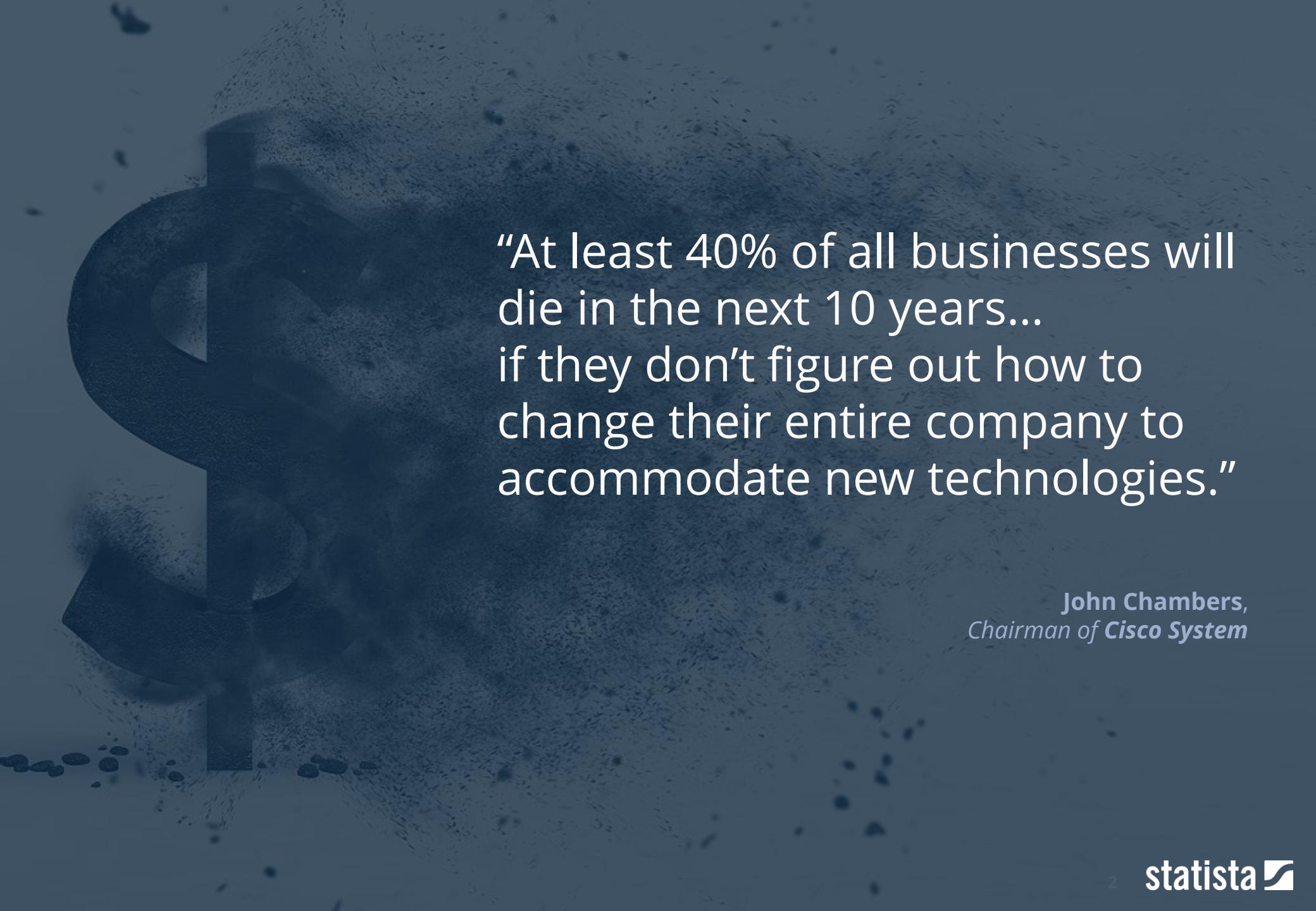




# Digital Economy Compass

April 2017



“At least 40% of all businesses will die in the next 10 years... if they don't figure out how to change their entire company to accommodate new technologies.”

**John Chambers,**  
*Chairman of Cisco System*

# Welcome to the Digital Economy Compass

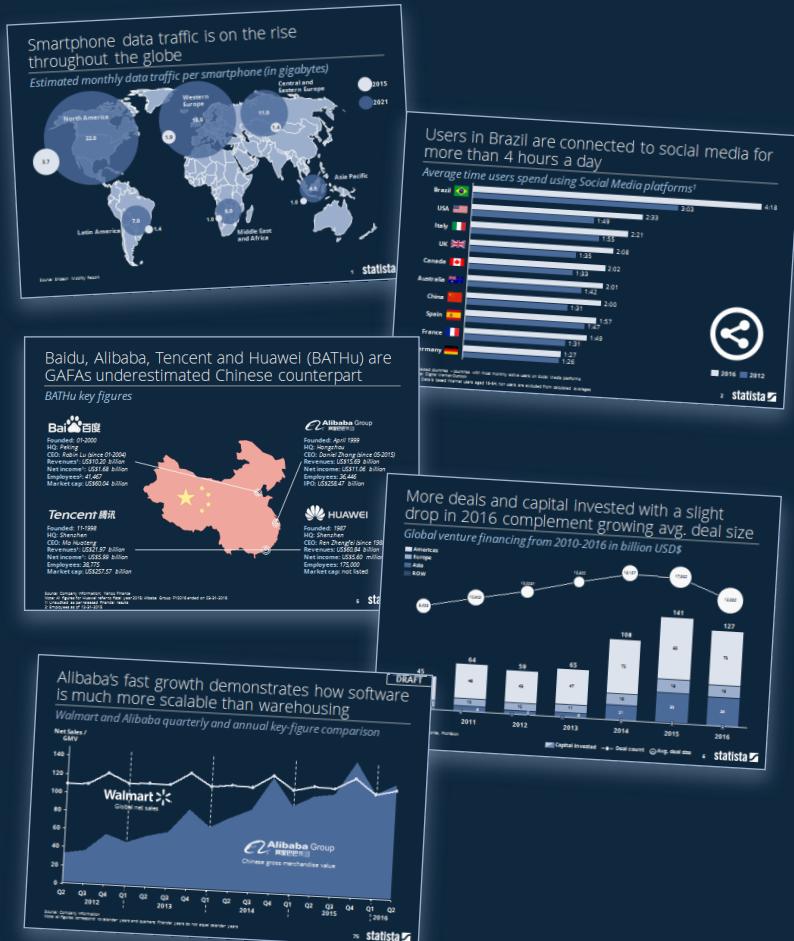
Less talking, more facts – our idea behind creating the **Digital Economy Compass**. It contains facts, trends and key players, covering the entire digital economy.

We provide...

- » key essentials from our research,
- » actionable insights,
- » Statista's exclusive forecasts.

This very first edition will provide everything you need to know about the digital economy.

