

DEPARTMENT OF ECONOMICS AND STATISTICS

# REPORT ON ONLINE PLATFORMS

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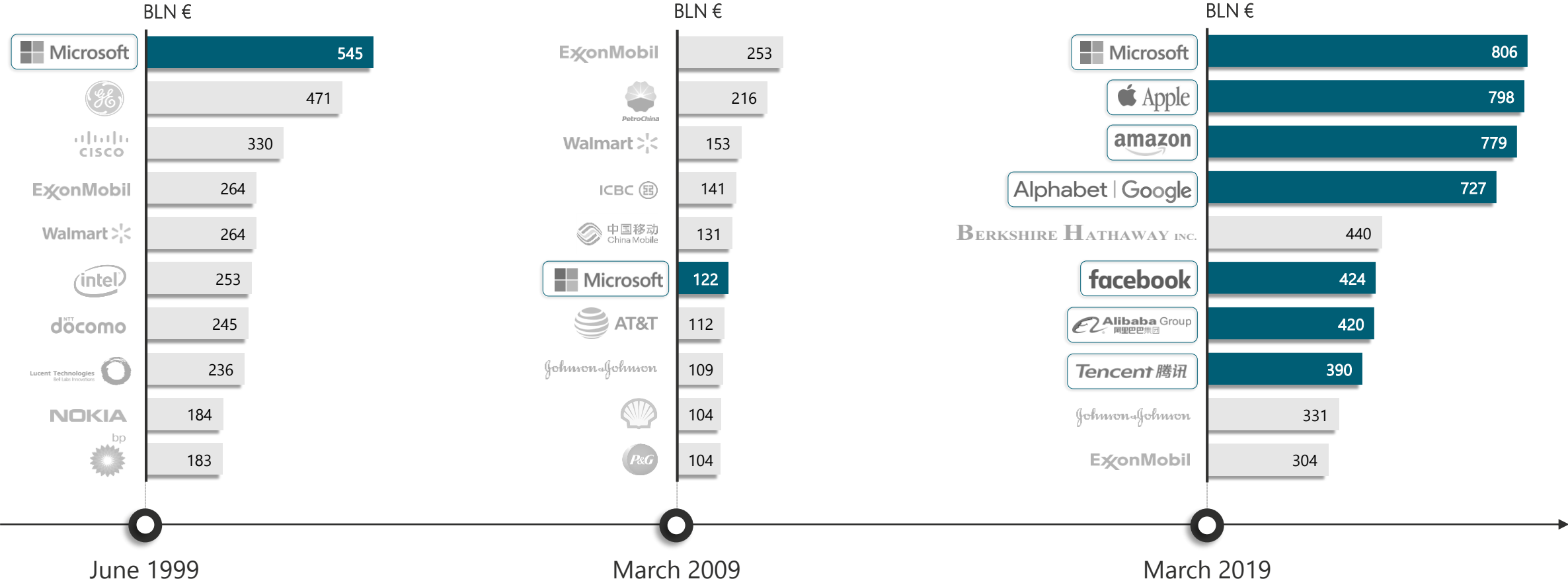
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# 1. OVERVIEW

# 1.1 Market value

## TOP 10 COMPANIES BY MARKET CAPITALIZATION

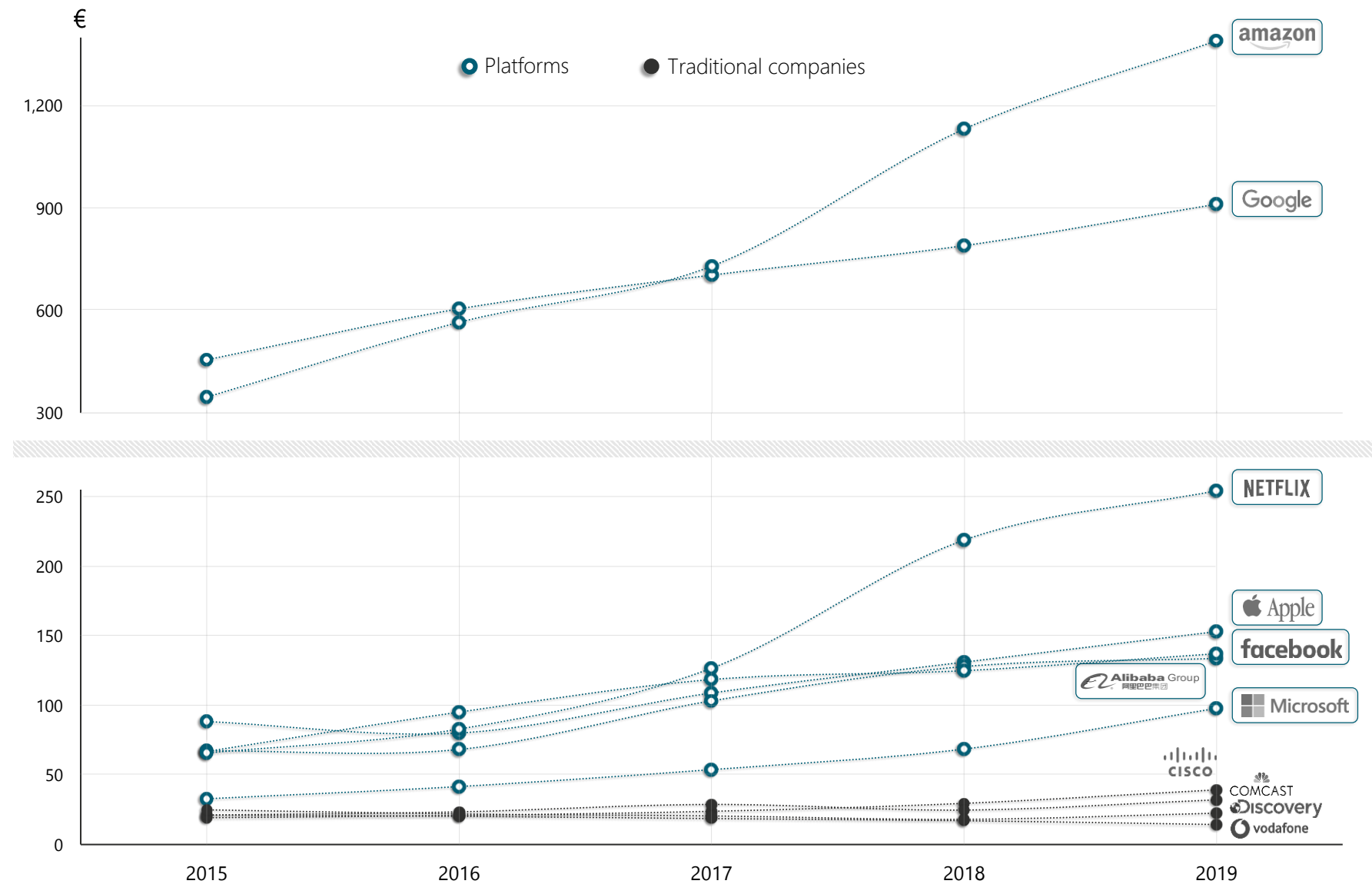


### Platformization of the global economy

The analysis of the companies' market value over the last 20 years shows the growing role played by online platforms. Despite their more recent set-up, platforms hold today 7 out of the top 10 worldwide positions in terms of capitalization. Platforms are not just totally changing the communications sectors, but both the economy and contemporary society as a whole

# 1.2 Stock prices trend

PLATFORMS AND TRADITIONAL COMPANIES STOCK PRICES  
(monthly average price)



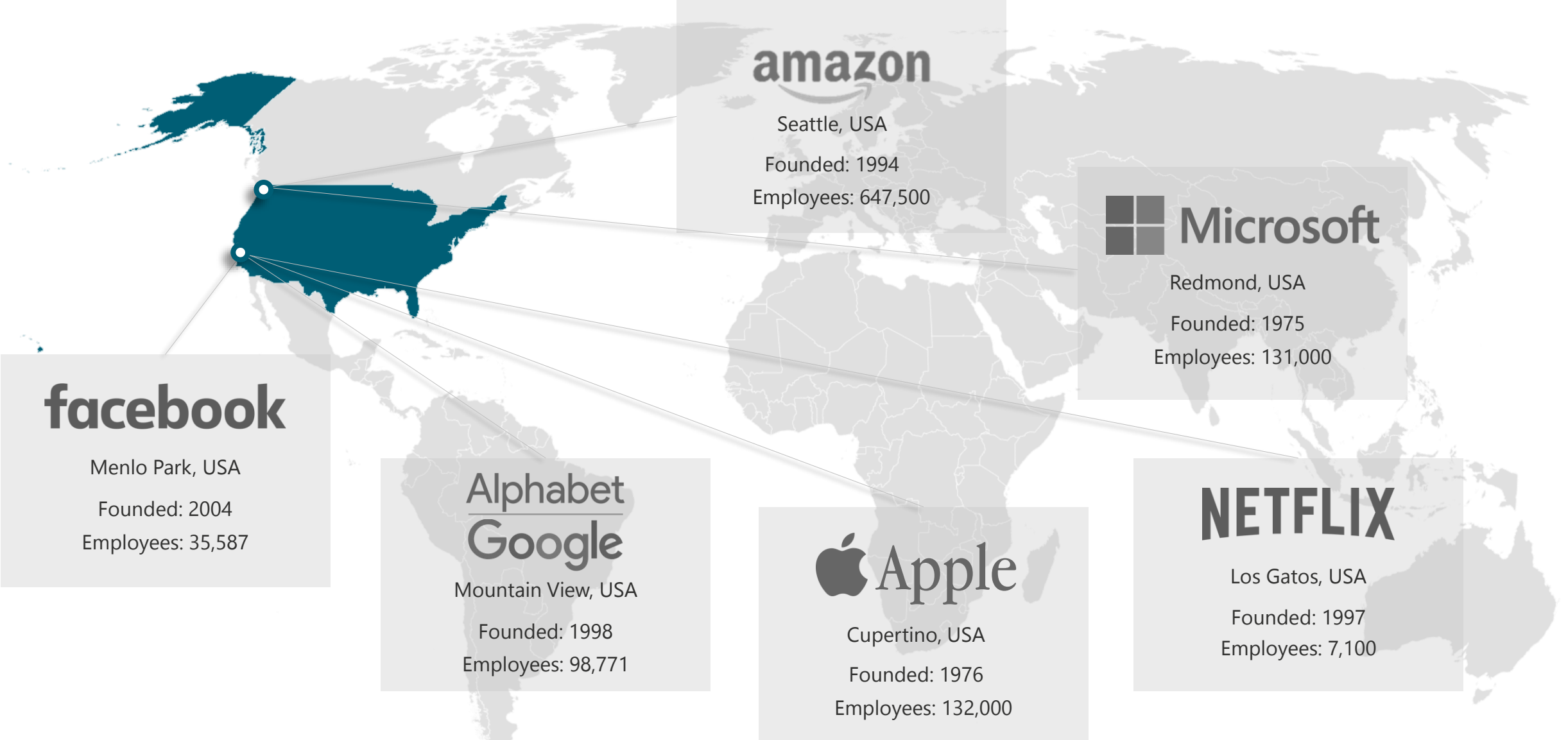
## A brand-new paradigm: the leap forward of online platforms

In the last few years, while the value of companies operating in the traditional sectors remained stable, that of online platforms has experienced a real leap forward. This shows a **paradigmatic discontinuity**.

The new paradigm relies on a **multi-sided structure**, where platforms act as intermediaries. In this context, **users' data** play a crucial role in making profits both via **online advertising**, and in **revolutionizing the provision traditional services** (from retail trade to postal services, from audiovisual and music entertainment to the automotive sector, up to new financial services). Finally, online platforms are enabling the **creation of new markets**.

