BearingPoint®

Telecommunications Outlook 2017

20+ years of liberalization of telecommunication markets

vatm — Enabling the Gigabit Society

2016

KPI	Population density inhabitants per km²	GDP per capita in K$	Public telecommunication investment per capita in $	Total communication access paths per 100 inhabitants	Fixed to mobile use ratio	Individuals using the internet in %	Consumer Price Index for communications[1]	Telecommunication revenue per capita in $	Telecommunication revenue growth since 1996 in %	Monthly cellular revenue per subscription in $
France	512	57.4	253.4	232	0.12	95	80.7	1,904	331	66.4
Germany	270	48.1	156.9	226	0.17	93	84.4	1,068	241	33.6
Italy	232	42.5	155.5	222	0.18	90	84.8	1,058	236	33.4
Spain	206	42.3	131.4	201	0.20	86	90.3	867	204	25.1
UK	123	42.0	130.7	196	0.23	82	94.6	860	168	22.5
USA	92	37.7	128.6	187	0.25	81	95.6	718	167	20.7
Korea	36	36.8	121.1	181	0.33	75	117.6	689	140	19.4
OECD	33	36.4	110.2	172	0.35	61	n/a	537	127	15.3

1996

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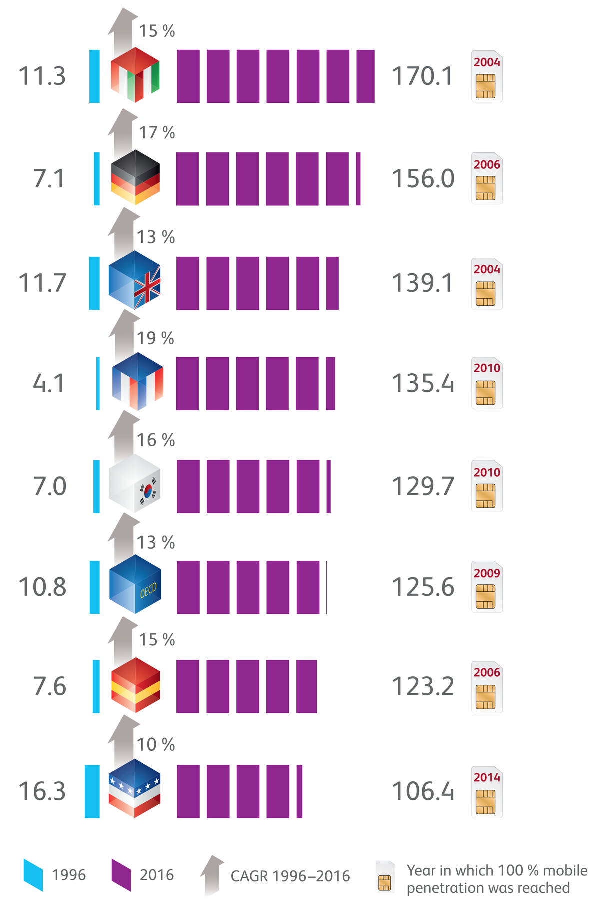
France	455	31.6	162.2	64	2.91	45	108.6	798	100	131.0
Germany	239	26.6	152.9	63	3.76	43	114.9	525	100	111.5
Italy	229	25.5	119.6	58	3.90	30	122.2	518	100	110.7
Spain	193	24.7	114.5	57	4.38	29	127.1	512	100	67.5
UK	110	23.0	105.8	55	5.17	27	132.8	511	100	64.0
USA	79	21.2	101.7	53	6.27	23	147.2	424	100	60.3
Korea	31	20.3	93.1	51	7.08	14	156.4	323	100	47.6
OECD	27	20.0	91.2	47	13.88	14	n/a	292	100	44.4

In the last 20 years, regulatory authorities have successfully supported the technological shift from fixed line based to mobile and broadband oriented communication

Telecommunication services are a necessary prerequisite for digitalization, M2M communication, Internet of Things (IoT), new forms of education, etc.