Your Digital Market Outlook Team



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## *Global Trends*

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## *Statista's Digital Market Outlook*

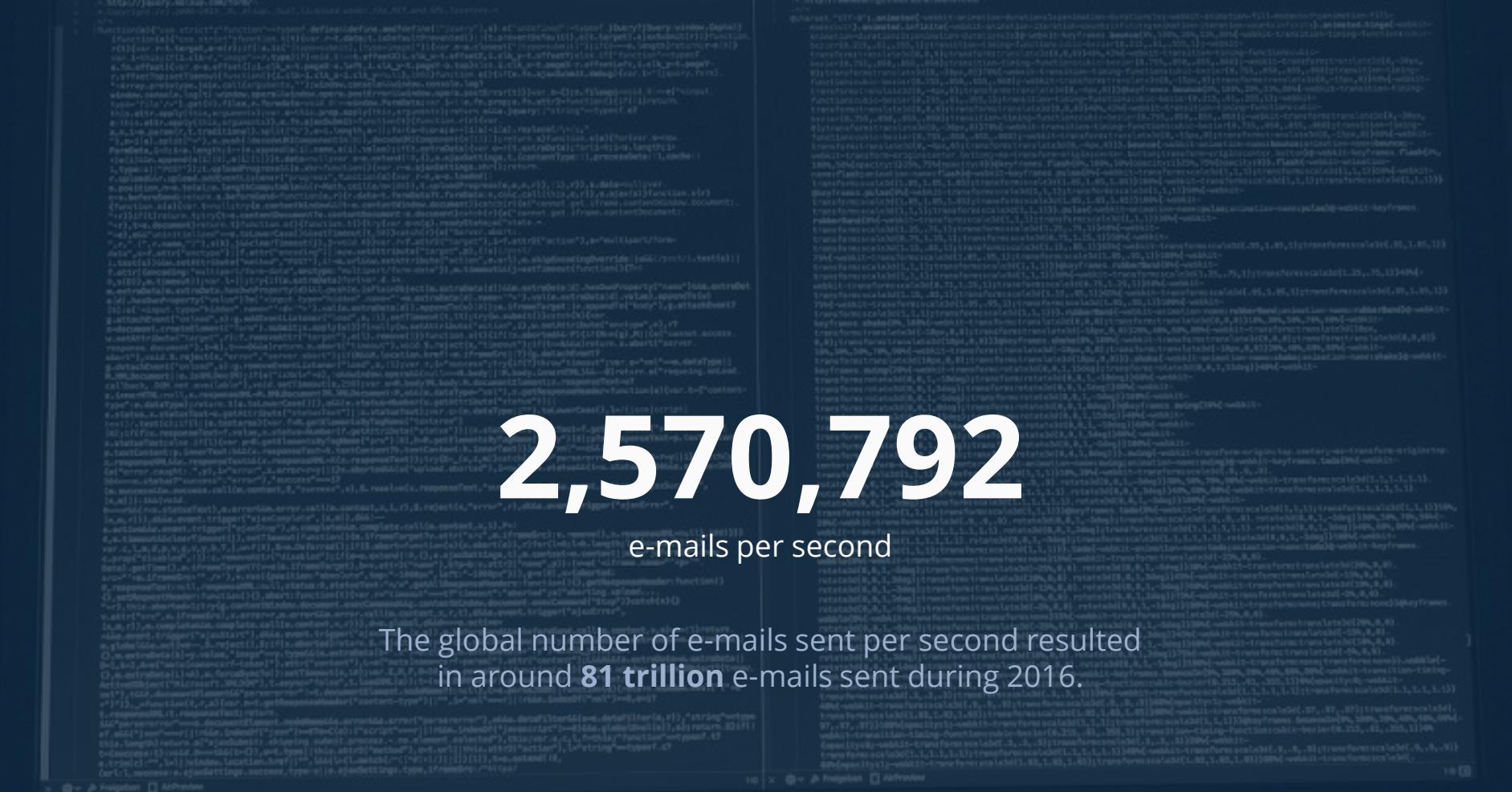
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# Connectivity

# 2,570,792

e-mails per second

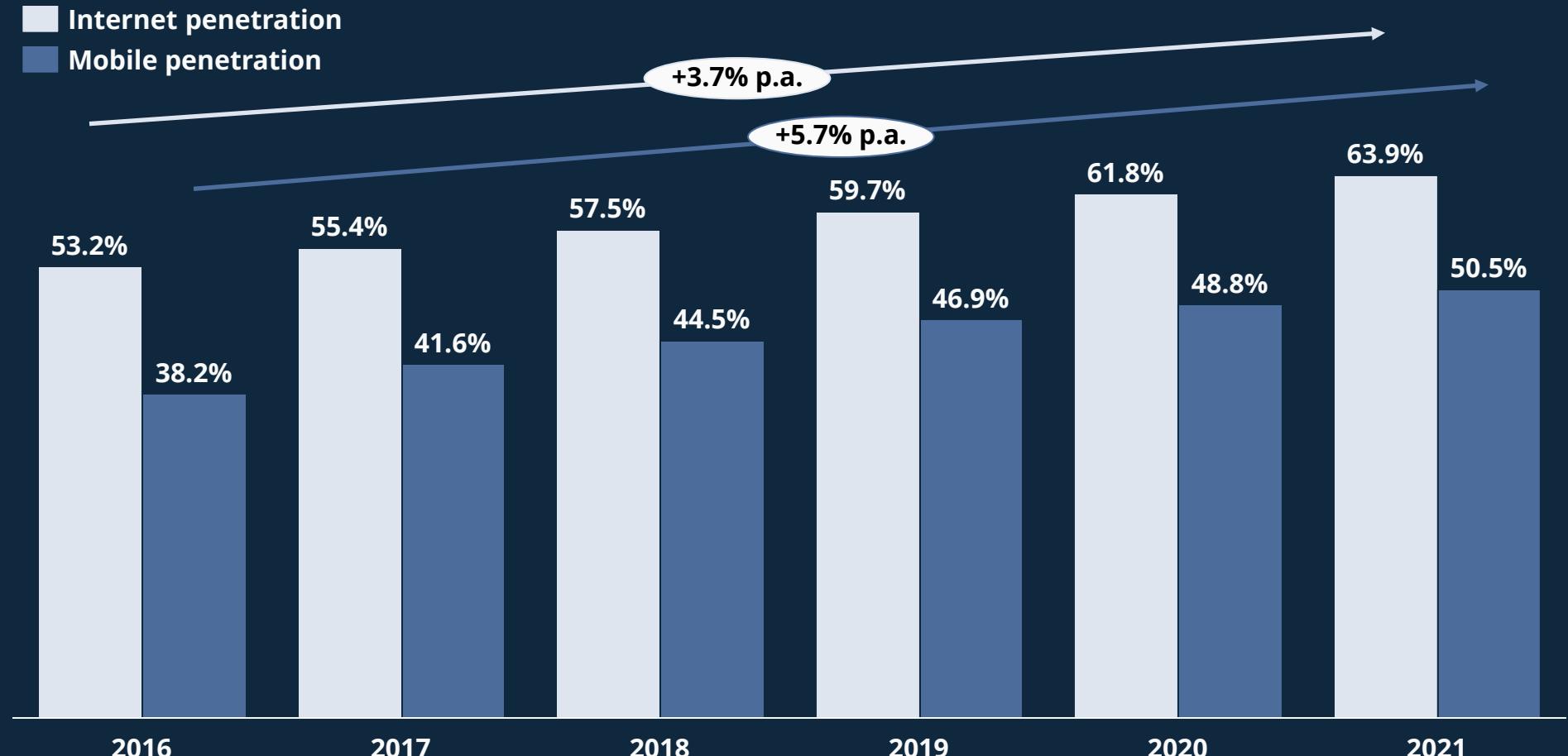
The global number of e-mails sent per second resulted  
in around **81 trillion** e-mails sent during 2016.