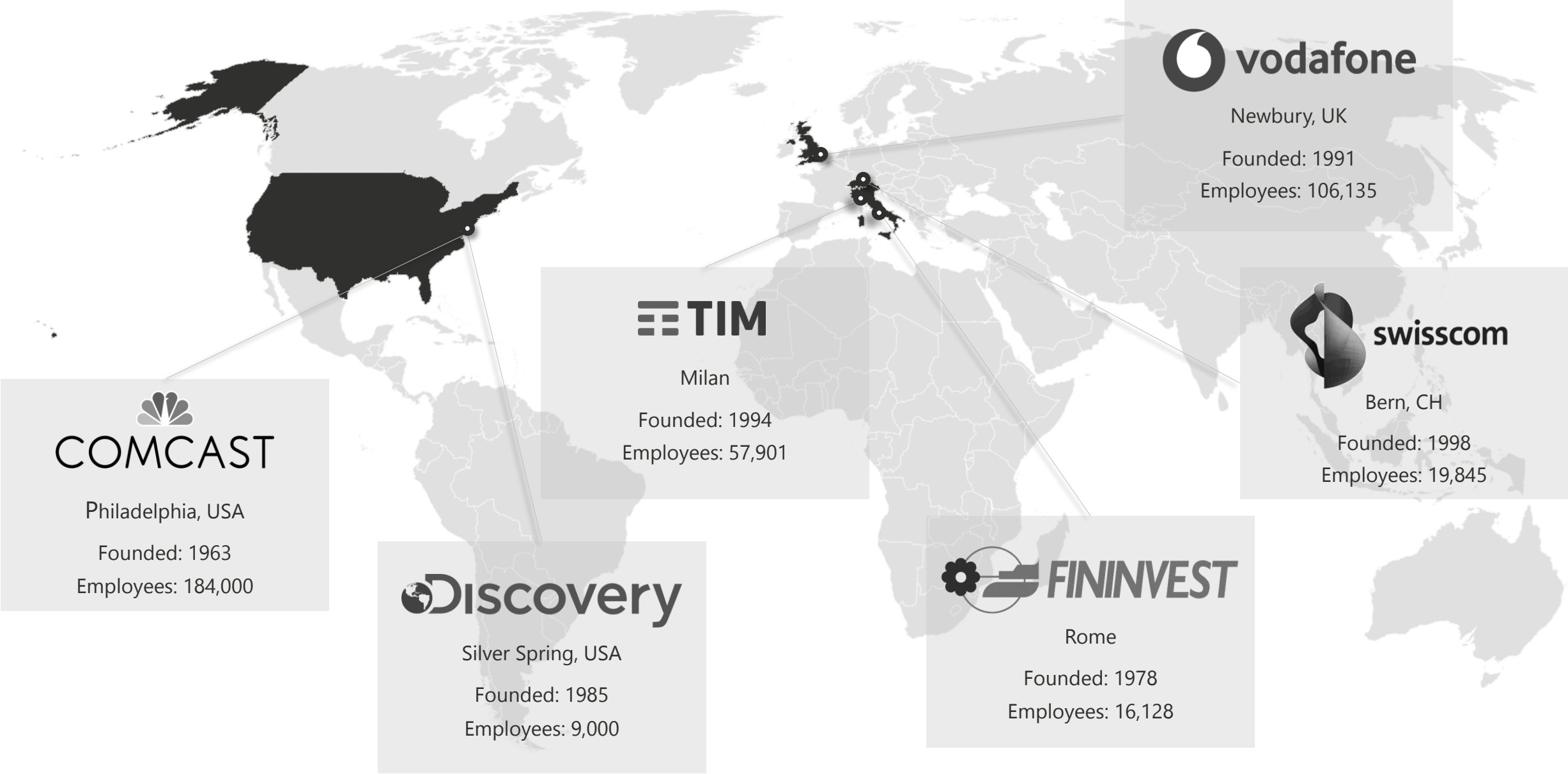
The growing stock value, the high profit margins, the capability of operating on a global scenario (therefore exploiting economies of scale in terms of demand and supply) allow very high technical and research-related investments, hence the chance of being a **leading player** in all **enabling technologies**: from cloud to quantum computing, from big data analytics to blockchain

# 1.3 Core analysis: main online platforms active in Italy

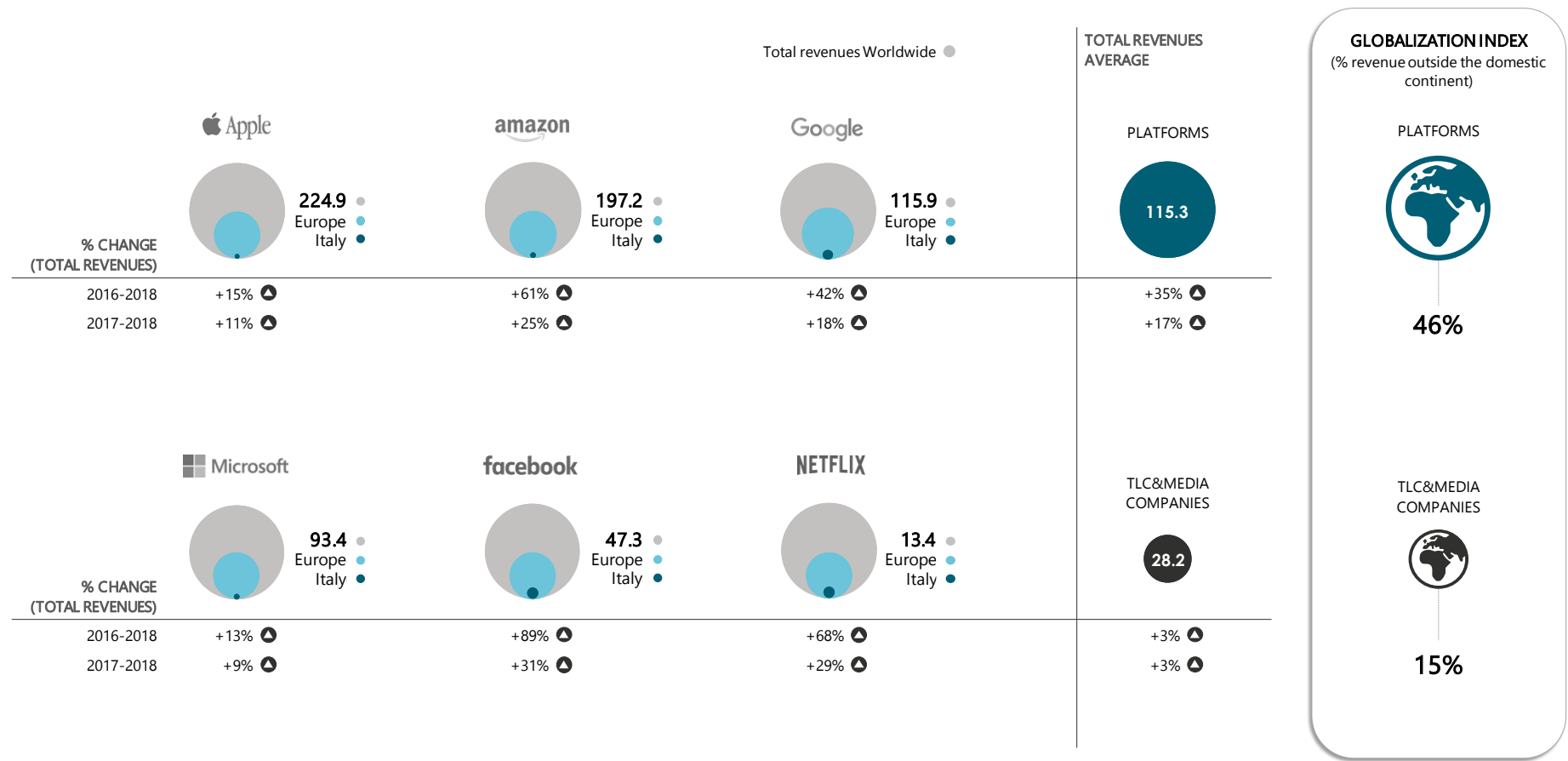


Due to the current insignificance on the Italian market, the current analysis will not take into consideration online platforms such as Alibaba  
From now on, Google means the entire Alphabet group  
The founding year of Alphabet Inc. is 2015

# 1.4 Comparison: main Tlc&Media companies active in Italy



TOTAL VALUES AND GLOBALIZATION (bln €; 2018)



Platforms' total revenues worldwide

692 bln €

This value grows of 35% compared to 2017, and it is four times higher than the one achieved by the main traditional telecommunications and media companies, also due to the presence of the platforms in the markets all over the world. While the average revenues earned by a platform exceed 115 billion euros, those earned by a telecommunications and media company do not reach 30 billion

Greater globalization compared to Tlc&Media companies

46% vs. 15%

As they mainly offer intangible services, platforms achieve almost half of their revenues outside the domestic continent. Such figure is three times lower for Tlc&Media companies, which are disadvantaged in countries where they do not have infrastructures

First platform by revenues

APPLE

Differently, Google is the first platform in terms of revenues in Italy within the Integrated Communications System

# 1.6 Employee productivity

## Higher platform productivity compared to TLC&Media companies

0,7 vs. 0,4 mln € per employee

Overall, the revenues generated by a single employee of an online platforms are **53% more** than the ones made by an employee in the telecommunications and media companies.

Amazon - which performs activities more similar to the traditional sectors (e.g. logistics) - shows lower values, closer to those of TLC&Media companies

### VOD vs. traditional audiovisual media services

#### NETFLIX

Netflix has a productivity index (1.9 million euros per employee) 4 times higher than Comcast, one of the World's leading audiovisual operators

### E-commerce vs. traditional trade

#### AMAZON

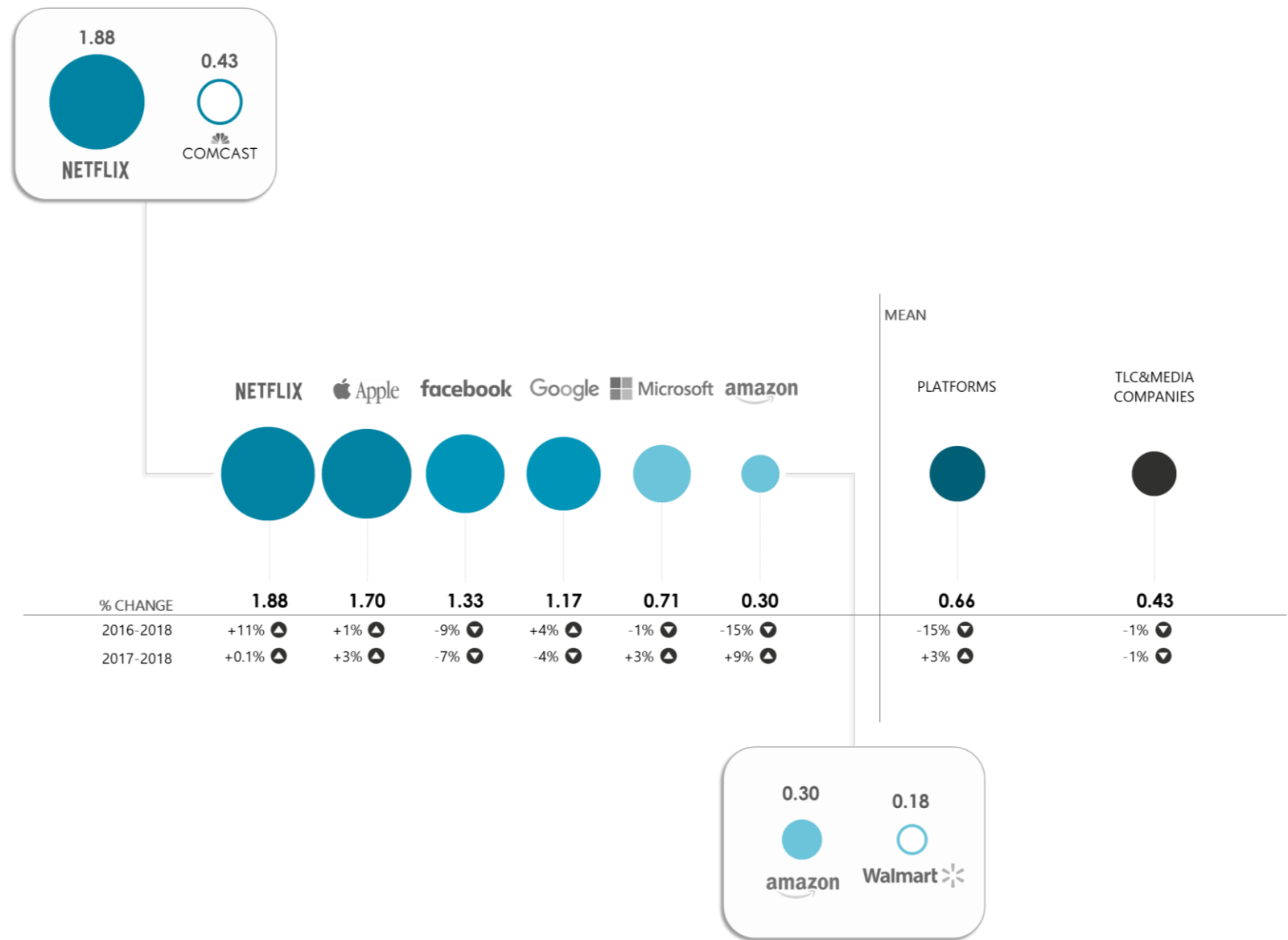
Despite being the platform with the lowest revenue per employee, it has a value (300 thousand euros) almost twice that of Walmart, the World's largest traditional distributor