Key challenges for the regulatory authorities are, for example:
- Maintaining the balance between OTTs and "pure" network operators
- Acting as a catalyst to encourage new technologies – such as 5G, SDN, NFV
- Ensuring high quality telecommunication services are widely available
- Overseeing fair competition in the telecommunication market

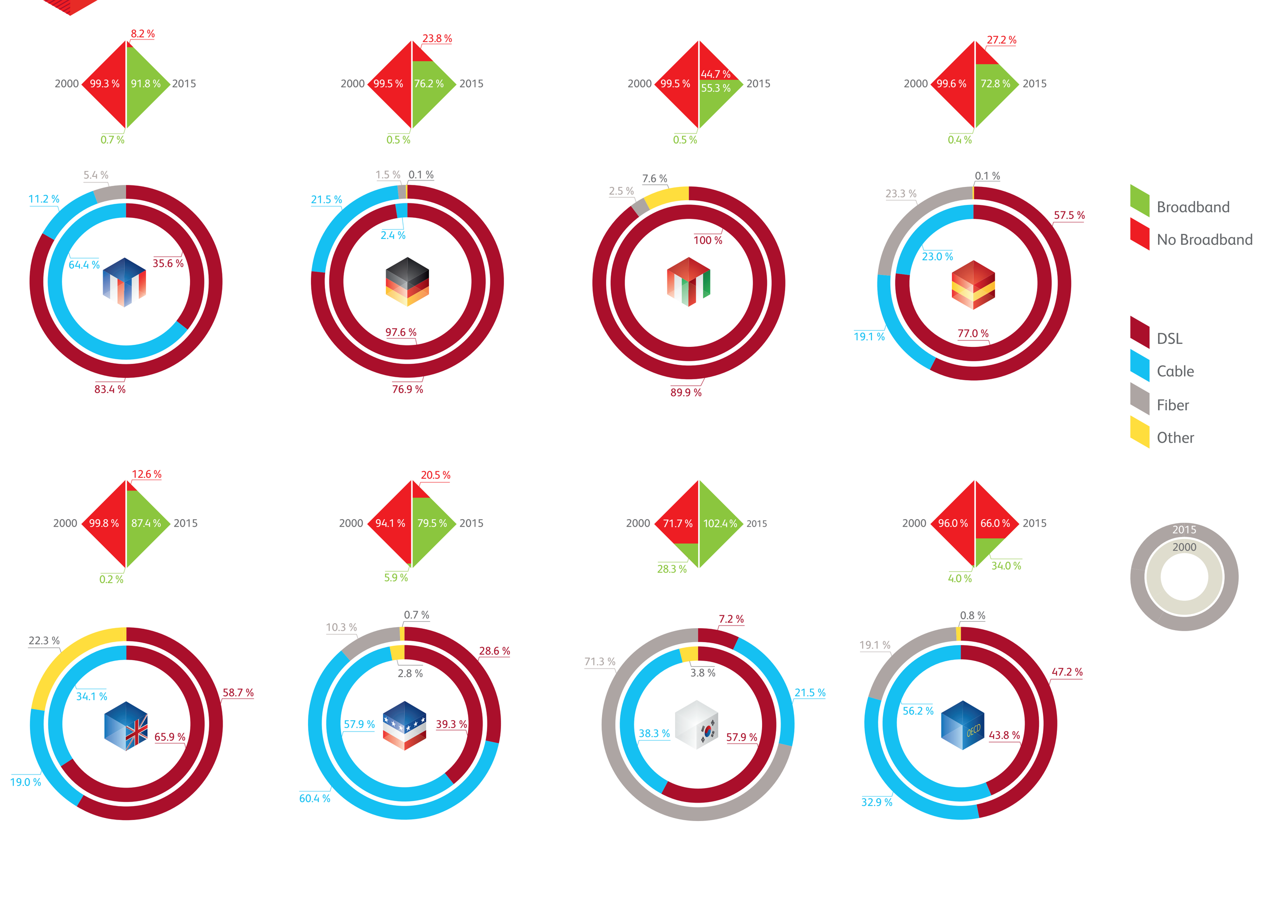
Cellular mobile penetration, subscriptions per 100 inhabitants



In 2016 European countries led the ranking in mobile penetration. In most countries markets are already saturated, penetration is not increasing.