# The world is more connected than ever, a development which looks set to continue

*Share of world population connected to the internet from 2016 to 2021*

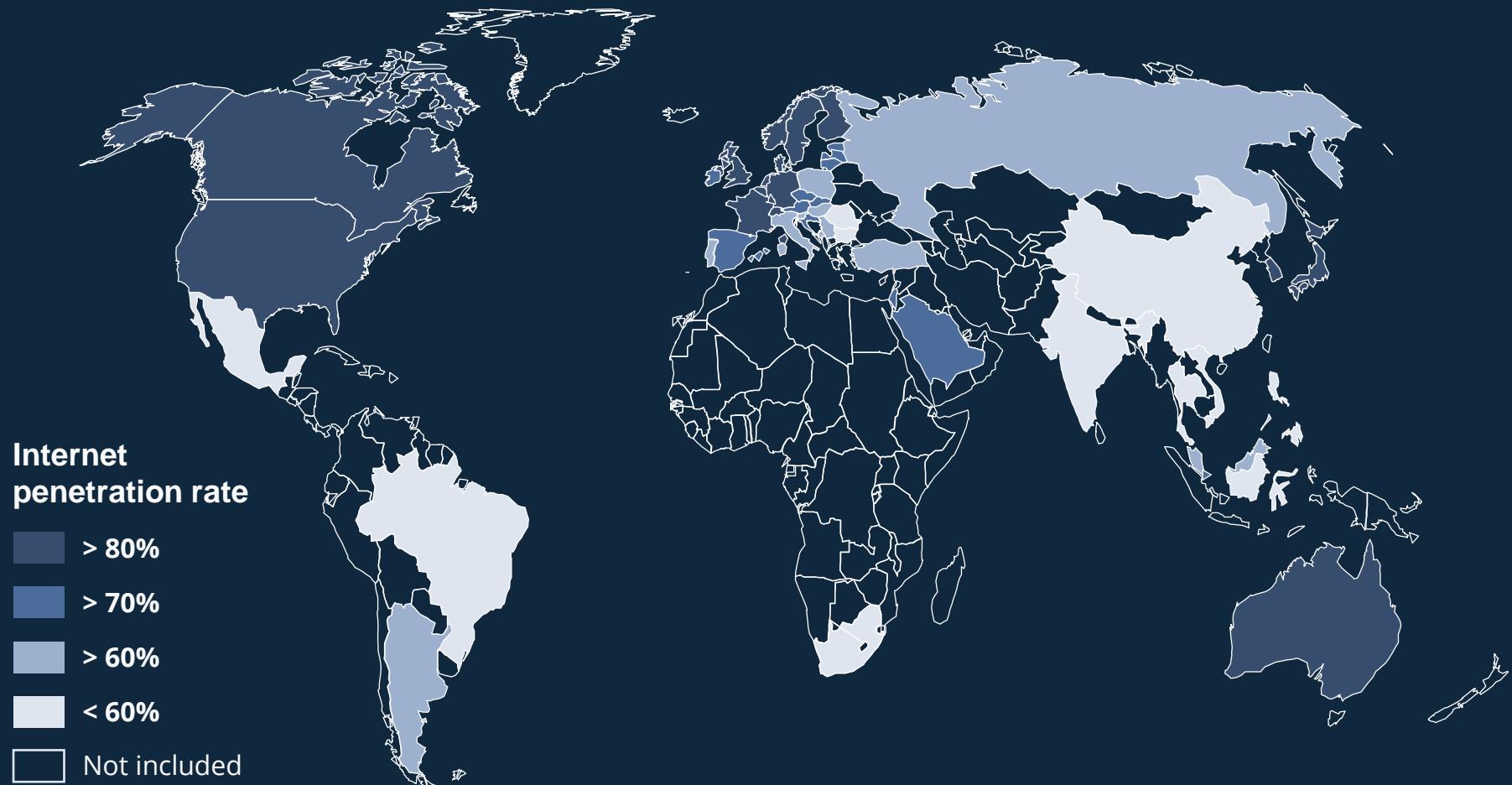


Source: [Statista Digital Market Outlook](#)

Note: Figures account for total world population using the internet / a smartphone within the last 12 months

# Many people still lack internet access, particularly in the most populous countries

*Internet penetration per country in 2016 (in % of total population)*

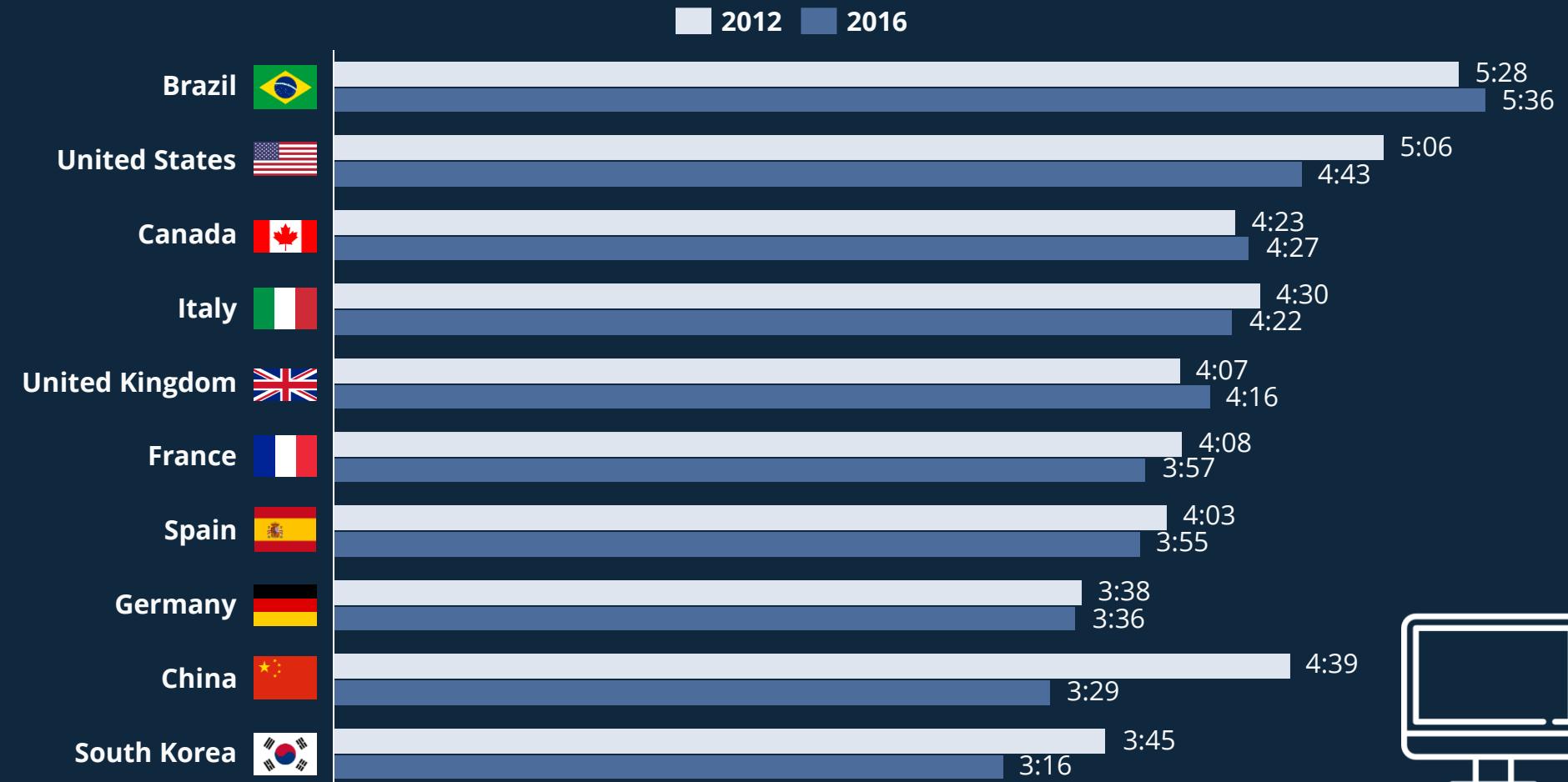


Source: [Statista Digital Market Outlook](#)