### ■ Critical issue

#### Job-related risks

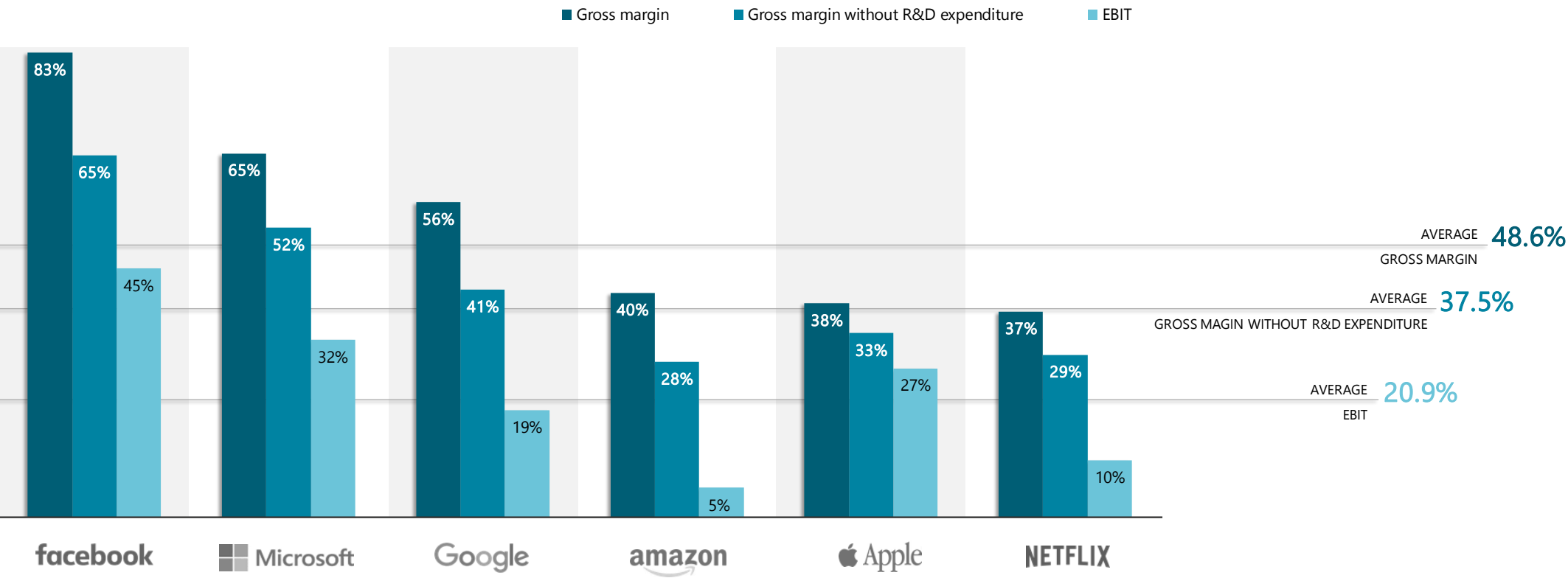
The high productivity values of online platforms indicate, on the one hand, a higher level of innovation but, on the other, conceal the **risk of a lower recourse to the workforce**, especially of middle-level qualifications and traditional workers and in countries **outside the domestic context**

GLOBAL REVENUES PER EMPLOYEE (mln €; 2018)



# 1.7 From gross margin to EBIT

GROSS MARGIN AND EBIT (% of revenues; 2018)



## Average gross margin

49%

The gross margin varies from Facebook's 83% to Netflix's 37%.

Different income typology reveal both the different **performance of core activities** and the management structure of companies

## Critical issue

### Gross margin and returns to scale

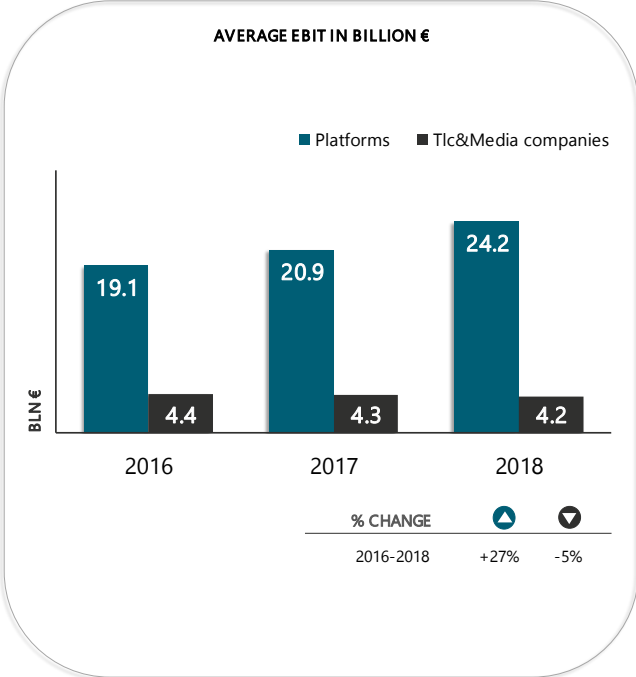
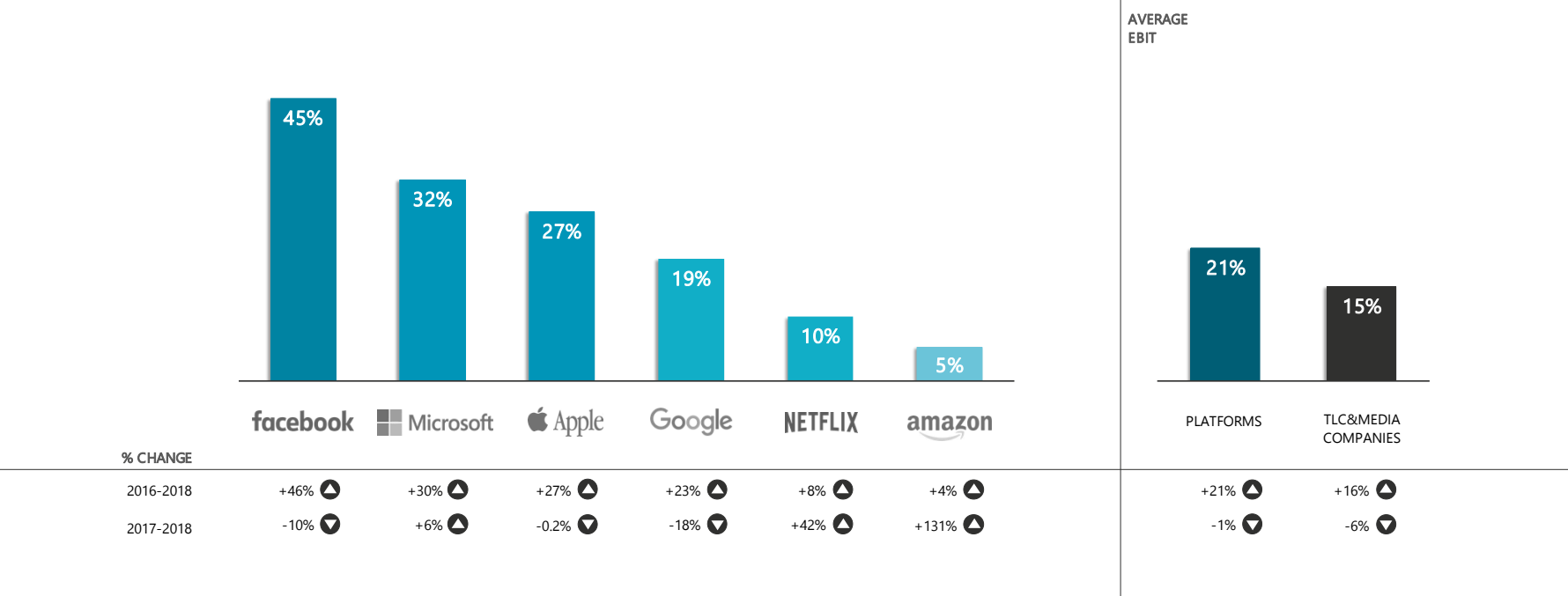
The gross margin of 49% is **high** due to **low marginal costs** and **significant fixed** (and **sunk**) **costs**, which, together, push to exploit, at a global level, increasing **returns to scale** (i.e. **economies of scale**). The presence of such forces increases the break-even point and makes some digital markets **less contestable**

## From gross margin to EBIT

### 11% average R&D expenditure

The gross margin is reduced by 11 p.p. due to **innovation-related expenditure (R&D)**, reaching an average of **37%**. Further 17 p.p. concern **general and administrative expenses, marketing and sales** (advertising, personnel, consultancy, ...), which, in total, bring EBIT to **21%**

PROFITABILITY INDEX (EBIT as % of revenues; 2018)



Online platforms vs. TLC&Media companies

21% vs. 15%

In 2018, the platforms’ average EBIT exceeded that of the TLC&Media companies by 6 p.p. **The comparison of EBIT in absolute terms is even tougher:** while the average EBIT for platforms is equal to **24 billion euros**, the corresponding value for TLC&Media companies stops at **4 billion**

EBIT vs. gross margin

The EBIT shows a **marked variability**, ranging from Amazon’s 5% to Facebook’s 45%. Such trend stems not only from a different gross margin (Facebook also shows a greater gross margin), but also from different innovative (expenditure in R&D), administrative and marketing strategies

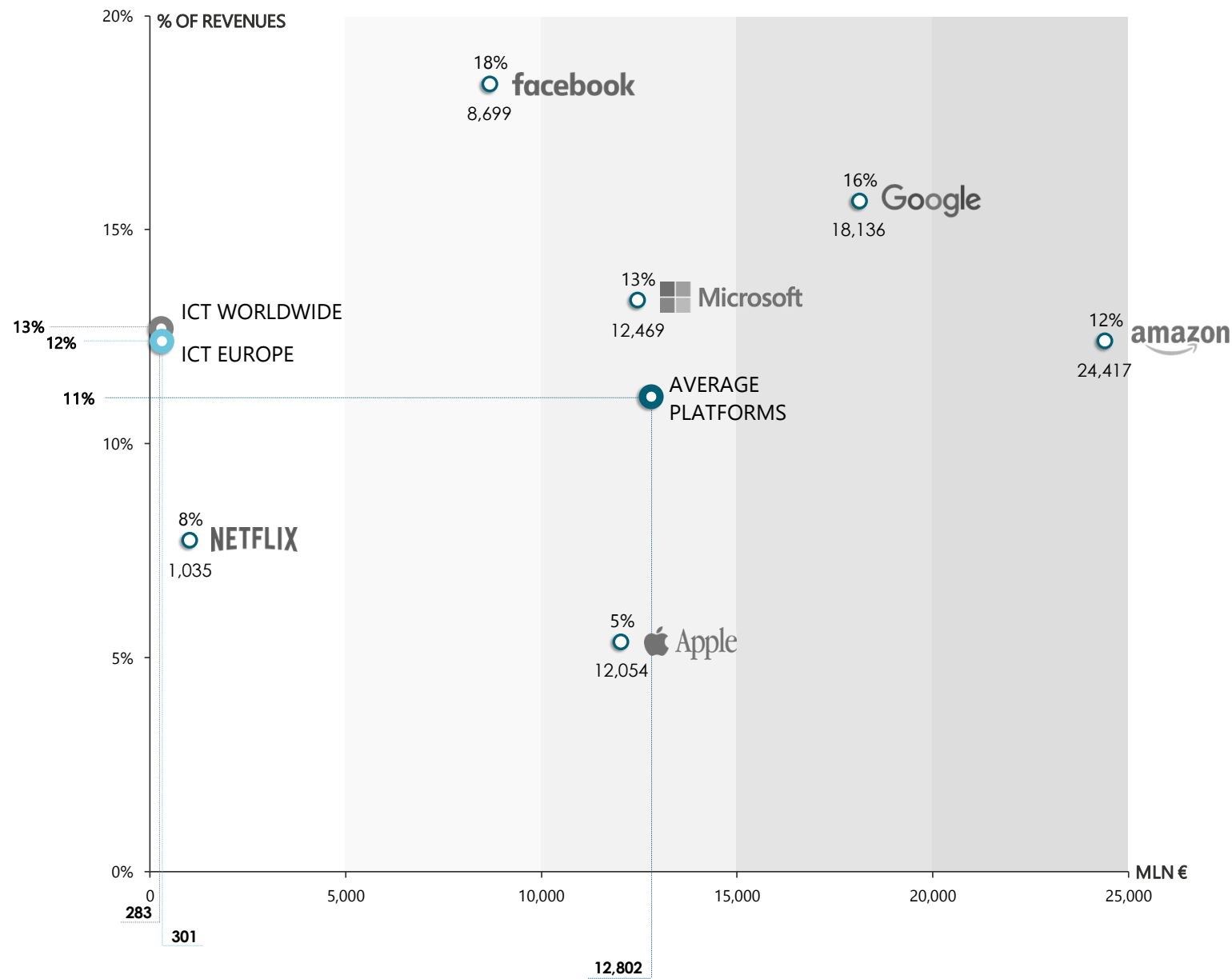
Average growth over the past 3 years

+27% vs. -5%

Unlike TLC&Media companies - which have experienced a slight decrease in the same period -the growth rate of platforms’ profitability (10-15% per year) is **very strong**