In 1996, the USA had the leading position in mobile penetration, however is now lagging behind European countries.

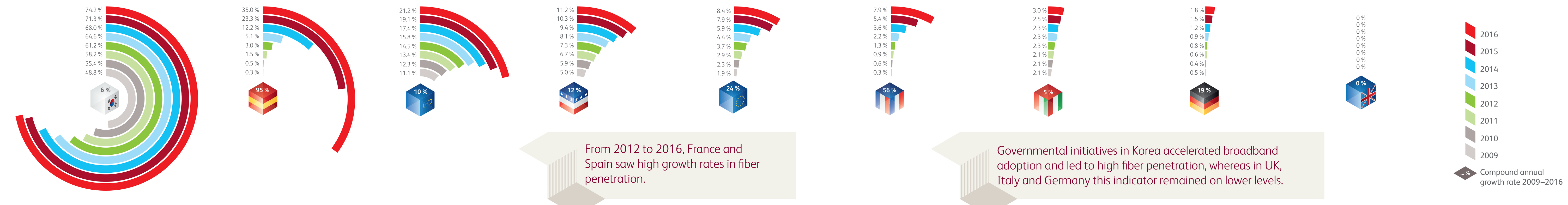
Total fixed broadband subscriptions per household by access technology[2]



In 2000, fixed broadband was in its initial stage in the EU. In 2015, about 3 of 4 households were connected to fixed broadband networks.

Nowadays, xDSL (incl. vectoring) is the prevalent technology in most European countries, whereas cable and fiber are the dominant fixed broadband technologies in the USA and Korea.

Percentage of FTTx access paths in relation to all broadband access paths per country[3]

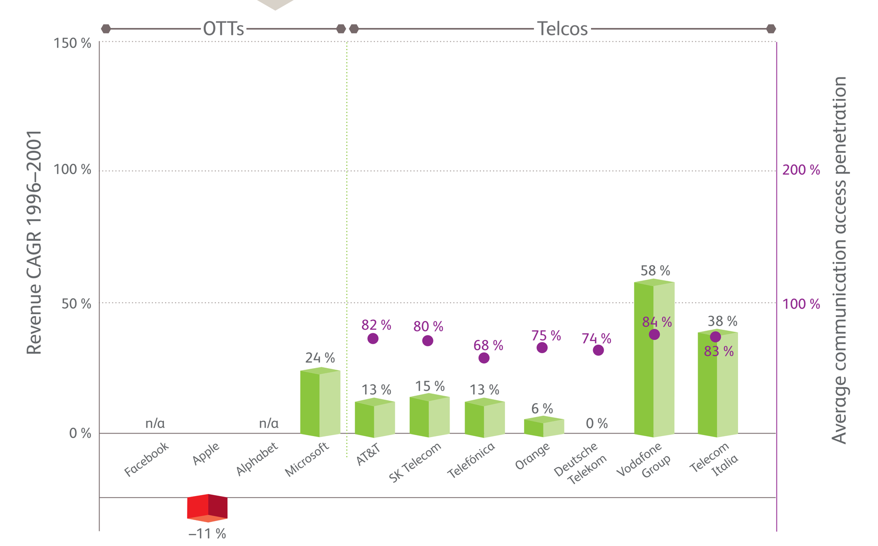


From 2012 to 2016, France and Spain saw high growth rates in fiber penetration.