Note: Only includes countries listed in the Digital Market Outlook

# Web consumption per user via Laptop or Desktop PC is highest in Brazil

*Time spent online via Laptop/Desktop PC (hours per day)*



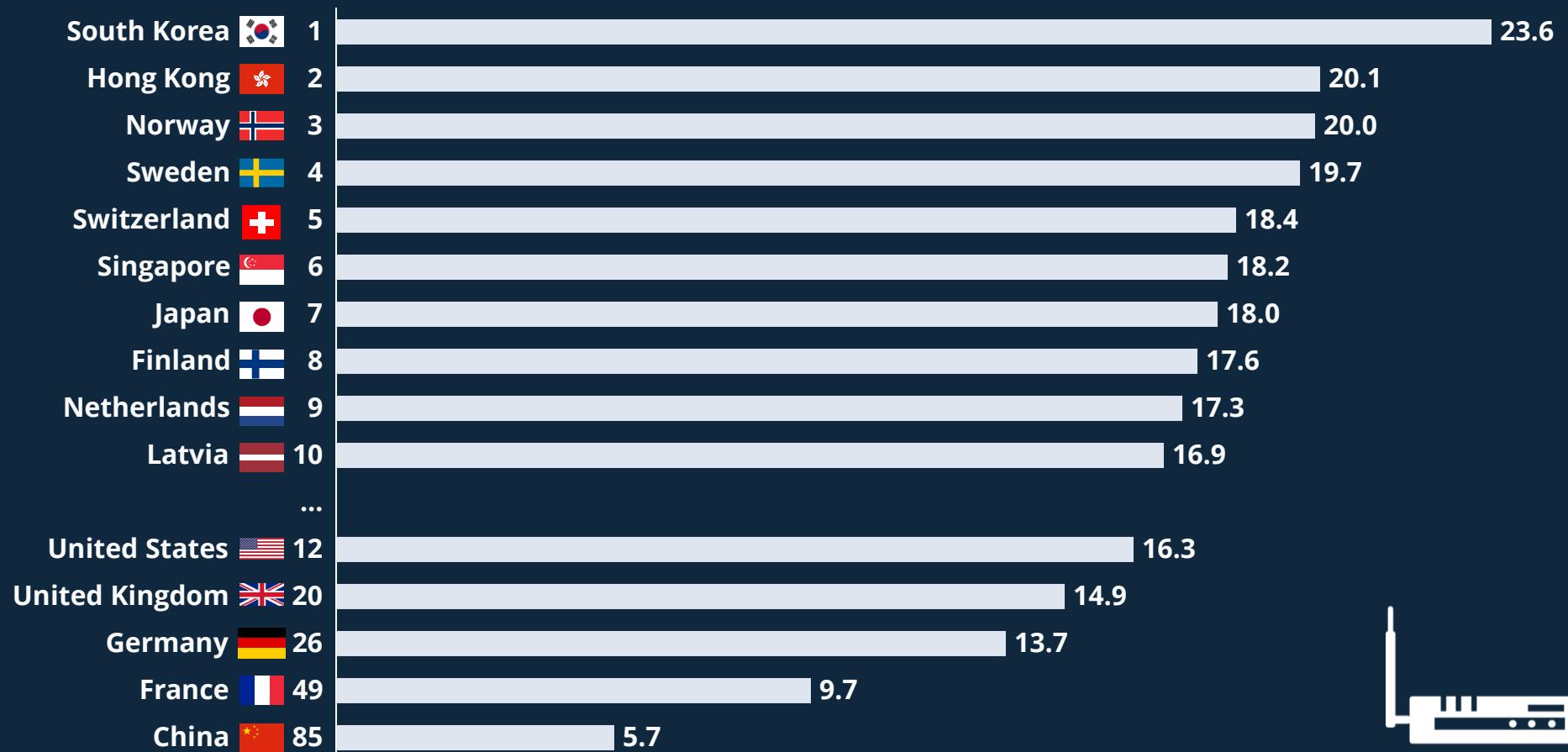
Source: [Statista Digital Market Outlook](#)

Note: Data is based on internet users aged 16+; non-internet users are excluded from averages



# In a global comparison, broadband speed is fastest in East Asia and Scandinavia

*Average broadband speed in Top10 and selected countries (in Mbps<sup>1</sup>)*



Source: Akamai Technologies

Note: Figure refers to Q3-2016; countries covered: broadband ranking - 147

1: Megabits per second

“Mobile is the future, and there is no such thing as communication overload.”