# 1.9 R&D expenditure

## R&D costs (2018)



### High figures for R&D costs

13 bln €

Platforms' average R&D expenditure in 2018 amounts to 13 billion euros. Such value ranges from Netflix's one billion euros to Amazon's more than 24 billion. With 9 billion euros, Facebook shows the highest percentage (18% of revenues) in R&D. Such level of expenses in projects with a **high intrinsic risk** can only be managed by very large companies

### Comparison with other ICT companies

11% vs. 12%, but  
13 bln € vs. 300 mln €

Although the percentage value is similar (11% against 12%), in absolute terms, the average amount of R&D costs made by the platforms is **incomparable** with that of ICT companies both at EU and global level: 13 billion euros per platform against 300 million per ICT companies

### ■ Critical issues

#### Barriers to entry

The high level of R&D expenditure represents, on the one hand, a **technological renewal factor**, while, on the other hand, it is a **significant barrier to entry** into digital markets

# 1.10 Investments in assets

## Expenditure in asset

195 bln € in 3 years

Technical investments in the last 3 years amount to 195 billions (about 65 billions per year).  
The **main asset typologies** are land and buildings, plants and equipment, data centers and other hardware and software infrastructures, audiovisual content, trademarks and patents, goodwill generated by companies acquisitions

## Comparing investments: platforms vs. TLC&Media

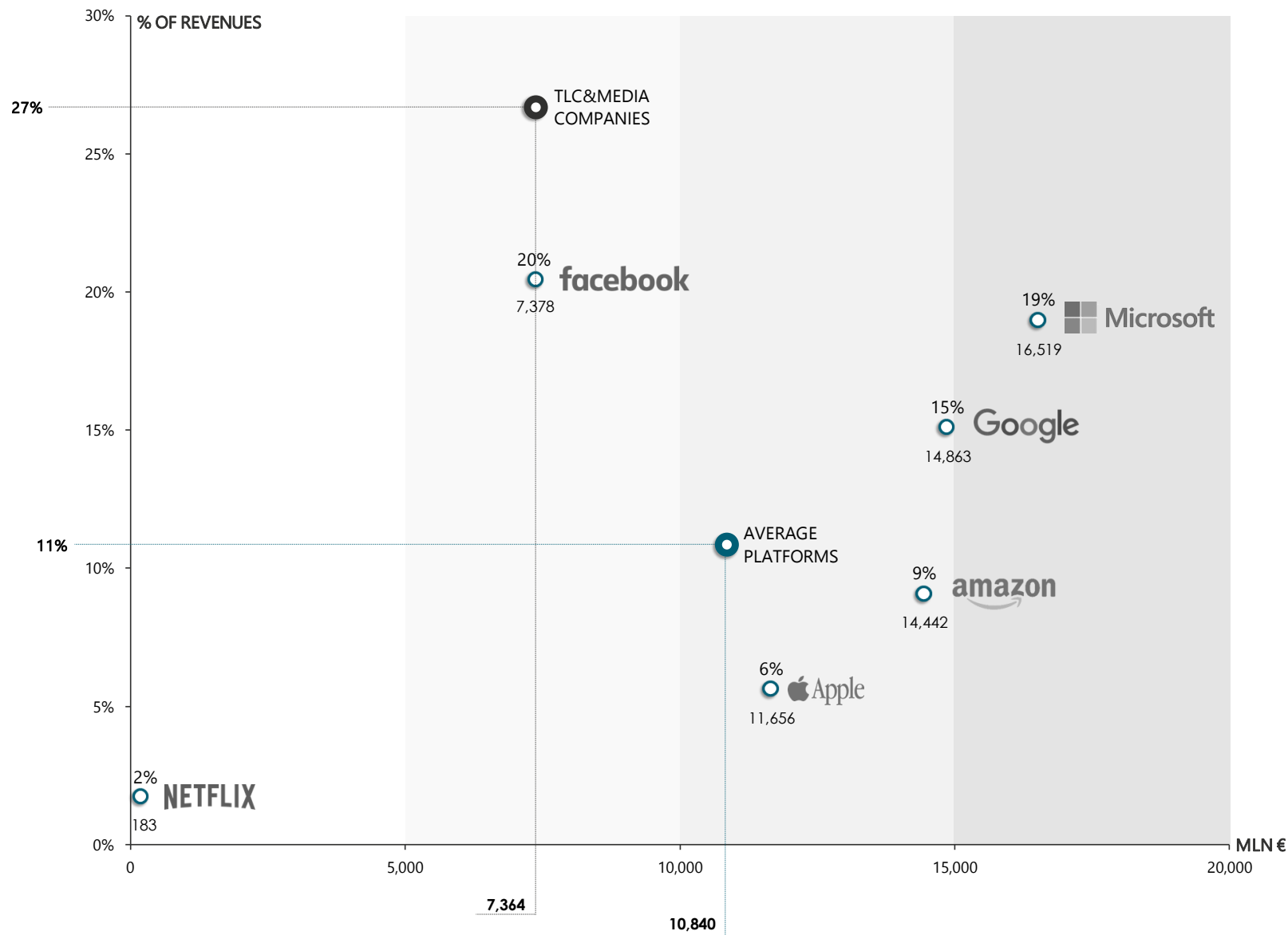
11 bln € vs. 7 bln €  
11% vs. 27%

Every year, on average, each platform invested around 11 billion euros, equal to 11% of its net revenue. By contrast, as regards TLC&Media companies, they made smaller investments in absolute terms (7 billion euros per year), which is however significant in terms of percentage of their turnover (27%)

## Critical issues

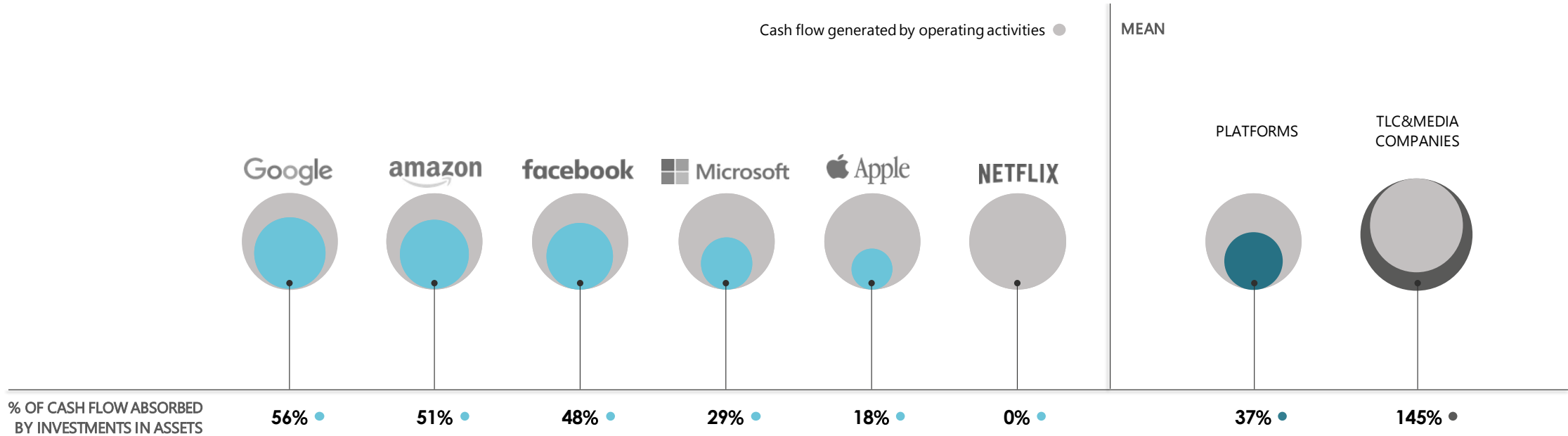
Assets also represent **barriers to entry**, both of exogenous and endogenous nature

## INVESTMENTS (average 2016-2018)



# 1.11 Cash flow and assets

## CASH FLOW ABSORBED BY INVESTMENTS IN ASSETS (2018)



The percentage of cash flow absorbed by investments in assets is calculated as the ratio between the total of purchased assets and the cash flow generated by operating activities. For Netflix, all cash flow was absorbed by their operating activities

### Average cash flow absorbed by investments in assets

37%

All platforms, except Netflix, finance technical investments via their cash flow from operating activities. The rest of their liquidity is therefore used for their financing activities and other investing activities

### High self-financing capacity

Annual cash flow:  
32 bln € on average

On average, the cash flow provided by platforms in 2018 is equal to 32 billion euros. Using just over a third of such cash (37%), platforms are able to finance their investments in assets. This shows a **very high self-financing capacity** (comparable to that shown by some credit institutions)

### TLC&Media companies have resorted to debt to finance investments

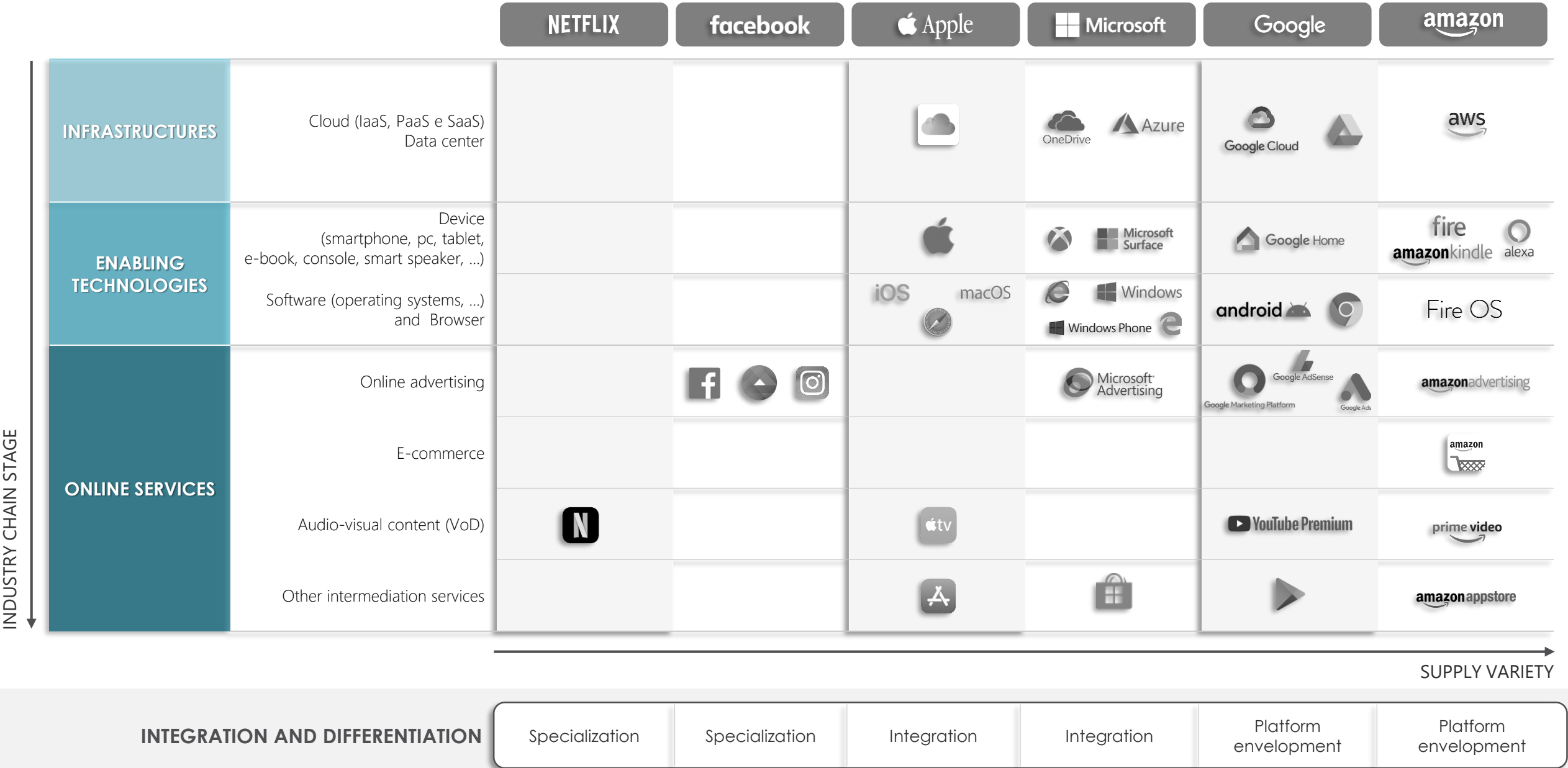
145%

Unlike platforms, TLC&Media companies investments in assets are on average **higher than their cash flow**. Such players therefore have resorted to debt for the exceeding part

A hand is holding a color calibration chart with various color patches over a dark, textured surface. The chart is partially visible, showing several color patches in shades of blue, green, and brown. The background is dark and out of focus, with a bright light source creating a strong highlight on the right side. The overall composition is artistic and technical.

