers only; unlimited calls to landline at least; unlimited broadband internet through xDSL or fibre; television included, excluding additional packs; operators with market share > 10%, 2) Unlimited calls (whenever possible or else >500 minutes), unlimited SMS/MMS, at least 5 GB Internet; packages without devices, packages without commitment; operators with market share > 10%

Operators increased their investments despite lower turnover, but could not maintain employment levels

Employment, revenues and investments of French telecom operators

France, 2010–2017, base 100 in 2010



Source: ARCEP, DARES, Insee, Arthur D. Little
Note: 1) Investment efforts: operators' investments (excluding frequency acquisition)/revenues of operators 2) Provisional ARCEP figures for 2017
3) ARCEP figures 4) ARCEP figures including part of indirect jobs 5) Provisional ARCEP figures for 2017 corresponding to revenues collected from final client

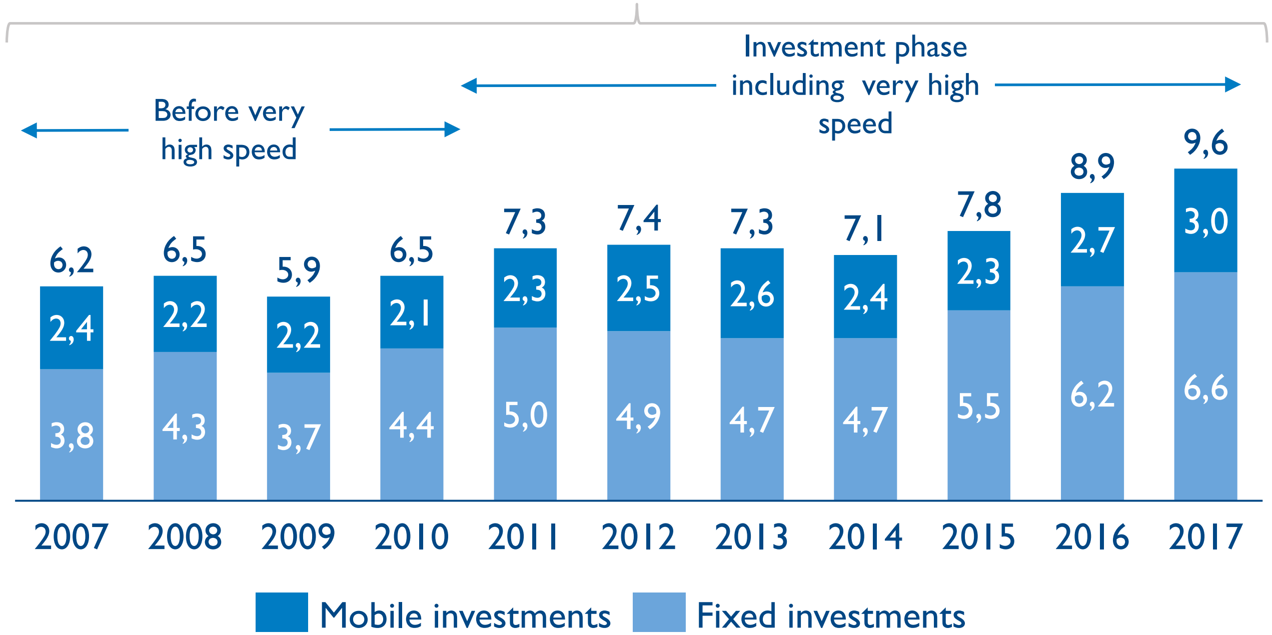
Telecom operators' investments have peaked in 2016 and 2017 – €81 billion were invested over the period

Investments of network operators[1]

France, 2007–2017, billions of euros

€81 billion

(excluding frequency acquisition)