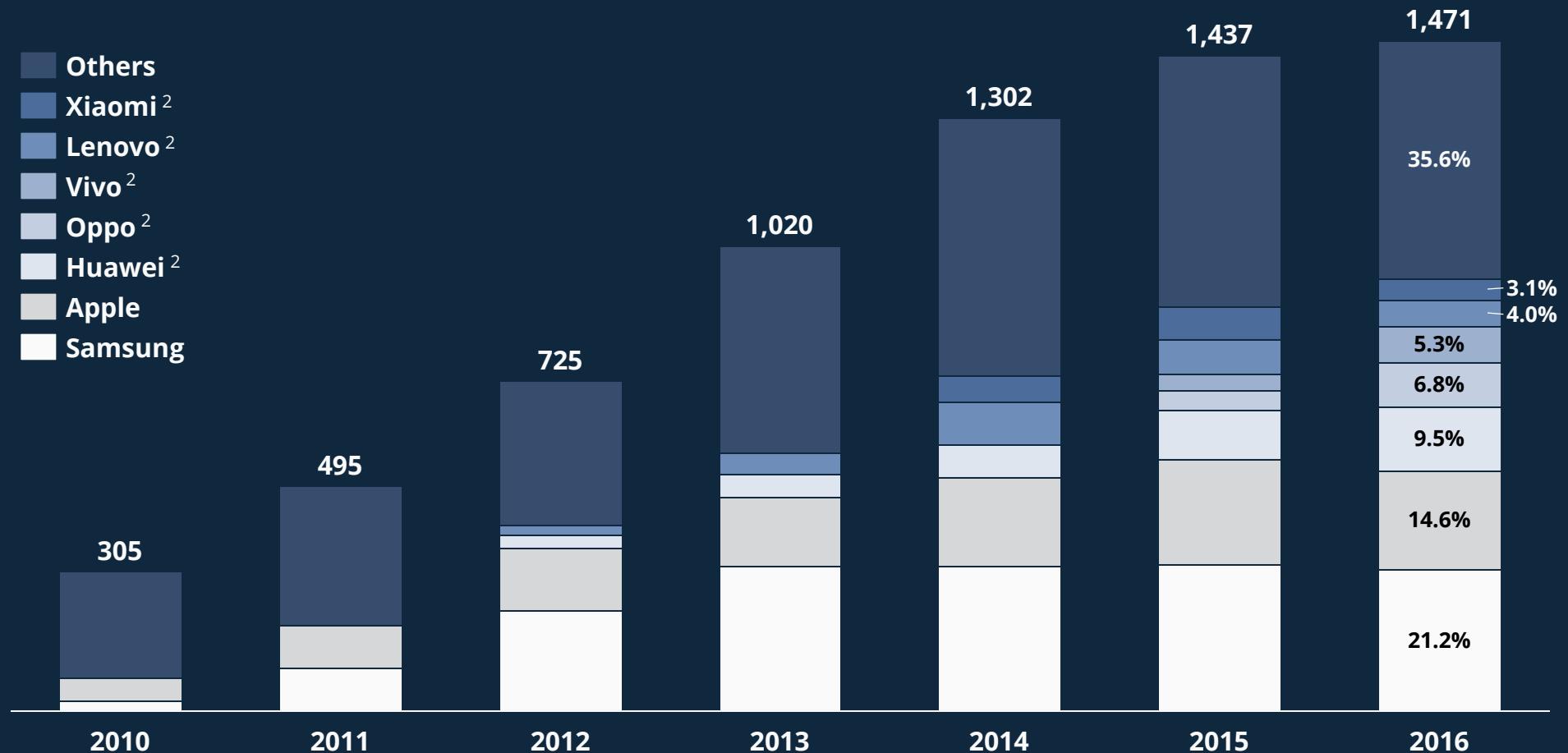
**Eric Schmidt,**

*Executive Chairman of Alphabet, Inc.*



Smartphone sales reached almost 1.5 billion in 2016, with Samsung being the biggest vendor

*Global smartphone shipments (in million) and market shares per OEM<sup>1</sup>*



Source: IDC, Gartner

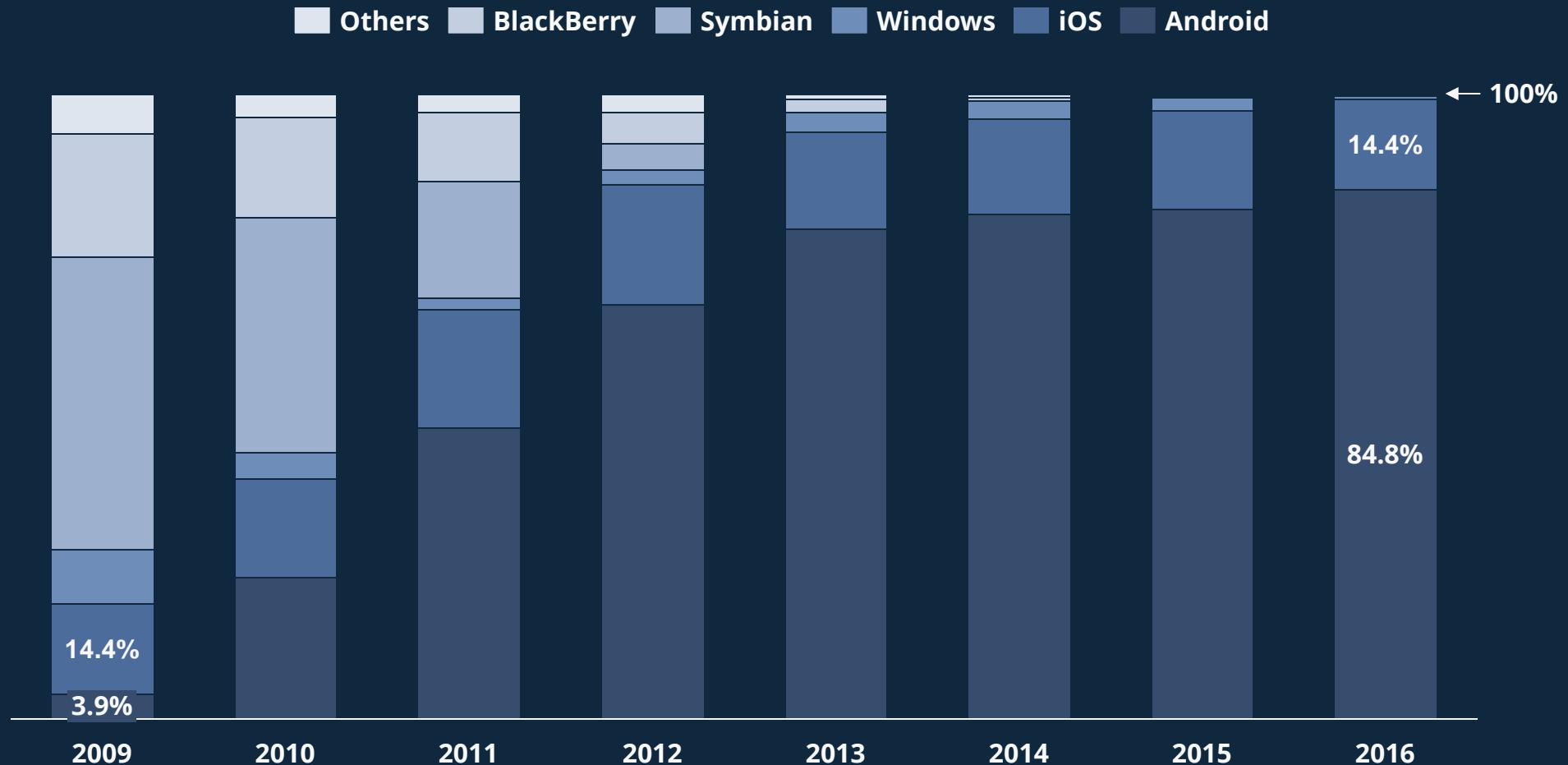
1: Original Equipment Manufacturer

2: Shipment information not available for each year; if no information available, sales are included in "Other"

Note: Estimated figures for Lenovo and Xiaomi in 2016; market shares may not sum up to 100% due to rounding

Android has become the dominating mobile OS, while Apple's iOS has maintained market share