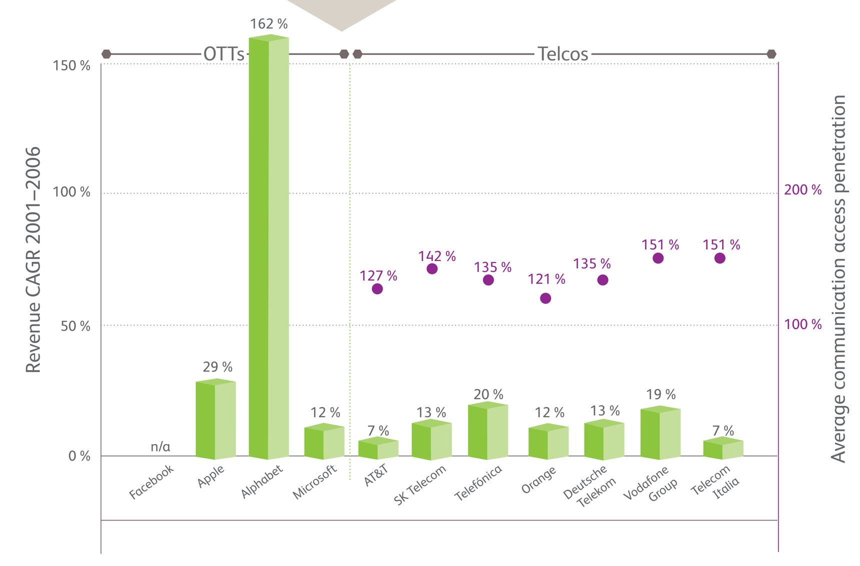
Governmental initiatives in Korea accelerated broadband adoption and led to high fiber penetration, whereas in UK, Italy and Germany this indicator remained on lower levels.

Revenue and market penetration – Telcos vs. OTTs

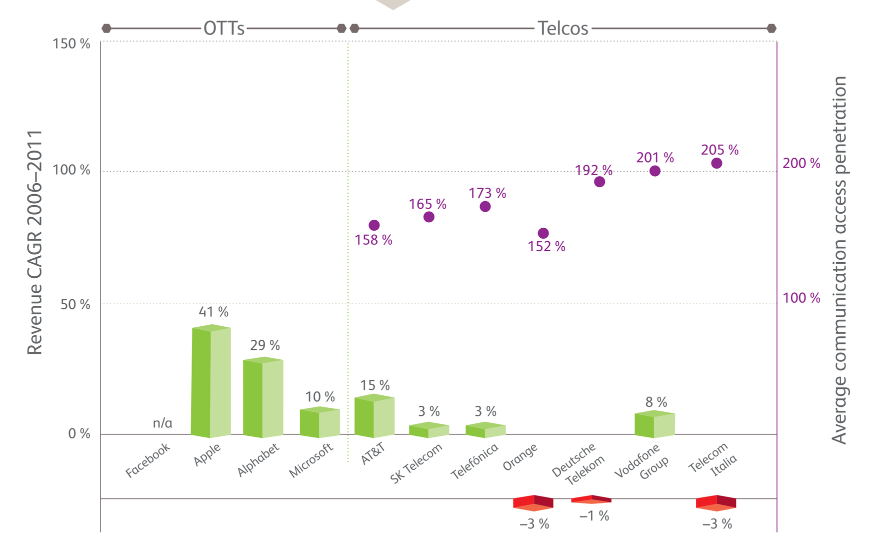
From 1996 to 2001 telecommunication companies saw high revenue growth rates. OTTs and Telcos had a different focus with respect to target groups.



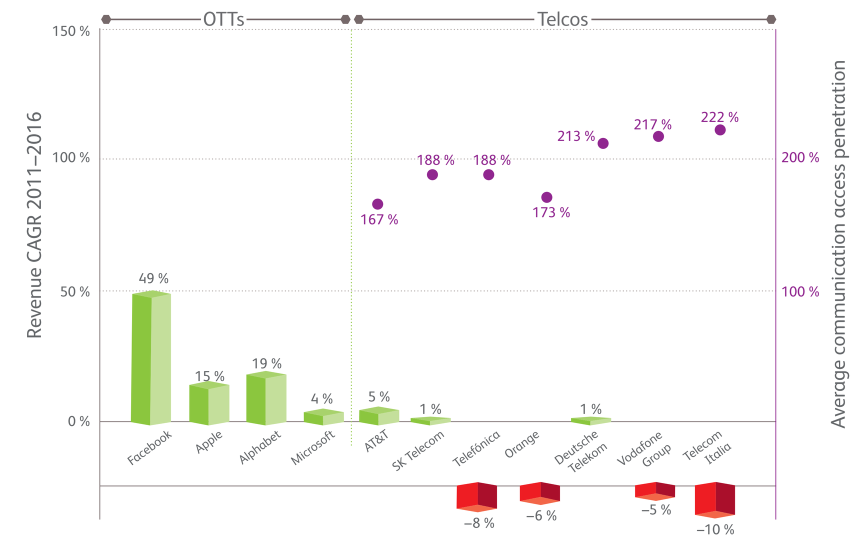
Regulatory authorities focused more and more on regulating the telecommunication industry. Strong increase in the average penetration between 1996–2001 and 2001–2006.