+ 11% CAGR between 2014 and 2017

2017 investments are equivalent to…

6 nuclear power plants

ou

26 Stades de France

ou

278 TGV trains

ou

716 high schools

ou

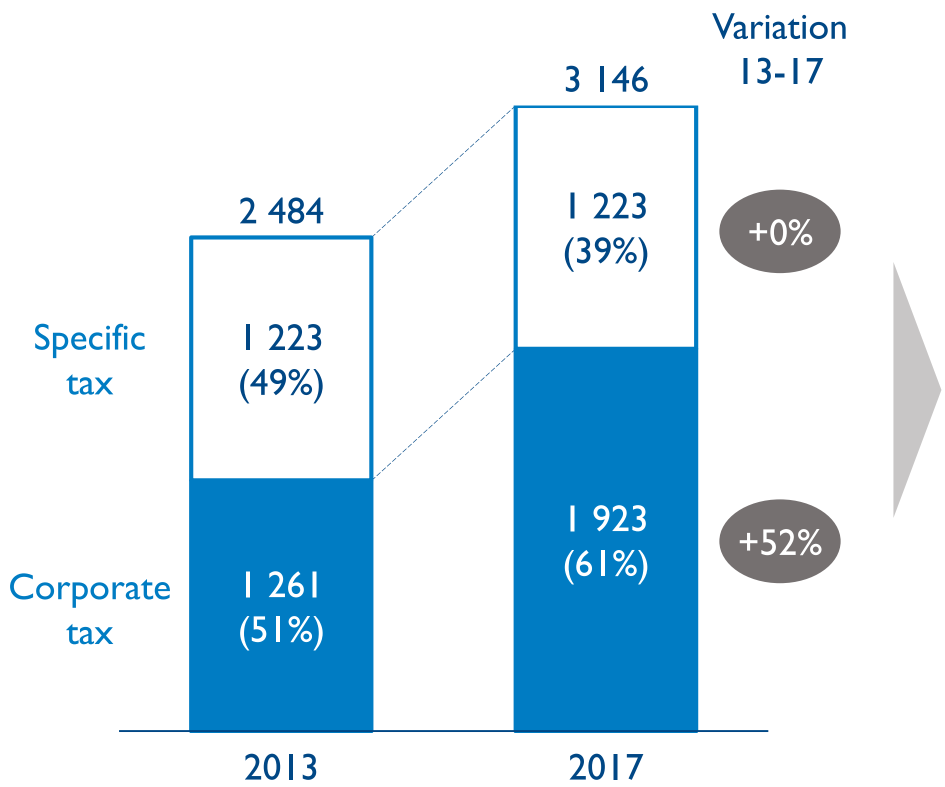
1524 km of highways
(i.e Paris - Budapest)

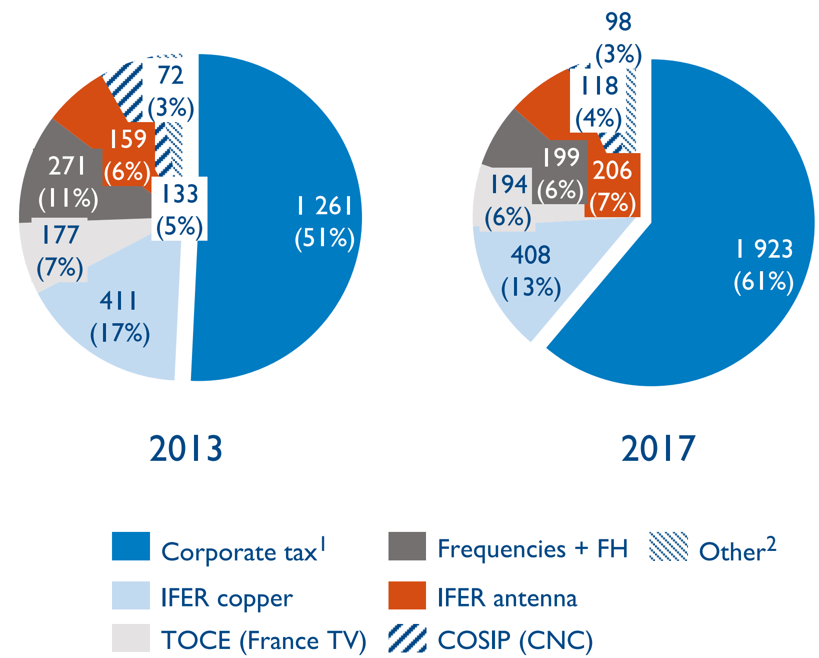
Source: ARCEP, Arthur D. Little
Note: 1) Investments excluding frequency acquisition

Investments keep growing in spite of a heavy specific taxation

Telecom operators' taxation

France, 2013 and 2017, millions of euros and % of total taxes





Source: Operators, FFT, Arthur D. Little

Note: 1) Perimeter: corporate tax on top 5 companies (set reconfigured in 2012 with corporate tax corresponding to Numéricable + SFR) & FFT members specific taxes 2) VOD & private copy