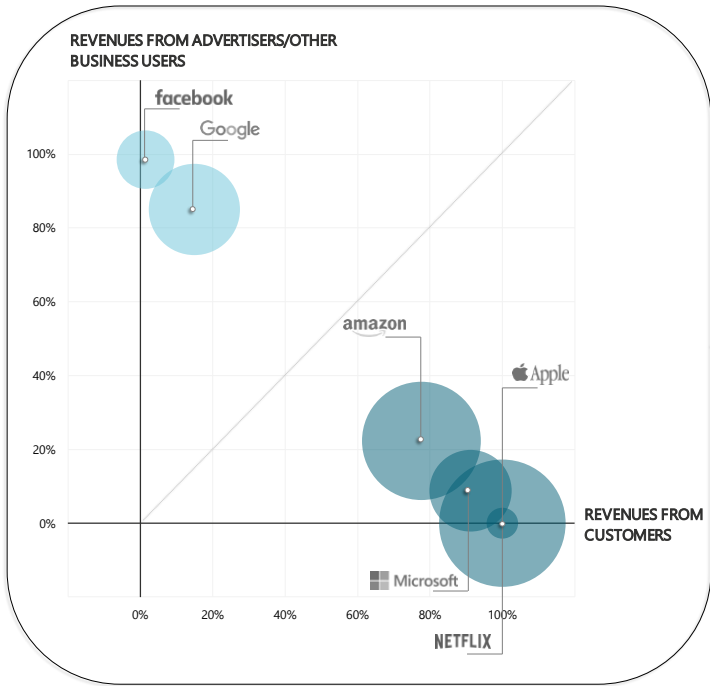
## 2. ACTIVITIES AND MARKETS

# 2.1 Activities and services

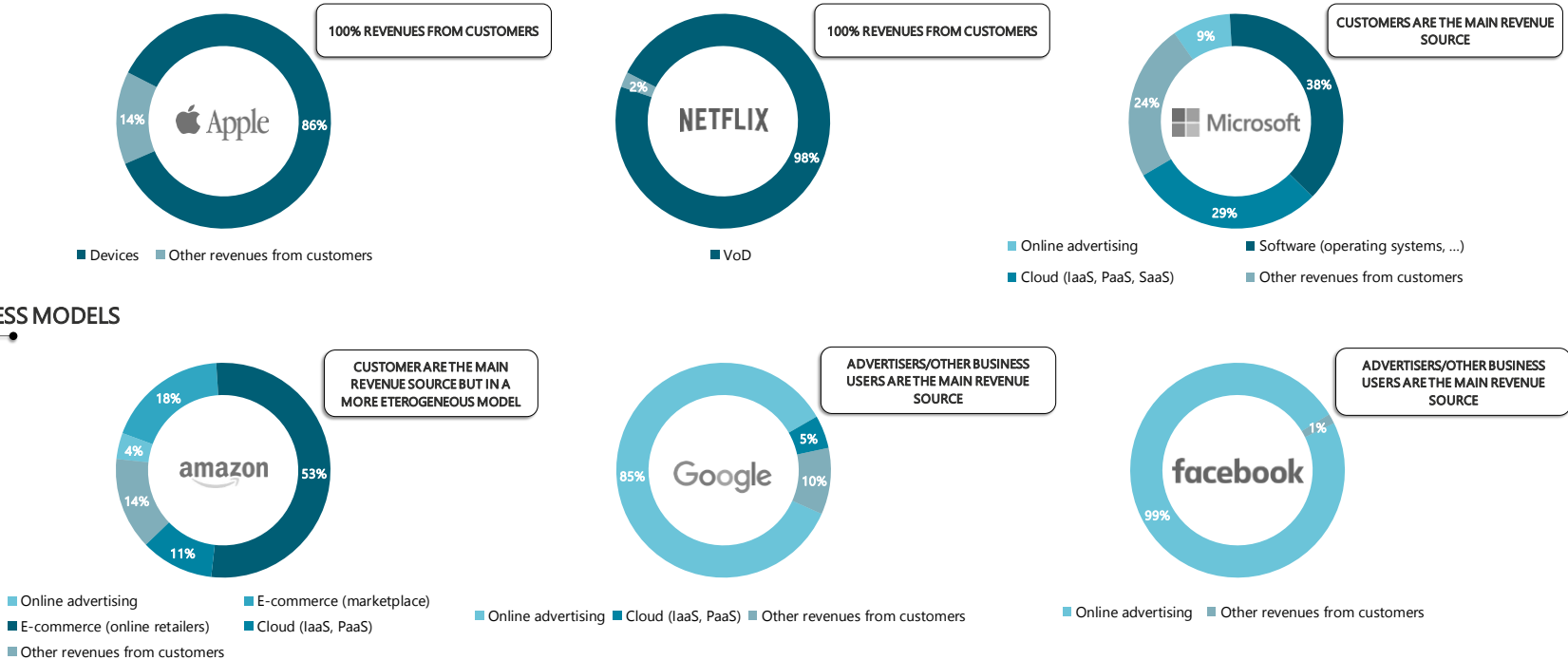


# 2.2 Business models

## REVENUES BY ACTIVITY(% of the total; 2018)



### BUSINESS MODELS



### Business models where end-users are the exclusive or prevalent source of revenue

#### APPLE, NETFLIX, MICROSOFT

For **Apple** and **Netflix**, all revenues are generated from the sale of products/services to users (mainly fixed and mobile devices in the case of Apple and audiovisual content in the case of Netflix). **Microsoft** also earns revenues from online advertising, despite having a business model primarily based on the provision of software including operating systems), devices and cloud services to users

### Business models with a higher level of heterogeneity

#### AMAZON











Amazon has a more diversified business model. As a matter of fact, although its main source of revenues is still **e-commerce** and the provision of cloud services, Amazon is increasingly strengthening its presence in the online advertising sector, as well as in e-commerce intermediation services (marketplace segment)

### Business models where advertising constitutes the main source of revenue

#### GOOGLE, FACEBOOK

While online advertising generates 99% of the Facebook revenues, it represents 85% of the Google total revenues (including both direct and third-party online advertising). Hence, the availability of end users data which allows their accurate profiling, represents a strategic asset; this confers an economic advantage vis à vis competitors and advertisers

## 2.3 Global shares by activity

	Google		amazon		Apple		facebook		Microsoft		NETFLIX	
	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank	Share	Rank
 Cloud (IaaS) Revenues, 2018	4%	4	48%	1					16%	2		
 Vocal assistance Smart speaker number, 2019	31%	2	32%	1	6%	6						
 Device (mobile) Revenues, 2018					50%	1						
 Operating systems (desktop) Pages viewed, Nov-2018/Oct-2019	1%	5			14%	2			77%	1		
 Operating systems (mobile) Pages viewed, Nov-2018/Oct-2019	75%	1			23%	2			0,2%	5		
 Browser Pages viewed, Nov-2018/Oct-2019	64%	1			15%	2			5%	4		
 Online advertising Revenues, 2018	32%	1	3%	4			19%	2	2%	7		
 E-commerce Revenues			n.a. <sup>(*)</sup>	1								
 App store (mobile) Revenues (Android and iOS), Jun-2019	38%	2			62%	1						
 Audio-visual content (VoD) Revenues, 2018	n.a.		n.a.		n.a.						51%	1

### Competitive layout of the platforms' sectors of activity

At the global level, the examined platforms hold the top rank positions in all the sectors where they operate (both upstream and downstream in the industry value-chain). With the exception of the e-commerce, global market shares of first-ranking platforms are never lower than 30%, reaching values not far from 80% in the case of operating systems (desktop and mobile)

### ■ Critical issues







#### High concentration

Market contexts where platforms operate are featured by factors influencing their structure. In particular, **network externalities** (direct, indirect and cross-side), **increasing returns to scale**, **obstacles to multi-homing**, **switching costs** and **sunk costs** tend to bring about an **increase of the concentration level**. Such factors, if simultaneously present or combined, risk to lead to situations where a single leader controls most of the market (*the winner takes all* - WTA)






<sup>(\*)</sup> As for the e-commerce the relevant analysis confirm the Amazon leadership in terms of revenues. However, given the complexity of estimating the revenues of all the sectors involved, AGCOM believes that factsheets, data or values on the global shares are not sufficiently reliable

## 2.4 Shares and multi-homing in free services

### SHARES IN FREE SERVICES

	Google		facebook	
	Share	Rank	Share	Rank
 Search Minutes spent in a month in Europe (EU5), Oct-18/Sept-19	88%	1		
 Social network Minutes spent in a month in Europe (EU5), Oct-18/Sept-19			76%	1
 Instant messaging Minutes spent in a month in Europe (EU5), Oct-18/Sept-19	1%	4	95%	1
 Email Pages viewed in a month in Europe (EU5), Oct-18/Sept-19	53%	1		
 Maps Minutes spent in a month in Europe (EU5), Oct-18/Sept-19	91%	1		
 App store (mobile) Global number of downloads, 2018	72%	1		

### MULTI-HOMING (USAGE OF DIFFERENT PLATFORMS) IN FREE SERVICES

	Sector index	First platform (% of total platform users)			Second platform (% of total platform users)		
		Total	Desktop	Mobile	Total	Desktop	Mobile
 Search Duplication of unique visitors in Europe (EU5), Sept-19	92	37%	46%	10%	82%	71%	89%
 Social network Duplication of unique visitors in Europe (EU5), Sept-19	198	37%	15%	39%	93%	81%	99%
 Instant messaging Duplication of unique visitors in Europe (EU5), Sept-19	39	11%	n.a.	11%	82%	n.a.	82%
 Email Duplication of unique visitors in Europe (EU5), Sept-19	55	22%	18%	18%	55%	34%	61%
 Maps Duplication of unique visitors in Europe (EU5), Sept-19	28	7%	6%	7%	70%	64%	86%

Multi-homing indicates the usage by users of different platforms in order to use digital services. The multi-homing sector index estimates the overall value of users' duplications between different platforms in a month: it is equal to 0 in the absence of multi-homing, namely if each individual uses a single platform