Between 2006–2011 OTTs started successfully providing services substituting known telecommunication services.

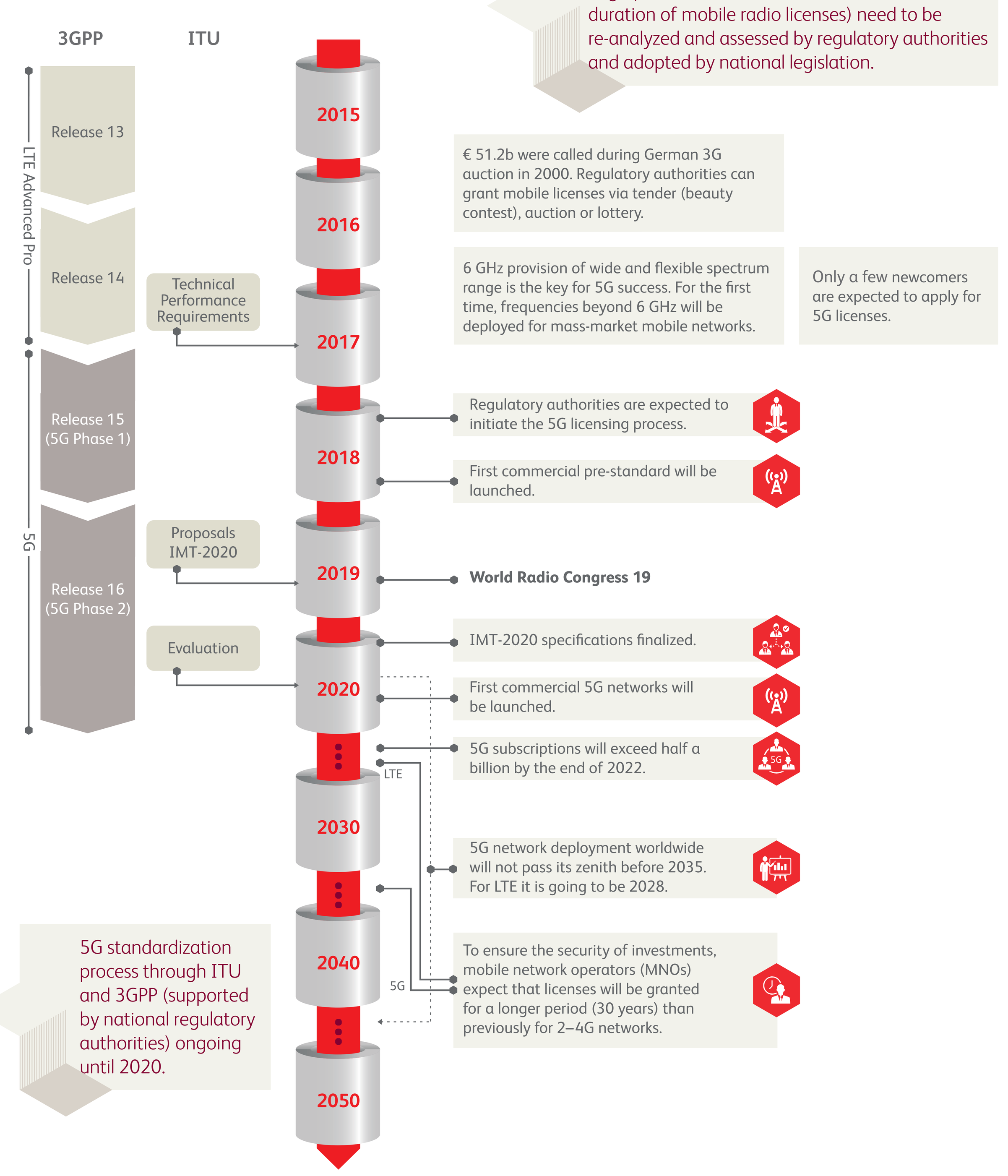


Provision of substitute services by OTTs led to a dramatic decrease in revenue growth rates in the telecommunication industry.