*Worldwide smartphone operating system market share<sup>1</sup>*



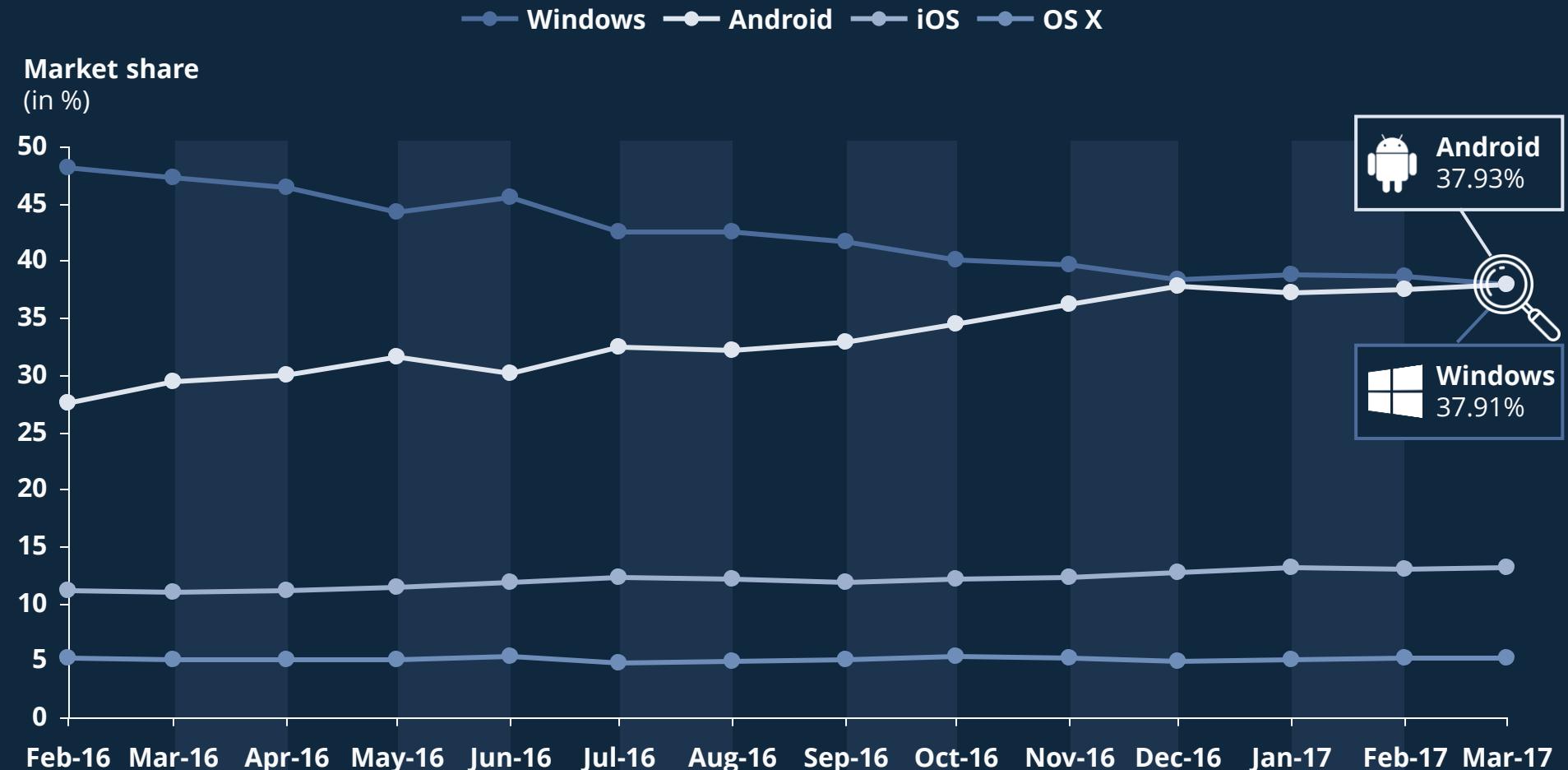
source: Gartner

OS = Operating System

1: based on worldwide unit sales

# Cross-device, Android even overtook Windows as the dominating OS for desktop and mobile

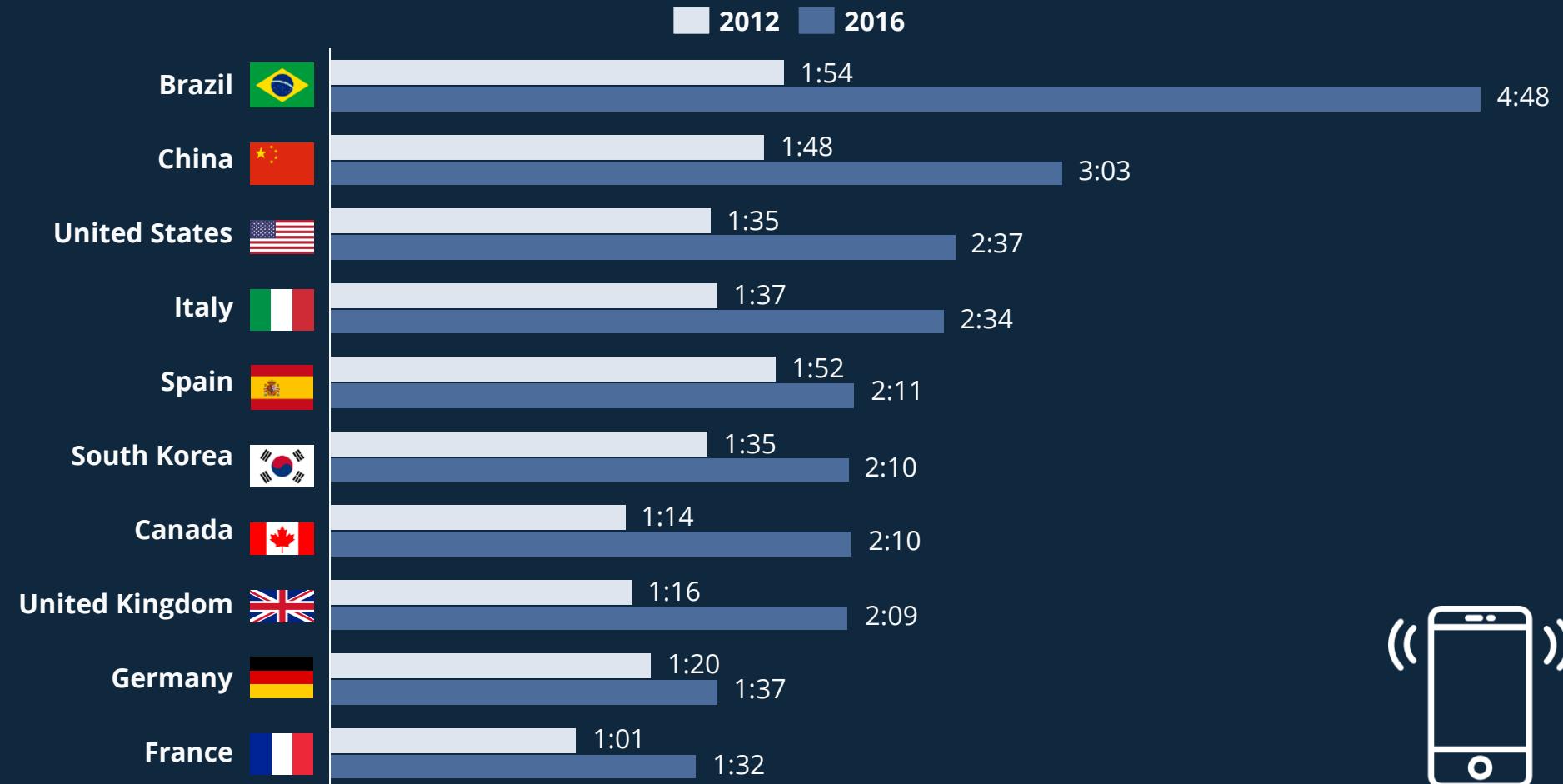
*Global operating system market share from Feb 2016 to Mar 2017*