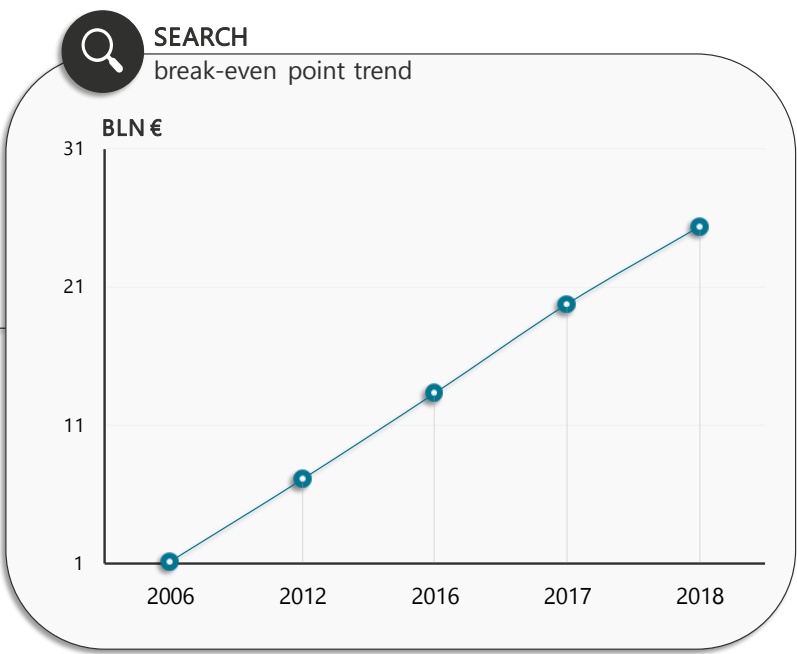
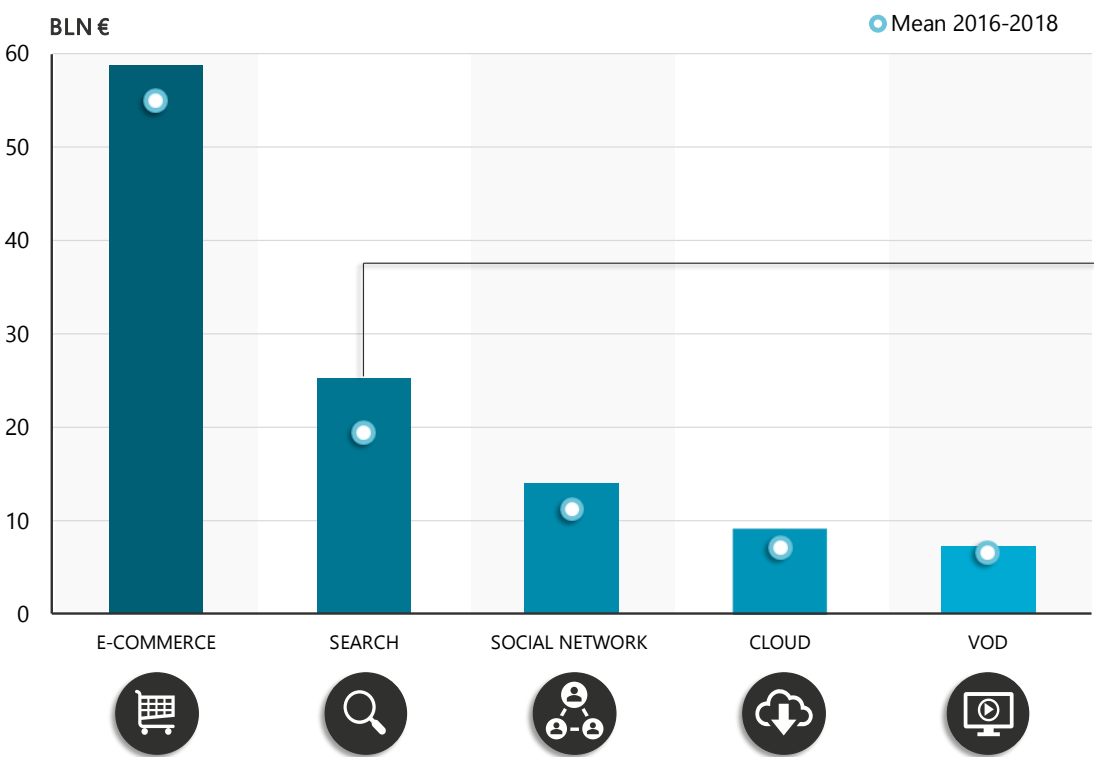
#### ■ Critical issues

Highly concentrated reach  
and low multi-homing level

Google and Facebook, which adopt business models mainly financed by advertisers, **hold, in terms of reach, the leadership as for the services offered for free**. While Google firmly holds the record in the search, e-mail (Gmail), maps (with Google Maps / Earth, Waze) and in the downloads application (via the Google Play Store), Facebook is the leader in social networks (with Facebook and Instagram) and instant messaging (with WhatsApp and Messenger). Moreover, these values - do to **the strong network externalities** which lead the user to choose platforms with wider installed customer bases - are associated with **low levels of multi-homing of the first operator**, which further strengthens the emergence of a single platform. Furthermore, the joint action of such factors, due to the typical feedback system of two (or more) sided markets, may have repercussions on the concentration level of revenues stemming from online advertising

# 2.5 Obstacles to competitive development in the relevant sectors

## ESTIMATED OPTIMAL MINIMUM SIZE (BREAK-EVEN) IN THE SECTOR (2018)



For each sector, the optimal minimum size has been globally estimated and is given by the amount of revenues at which the break-even point is reached

### Sectors with the highest obstacles to development

#### E-commerce and Search

In 2018, the profit threshold in the global **e-commerce** market is estimated to be **over 50 billion euros in revenues**, while the break-even point for **search engines** is estimated as **above 20 billion euros**. The values related to other sectors are high too, with a minimum optimal size that **overcomes 10 billion euros** for a non-specialized social network

### Increase in the break-even point of search

#### Over 20 times the 2006 value

Since 2006 the optimal minimum size of a search engine is estimated to have reached **very high yearly growth rates**. In 2018, the search sector's break-even point has increased -of 28% compared to 2017, and has even reached a value **over 20 times higher** compared to that of 2006, that is almost twice the one of 2016

### Critical issues

#### High barriers to development

Where platforms are the main players, break-even values highlight the existence of **high barriers to development** for new entrants. Such **barriers stem from processes of vertical integration and horizontal differentiation** implemented by platforms, and from the **resulting availability of large amounts of user data**, as well as from the - difficult to replicate - **networks equipment and infrastructures**, together with a **huge amount of investments in assets and R&D**, together with a high level of **globalization**

The background of the slide features a close-up, slightly blurred view of a building's facade. Large, three-dimensional, metallic-looking numbers are visible, including '0', '1', '3', and '7'. The numbers are set against a dark, textured background. A vertical white line is positioned on the left side of the slide, and a small teal square is in the top-left corner.

# 3. DATA ECONOMICS

### 3.1 Supplied services and users-related data

	Google	amazon	Apple	facebook	Microsoft	NETFLIX
SEARCH						
SOCIAL NETWORK						
INSTANT MESSAGING						
EMAIL						
MAPS						
VOCAL ASSISTANCE						
APP STORE						
ENTERTAINMENT						
HEALTH						
PAYMENTS						
ANALYTICS						

#### User data acquisition

##### Volume and variety

In the light of the high number of users reached (as well as of the time spent and of the several actions made online), platforms collect a **great amount of user data**. Such data stand out for their volume, variety (in terms of sources, formats and structure) and acquisition speed. Among platforms, **Google, Amazon, Apple and Microsoft** stand out for the **greater differentiation in the acquired data typologies** (searches made, purchases, emails/messages exchanges, requests made to vocal assistants, app and downloaded contents, health-related information and payments made...). Facebook and Netflix, featuring a more specific offer as for determined services, collect data mainly via the social network/instant messaging activities (Facebook) and content use

#### Big Data analytics

##### Data value and competitive advantage

The value of collected data depends on the opportunity to implement more predictable decision-making processes, often in real time. In such sense, **platforms efficiently store and aggregate heterogeneous datasets, adopting sophisticated big data analytics techniques**. Such processes are also made possible by their infrastructural assets, which they constantly update and expand

## 3.2 User data value: typology

### ARPU as an indicator of user data value

When online services are offered for free, an **implicit exchange between users and the platform** takes place. Although there is not a monetary transaction, such exchange is proven by the data transfer from individuals to platforms. Such data transfer is performed by the final user in order to access the services, free of charge.

The availability of a large amount of users data allows platforms to perform accurate users profiling. On such profiling depends the platforms ability to reach specific consumers' targets, so that they can be advertising recipients.

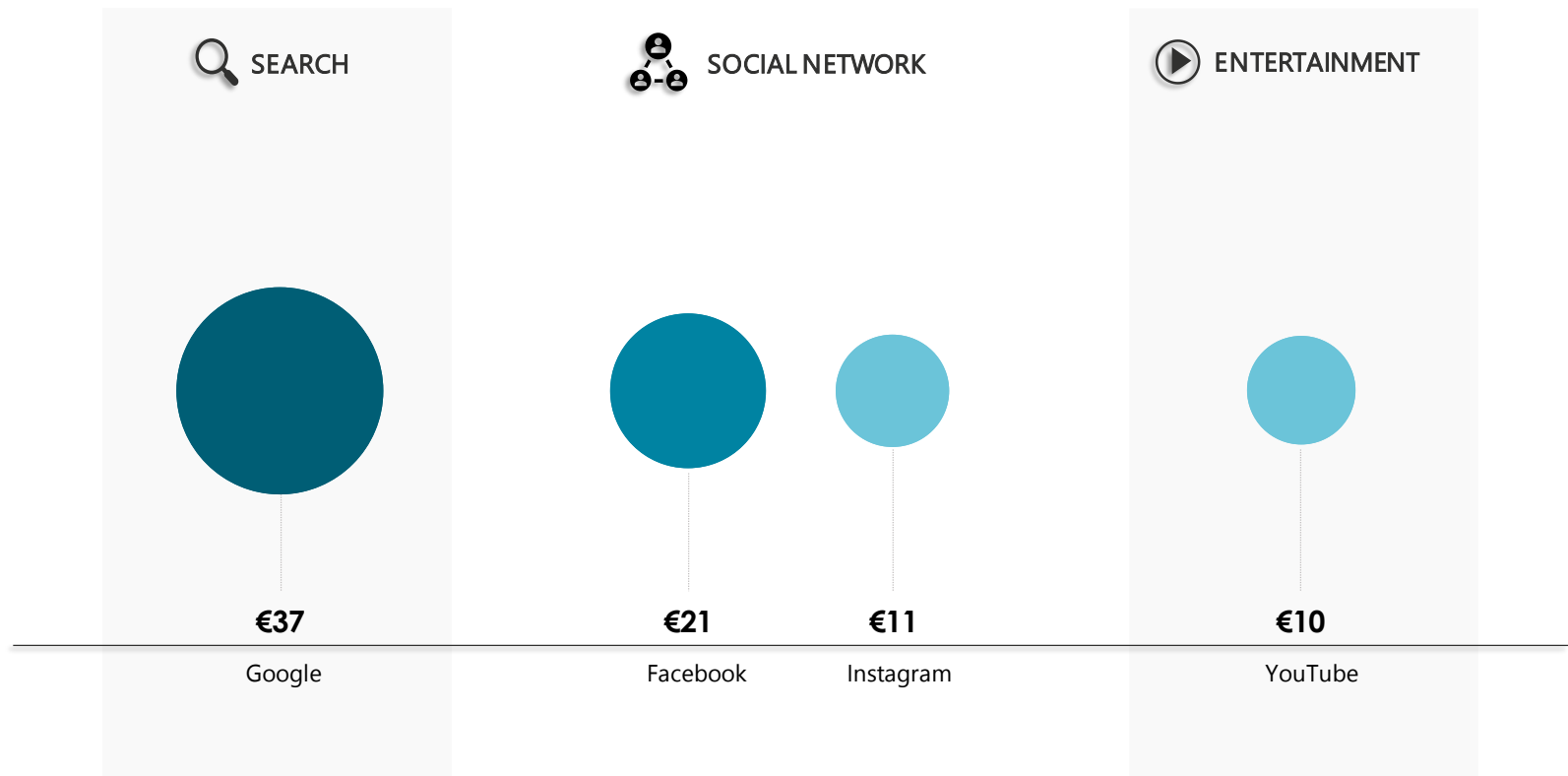
In this context, **ARPU** (given by the ratio between the advertising revenues during the year and the average number of reached users) **provides a measure of the value attached to the (personalized) targeted advertising contacts of the platform**, hence to the value assigned - for advertising purposes - to those data, which is implicitly exchanged for a free service