Regulation Outlook: The path to 5G standardization and regulation

In the near future, due to 5G, numerous fields (e.g. spectrum allocation, new market entrants, duration of mobile radio licenses) need to be re-analyzed and assessed by regulatory authorities and adopted by national legislation.



5G standardization process through ITU and 3GPP (supported by national regulatory authorities) ongoing until 2020.

BearingPoint contacts

Austria | Jörg Steinbauer | +43 664 81 61 804
Belgium | Sylvain Chevallier | +33 1 5886 5673
China | Yvon Donval | +86 185 1611 0608
France | Henri Tcheng | +33 6 09 24 2460
Germany | Markus Laqua | +49 173 6690 964
Ireland | Eric Conway | +353 1 418 1116
Italy | Rabih Hamdan | +33 1 5886 5194
Morocco | Jean-Michel Huet | +33 6 21 72 78 44
Netherlands | Marc Bartels | +31 6 11 95 5959
Nordics | Mika Niemela | +358 407 52 00 27
Portugal | Manuel Lopes da Costa | +351 932 803 524
Romania | Christian Gurny | +40 21 315 25 46
Russia | Konstantin Popov | +7 985 97 04 392
Singapore | Dirk Ulrich Jaensch | +49 174 302 6940
Switzerland | Vahan Guermann | +41 79 404 6439
UAE | Riku Santala | +971 56 350 7025
United Kingdom | Angus Ward | +44 20 7337 3220
USA | Mark Mazur | +1 31 22 477 6503

VATM contacts

Jürgen Grützner | +49 221 3767731
Dr. Frederic Ufer | +49 221 3767722
Corinna Keim | +49 221 3767723

Sources

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- Ericsson
- Eurostat
- Fiber to the Home Council (FTTH Council Europe)
- Instituto Nacional de Estadística
- Bureau of Labor Statistics
- International Telecommunication Union (ITU)
- Korean Statistical Information Service (KOSIS)
- Nakano
- Organization for Economic Co-operation and Development (OECD)
- The World Bank
- Verband der Anbieter von Telekommunikations- und Mehrwertdiensten e. V. (VATM)/Association of Telecommunications and Value-Added Service Providers (VATM)

Abbreviations

3G	3rd Generation Mobile Network
3GPP	3rd Generation Partnership Project
5G	5th Generation Mobile Network
CAGR	Compound Annual Growth Rate
DSL	Digital Subscriber Line
EU	European Union
FTTB	Fiber-to-the-Building
FTTC	Fiber-to-the-Cabinet/Curb
FTTH	Fiber-to-the-Home
FTTP	Fiber-to-the-Premises
GDP	Gross Domestic Product
GHz	Gigahertz
ICT	Information and Communication Technology
IMT	International Mobile Telecommunications
IoT	Internet of Things
ITU	International Telecommunication Union
Kbps	Kilobit per Second
LTE	Long Term Evolution
M2M	Machine-to-Machine
MNO	Mobile Network Operator
NFV	Network Functionality Virtualization
OECD	Organization for Economic Co-operation and Development
OTT	Over-the-Top
SDN	Software Defined Networks

Notes

Numbers for 2016 partially estimated by BearingPoint Research.

1) Year of reference 2010 = 100 %

2) According to OECD definition, subscriptions with advertised download speeds of at least 256 Kbps, incl. DSL, cable, fiber, other. The broadband data from 1997 to 2009 are calculated according to the 'old' OECD methodology including DSL, cable, fiber, other satellite and fixed wireless connections. Data as of 2010, the current or 'new' methodology separates all fixed and wireless connections.

3) According to OECD definition, fiber subscriptions include FTTH, FTTP and FTTB and exclude FTTC. For UK OECD offers no official data on fiber penetration. We estimate that number of FTTx access paths ranges between 780,000 and 980,000. For Germany fiber includes fiber lines provided by cable operators.