Source: StatCounter.com

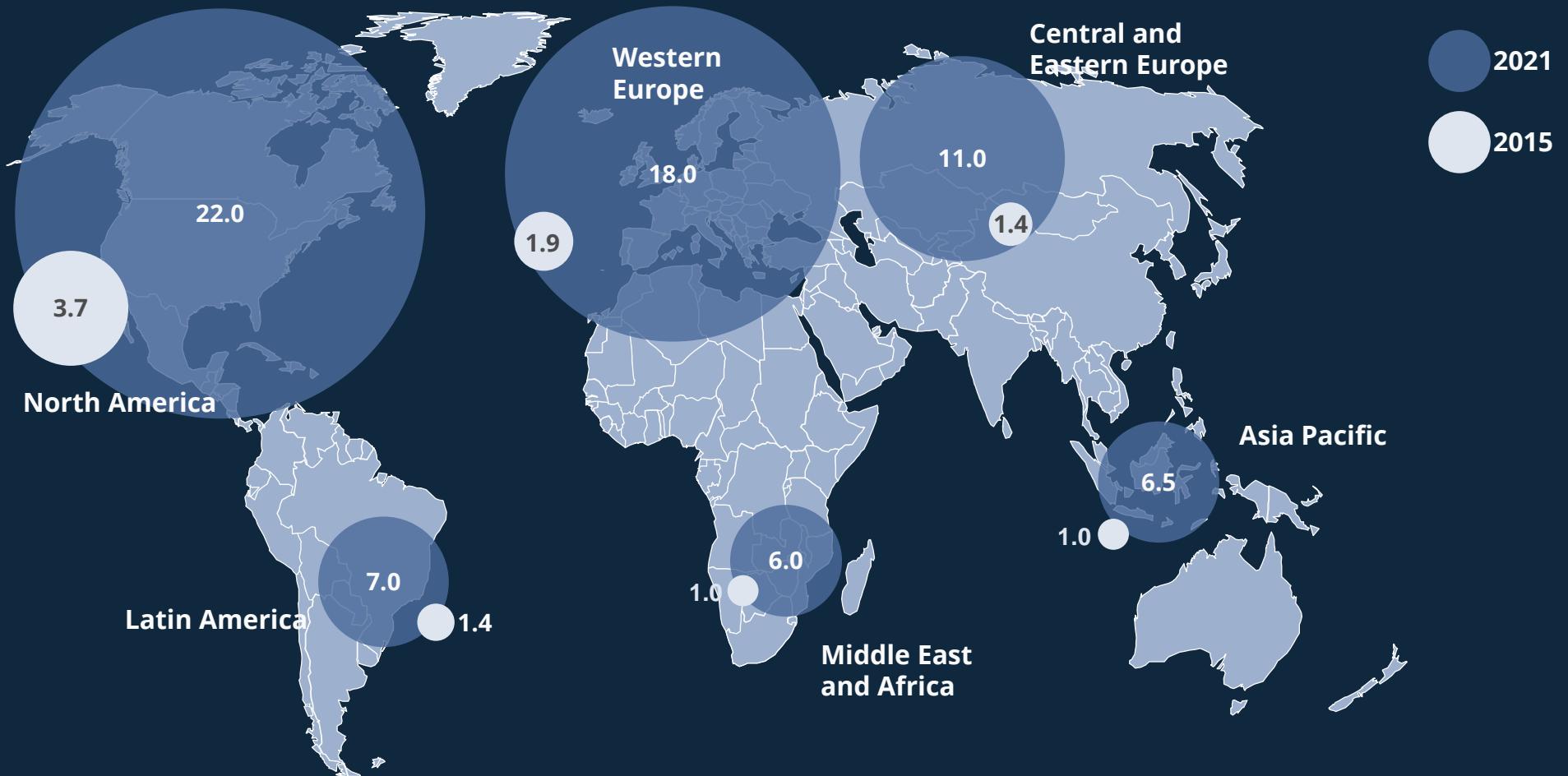
# Advanced mobile devices and a growing number of apps increase time spent on mobile devices