### Types of data with a greater value

#### Users queries

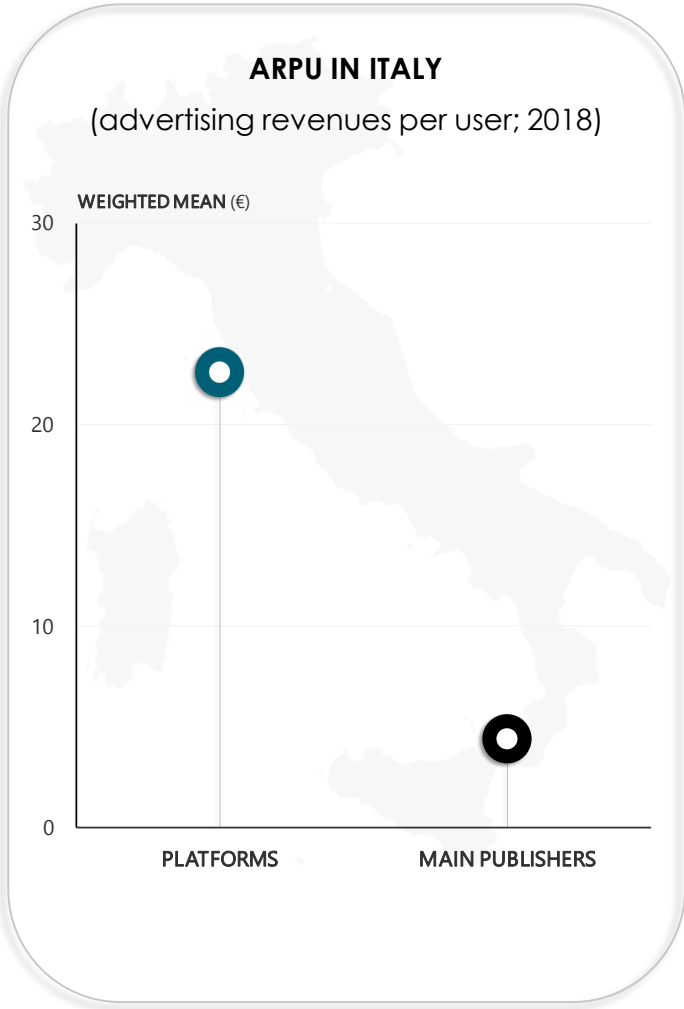
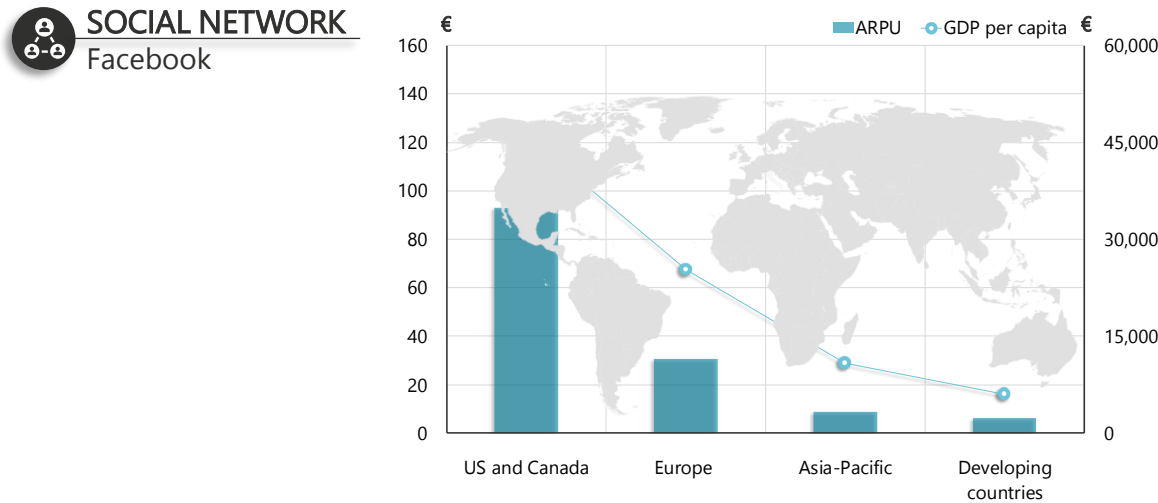
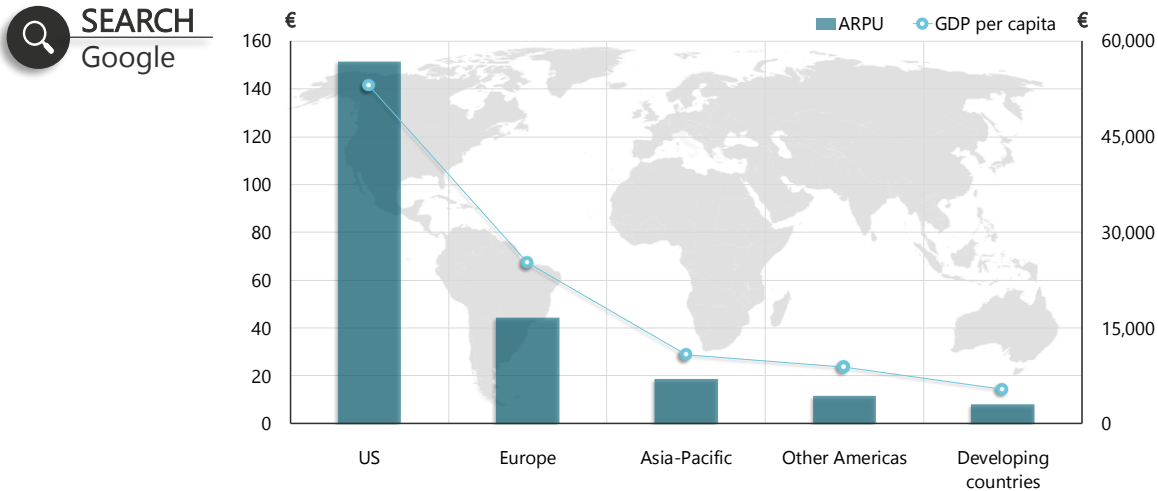
It is estimated that data generated by users through search queries, social networks and free entertainment have an **annual value which ranges between 10 and 40 euros per user**. In more details, data generated by the users' search queries can be considered as a proxy of their own interests, and assume the highest value. The global ARPU related to search queries (by Google) is equal to € 37 per user

### FREE SERVICES GLOBAL ARPU (advertising revenues per user; 2018)



### 3.3 User data value: per capita income and geographical scope

#### FREE SERVICES ARPU BY GEOGRAPHICAL AREA (advertising revenues per user; 2018)



User data value reflects  
willingness to pay

€ 90-150 in US

Both for search and social networks, the US present a clearly superior advertising ARPU compared to other geographical areas (similarly to what happens for per capita GDP and therefore for willingness to pay). On average, the value of the US users' data, for advertising purposes only, is around € 150 per year if generated through search queries. By contrast, it is more than € 90 if originated by social media: 3 times more than the value of the Europeans users' data and 15-18 times that of data of users from developing countries

#### Data market in Italy

In one year, just considering platforms' advertising activities, the turnover generated by data relating to a single Italian user is 5 times more than the entire revenue generated by the main national publishers (newspapers and online portals)

#### Critical issues

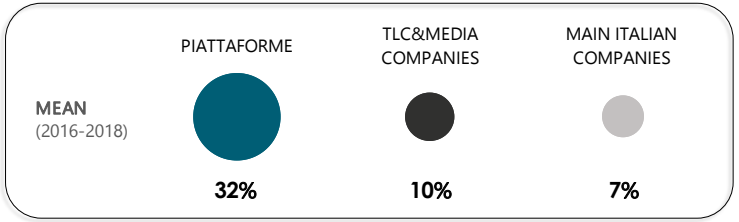
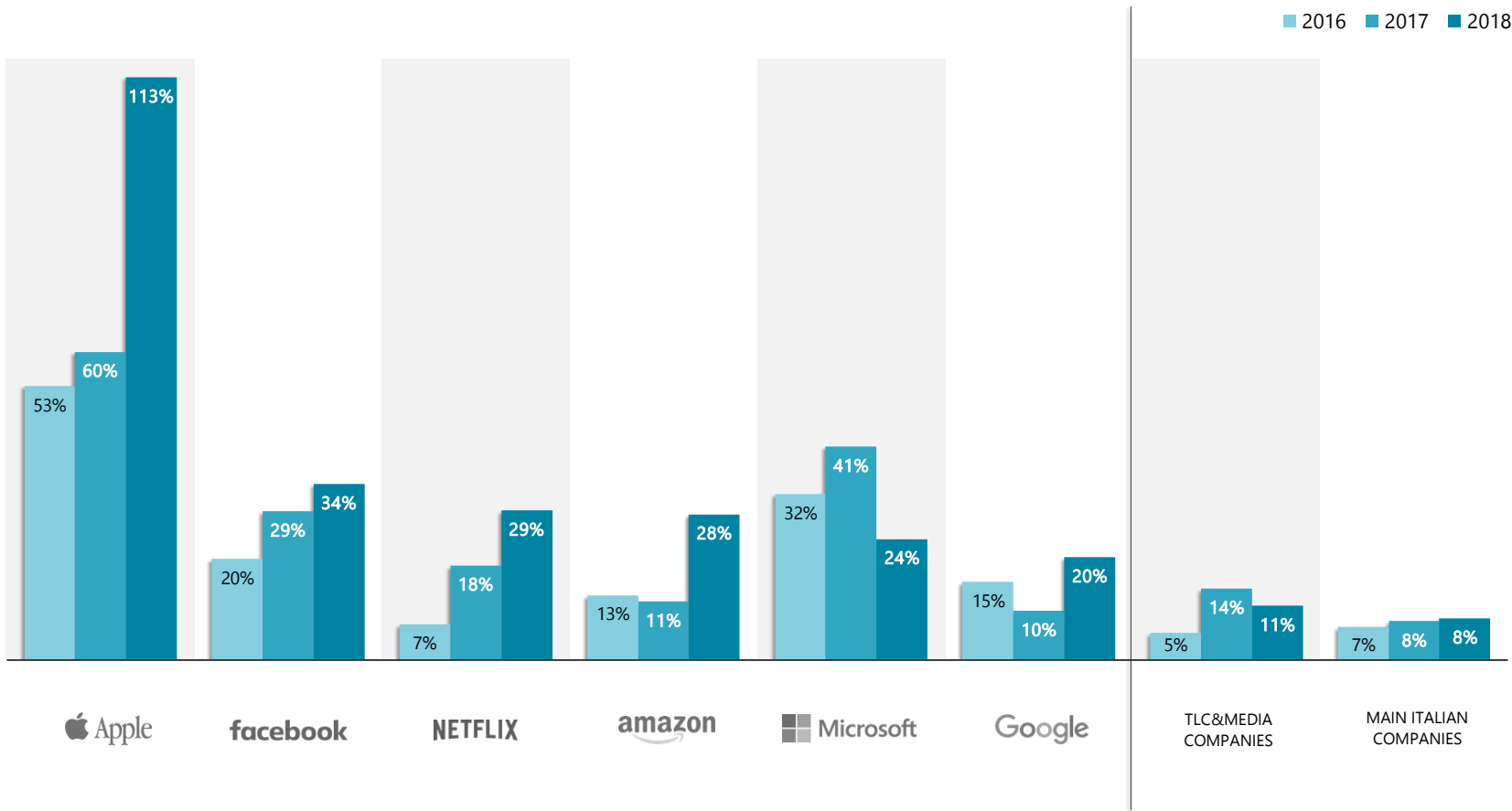
ARPU related to Italian users testifies the persistent difficulty of publishers to compete with platforms for online advertising, the main source of funding for online information

# 4. ECONOMIC INDICATORS



# 4.1 Return on equity

ROE (2016-2018)



## Return on equity of the platforms

32% per year

Over the past 3 years, the return on equity of the platforms has reached very high levels. On average, platforms have a performance equal to 32% per year, while TLC&Media companies have a ROE around 10%. The 2,095 main Italian companies generate an average return of 7% per year