R E I T

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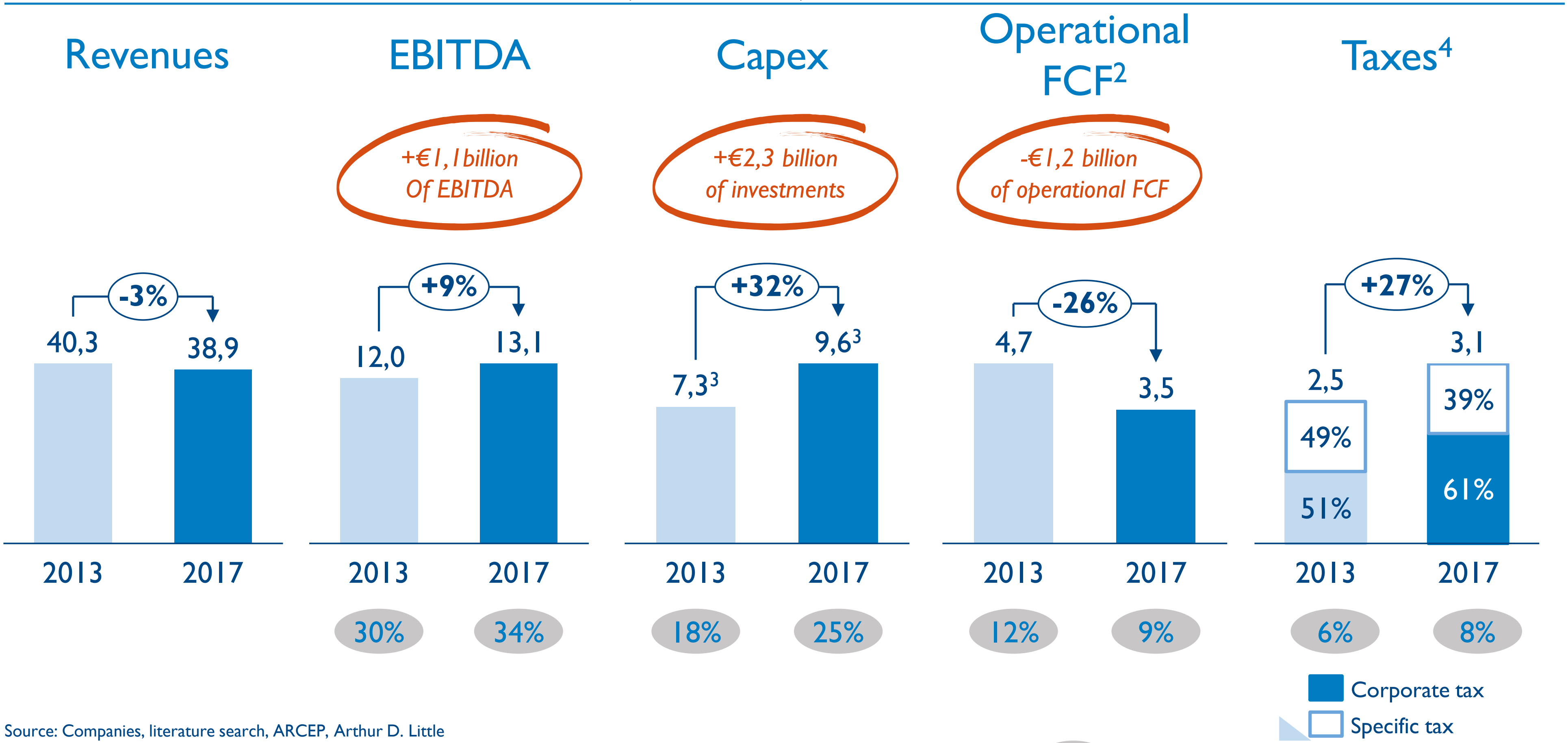
Increased investments and taxes lead to lower cash flow despite productivity efforts

Economic performance of major French telecom operators[1]

France, 2013–2017, billions of euros



Source: Companies, literature search, ARCEP, Arthur D. Little

Note : 1) Top 5 French telecom operators including Orange, SFR, Bouygues Telecom, Free and El Telecom 2) Estimated operational FCF (EBITDA – CAPEX) 3) ARCEP figures representing sector investments, excluding frequency acquisition 4) Taxes = Corporate + Specific Taxes

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Contact:

Ignacio GARCIA ALVES
Global Chief Executive Officer
garciaalves.ignacio@adlittle.com

Julien DUVAUD-SCHELNAST
Principal
duvaud-schelnast.julien@adlittle.com