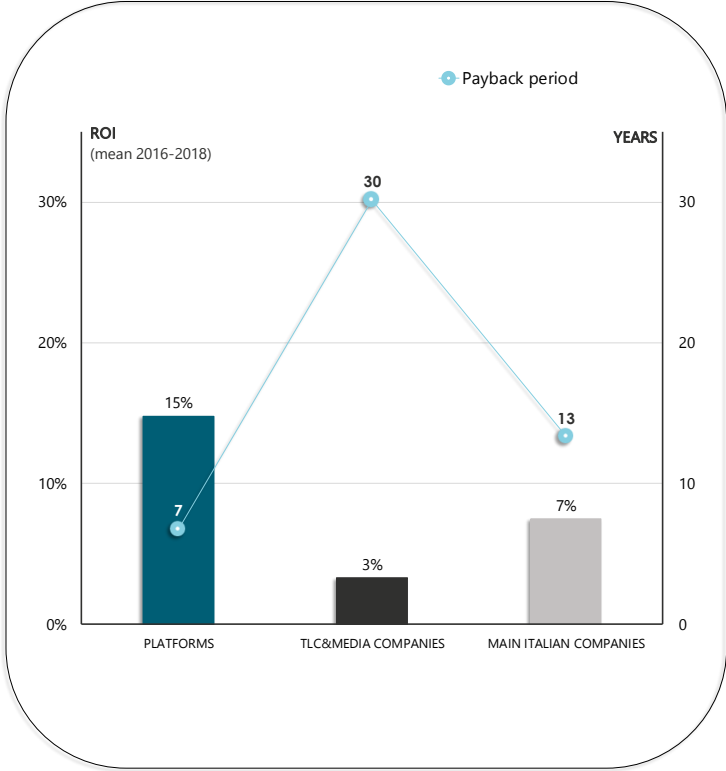
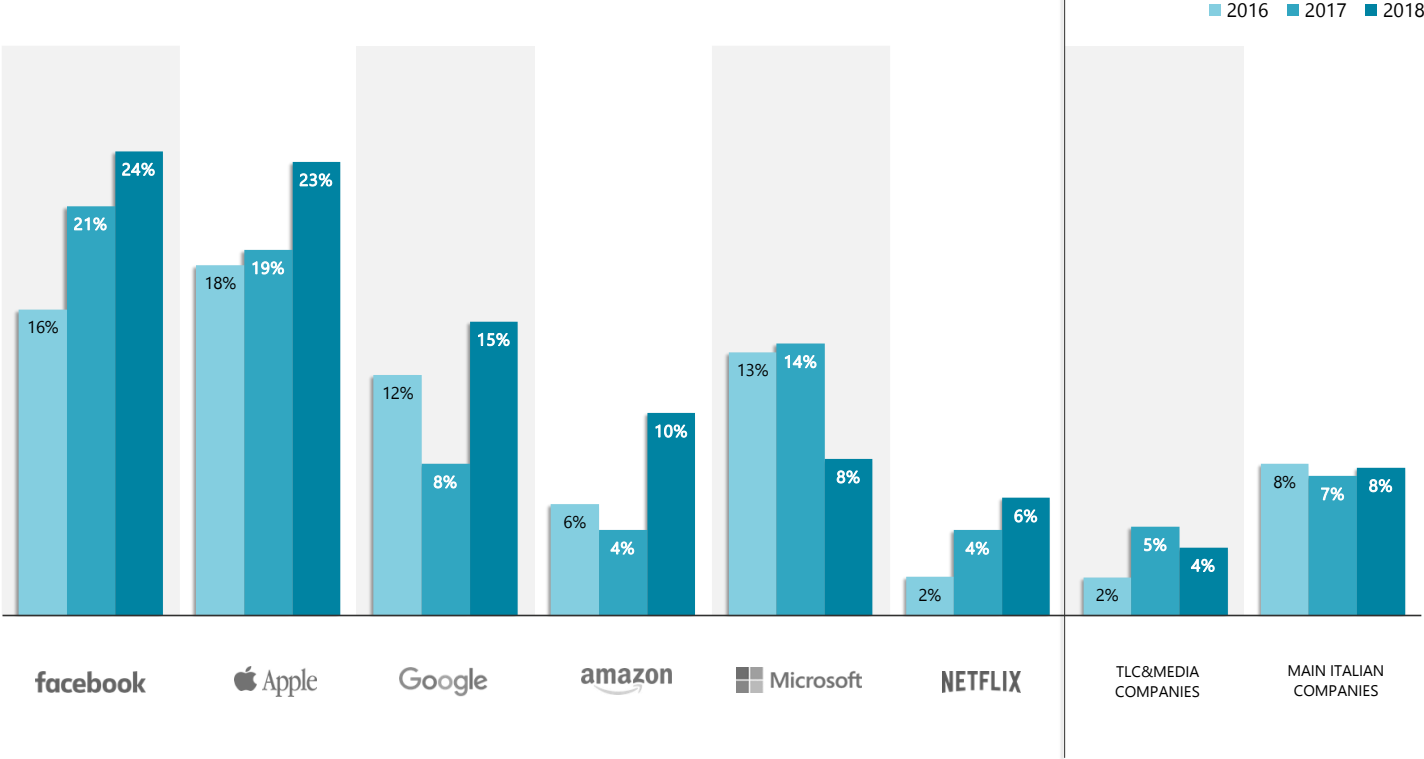
## Appeal on financial markets

+80% of the stock value

The potential of platform equity make them attractive on the financial markets, drawing huge amounts of capital. As a matter of fact, their stock value has doubled in three years, showing a growth trend similar to the return on equity

# 4.2 Return on investments

ROI (2016-2018)



## High return on investment

15% of annual average ROI

The profitability levels of platforms capital are **constantly growing**. On average, in 3 years, ROI has increased by 11%. The return on investments is much lower for TLC&Media companies (3%) and for the major Italian companies (7%)

## Return on investment and payback period

7 years vs. 30 years

The profitability of the investments performed by platforms highlights a **remarkable speed in the technological evolution**. In such sense, in 7 years, these companies are able to recover the economic value of their investments. As a matter of fact, in the case of Tlc&Media companies the return time is instead over 4 times higher (30 years) compared to the one of platforms

## ROI and the technological frontier

Leaders vs. laggards

The high return on investment and speed of the investment return favour innovation and thus are drivers of an **increasingly rapid shift of the technological frontier**. In the markets where **platforms** operate, they **generally are first movers in terms of innovation and technological adoption**. At the same time, traditional companies often show lower returns and longer times in terms of reaction to innovation, widening the gap between them and the platforms

# APPENDIX ON THE METHODOLOGY



All values reported in this document result from AGCOM's elaborations and estimates based on the consolidated annual reports and other data on the companies' financial performances, and on different sources:

- App Annie
- Bank of Italy
- comScore
- eMarketer
- European Central Bank
- European Commission
- Financial Times
- Gartner
- Mediobanca
- PricewaterhouseCoopers
- StatCounter
- Statista
- The World Bank
- Visual Capitalist
- Yahoo Finance

# Definitions (I)

All terms used in this document shall be intended according to the following definitions:

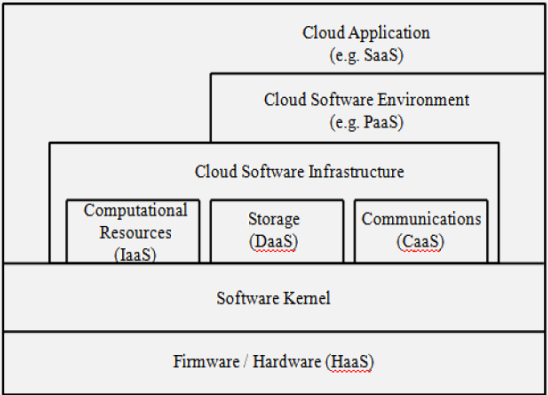
- **ARPU (search)** ratio between the annual revenues from advertising sales on the search engine and the average annual number of unique users of the search engine
- **ARPU (social network)** ratio between the annual revenues from advertising sales on the social network and the average annual number of active users
- **ARPU (free entertainment)** ratio between the annual advertising revenues and the average annual number of unique users of free entertainment services
- **Capitalization** market value of a listed company's share capital. It is calculated by multiplying the current price of a share by the total number of shares in circulation
- **Cash flow absorbed by investments in assets** cash flow percentage stemming from the operating activities and used to finance investments in assets. It consists of the ratio between the total purchase in tangible and intangible properties and the cash flow stemming from the operating activities

- **Cloud** model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction

There are different cloud computing services (see [Gartner Glossary](#)):

- SaaS** *Software as a service*: software that is owned, delivered and managed remotely by one or more providers. The provider delivers software that is consumed in a one-to-many model by all contracted customers at anytime on a pay-for-use basis or as a subscription based
- PaaS** *Platform as a service*: type of cloud offering that delivers application infrastructure (middleware) capabilities as a service
- IaaS** *Infrastructure as a service*: standardized, highly automated offering in which computing resources owned by a service provider, complemented by storage and networking capabilities, are offered to customers on demand

See A.C. Adamuthe, V.D. Salunkhe, S.H. Patil and G.T. Thampi (2015), "[Cloud Computing–A market Perspective and Research Directions](#)", *I.J. Information Technology and Computer Science*, 10, 42-53



# Definitions (II)

- **Differentiation (horizontal)** provision of diversified products and services at the same supply chain stage
- **Ebit** operating profit before interests and taxes. It is the margin of the company's core operations, meaning the Gross Margin after without the expenditure in R&D and operating expenditures. Ebit for the 6 platforms corresponds to the item "Income from operation" of the consolidated income statement; for TLC&Media companies it is instead the item "Operating income" of the consolidated income statement
- **Employee productivity** ratio between the overall annual revenues and the total number of employees
- **Globalization index** total amount of revenues overall achieved outside the domestic continent
- **Gross margin** difference between the company's revenues and its cost of sales. It highlights the profit stemming from the typical activity only
- **Gross Margin without R&D expenditure** gross margin without the expenditure in research and development
- **Integration (vertical)** company's presence at different stages - connected to each other - of the industry chain
- **Multi-homing** usage of different platforms by a single user, in a month, in order to use digital services. For instance, in the case of search services, usage by users of both the search engine 1 and the search engine 2; as for social networks, it implies the usage of both the social network 1 and the social network B  
(for more information, see [Methodology: notes](#))
- **Optimal minimum size (break-even point) in a sector** amount of revenues necessary to ensure that a company achieves the break-even point  
(for more information, see [Methodology: notes](#))

- **Platform envelopment** offer typology which, using the same inputs, translates into different and differentiated services belonging to different but connected markets, with overlapping user bases  
  
See T.R. Eisenmann, G. Parker and M. Van Alstyne (2011), "Platform envelopment", *Strategic Management Journal*, 32 (12), 1270-1285
- **Reach** percentage of users that visited a website or used an application on the total of users of a given service. Other metrics used to measure penetration in web analytics systems, in addition to those relating to unique visitors, include those expressed in terms of:
  - minutes: total number of (usage) minutes spent by visitors on the website during the reference period
  - pages viewed: total number of pages viewed at the website during the reference period
- **ROE (Return On Equity)** ratio between net income and shareholders' equity
- **ROI (Return On Investment)** ratio between net income and shareholders' equity with long-term liabilities
- **Stock price** monthly average price of the share
- **The Winner Takes All - WTA** market structure where several elements (including network externalities, returns to scale, obstacles to multi-homing, switching costs, sunk costs) tend to increase the concentration level up to a situation in which the leader able to reach very high shares  
  
See T.R. Eisenmann (2006), "Winner-Take-All in Networked Markets", Harvard Business School Note 806-131

- **Currency and exchange**      All values in this document are expressed in euros.  
  
Where applicable, the euro conversion has been made by using the average annual foreign currency exchange rates (as for income, share and market-related values), and the exchange rate as of the 31 December of each year (as for assets values)  
  
See [Bank of Italy](#) and [European Central Bank](#)
- **Expenditure in R&D of the other ICT companies**      The expenses in R&D incurred by the other companies in the ICT - Information and Communications Technology - sector refer to a sample of 849 undertakings worldwide, whose 144 operate in Europe  
  
Cfr. European Commission (2018), [The 2018 EU Industrial R&D Investment Scoreboard](#)
- **Global shares in the sectors of activity**      The values expressed with reference to the worldwide platform shares do not represent market shares. These values, in fact, refer to the sectors of activity of the platforms, regardless of the definition of the markets, both from the point of view of the product and from the geographical one
- **Shares in free services**      The values expressed refer to share (mostly reach) of platforms in free services. These are the platform shares in the 5 European Countries (France, Germany, Italy, Spain and the UK), overall considered. The app store sector (mobile) is an exception though, for which the indicated share refers to the world

- **Multi-homing indicators**

*Sector index*: expresses a measurement of the individuals' usage of different platforms in order to use a digital service. In such sense, it estimates the overall value of the users' duplications between different platforms in a month. It is equal to 0 in the absence of multi-homing, i.e. if an individual uses a single platform

*First platform's multi-homing*: first platform's (that is the platform that reaches the greatest number of users) users percentage who, to obtain a service, also uses another platform in a month

*Second platform's multi-homing*: second platform's users percentage who, to get a service, also uses the first platform in a month
- **Estimate of the optimal minimum size (break-even point) in a sector**

The break-even point, for each company, is calculated as the ratio between the incurred fixed costs and the contribution margin (in terms of percentage of the revenues) obtained in the industry.

More specifically, the break-even point estimate is based on Eisenmann's methodology (2007). R&D as well as general and administrative expenses are included among fixed costs; variable costs include cost of revenues (excluding traffic acquisition costs, so-called TAC) and Sales & Marketing expenses.

The break-even point estimate is based on the assumption that the relevant industry sectors for each platform have a global dimension. It is worth noting that break-even points can be locally reached; however, if the targeted markets are not geographically segmented, new entrants in the local industry are subject to competition from global operators, which can exploit supply and demand economies of scale.

Furthermore, the break-even point estimates refer to general industries. Therefore, in the case of the social network industry, non-specialized social networks are taken into consideration

See T.R. Eisenmann, (2007), "The Economics of Internet Advertising", presentation at AEI-Brookings Joint Center
- **Comparison with ROE and ROI of the main Italian companies**

For the comparison between the platform profitability values and those of Italian companies, cumulative data of 2,095 Italian companies were used

See Mediobanca (2019), [Dati cumulativi di 2095 società italiane](#)

- Online services

On the general internet functioning, the online platforms' activities and their economic features as well as advertising and online services, see Agcom (2014), [Indagine conoscitiva sul settore dei servizi internet e sulla pubblicità online](#)
- Big data

On the paradigmatic discontinuity stemming from big data, the opportunities and the challenges associated to their use, see Agcom (2018), [Big data](#)
- Information system

On the role of platforms in the contemporary society, with specific reference to the information system, see Agcom (2018), [Report on the news consumption](#); Agcom (2018), [News vs. fake in the information system](#)



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