*Time spent online via mobile device per user (hours per day)*



# Being 'always online' leads to larger mobile data traffic per device

*Estimated data traffic per smartphone (in gigabytes per month)*

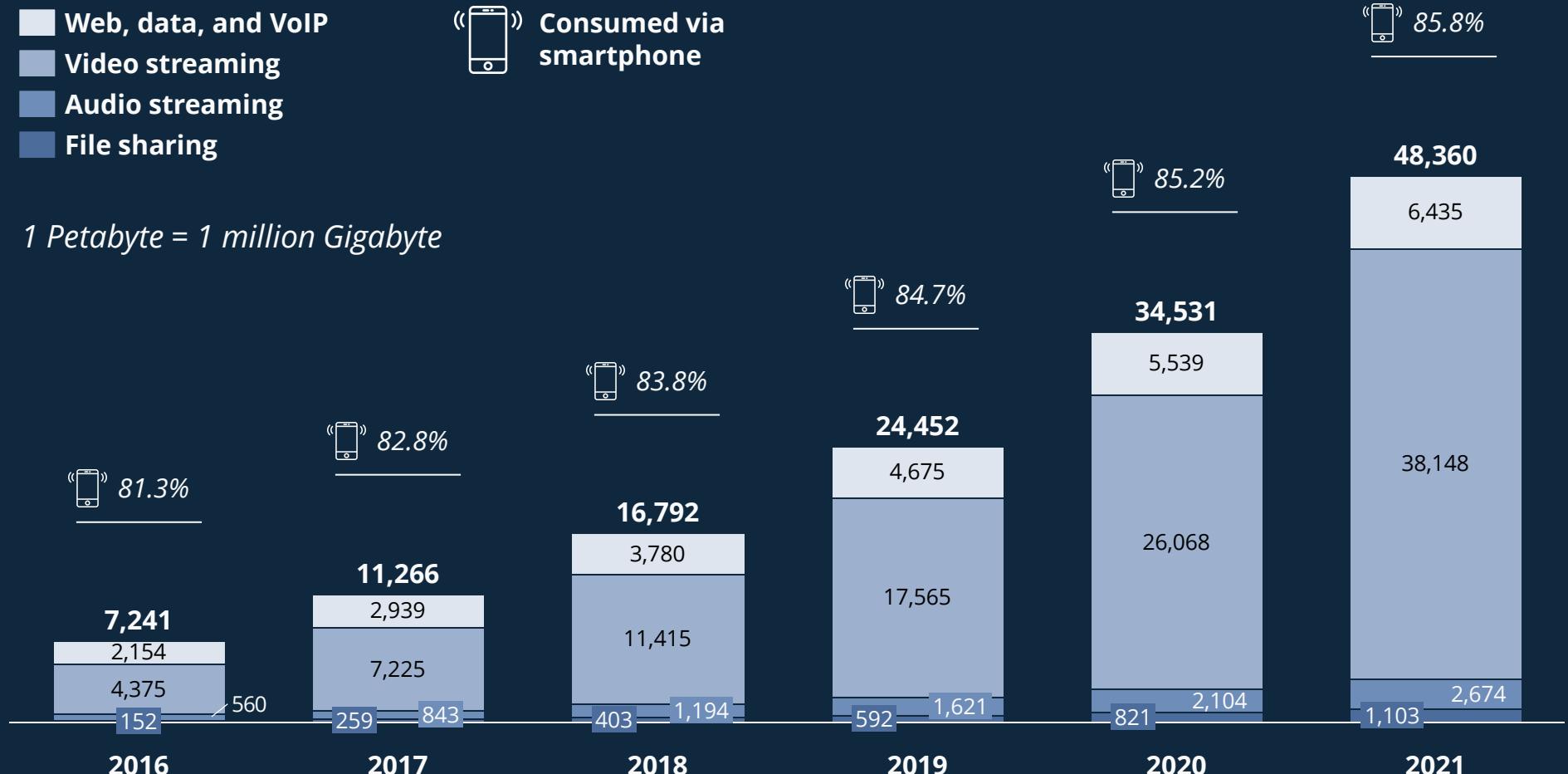


source: Ericsson Mobility Report



# The sevenfold increase in global mobile data traffic is mainly driven by online video streaming

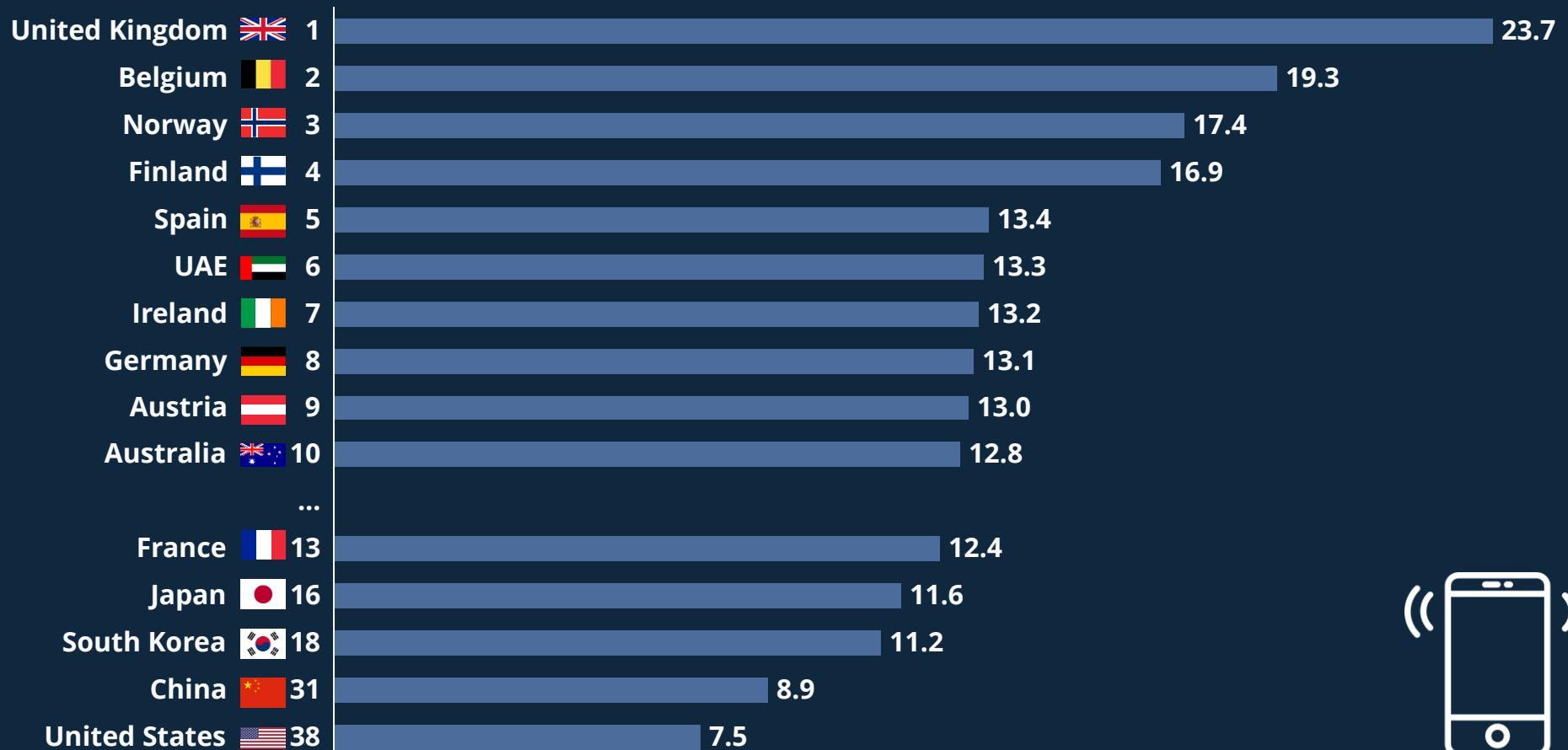
## *Global mobile traffic forecast per segment (in petabytes per month)*



**source:** Cisco System; figures include only cellular mobile traffic (Wi-Fi or small cell from dual-mode devices are excluded)  
 Note: Other mobile devices include Tablets, mobile PCs, M2M (incl. wearables), non-smartphone mobile phones, e-readers and portable gaming consoles

# Mobile connection speed varies a lot between countries, with disappointing speed in the U.S.

*Average mobile speed in Top10 and selected countries (in Mbps<sup>1</sup>)*



Source: Akamai Technologies

Figure refers to Q3-2016; countries covered in mobile connection ranking – 61

Note: Evaluation of mobile connection speed for each country is based on a minimum of 25,000 observed unique IPv4 addresses

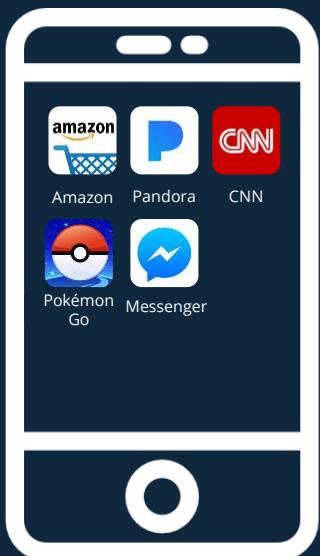
1: Megabits per second

# Pokémon Go was the most popular mobile game for iPhone users across the globe

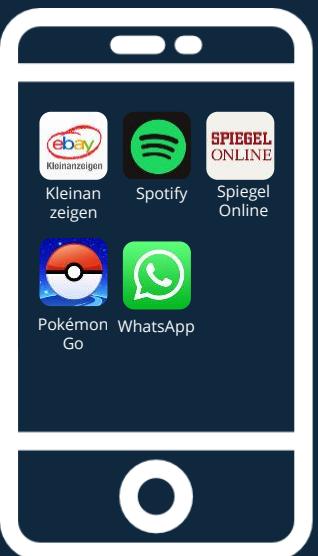
*Most downloaded iPhone apps per category and country in 2016*

Categories covered: Shopping, Music, News, Gaming, Social Networks

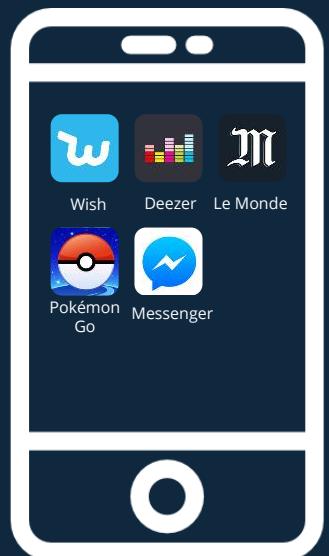
U.S.



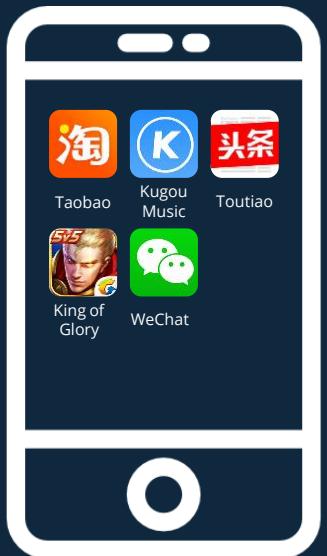
Germany



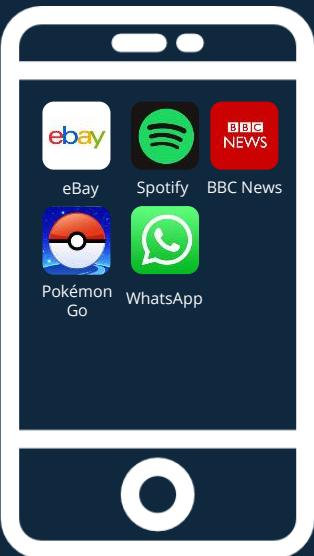
France



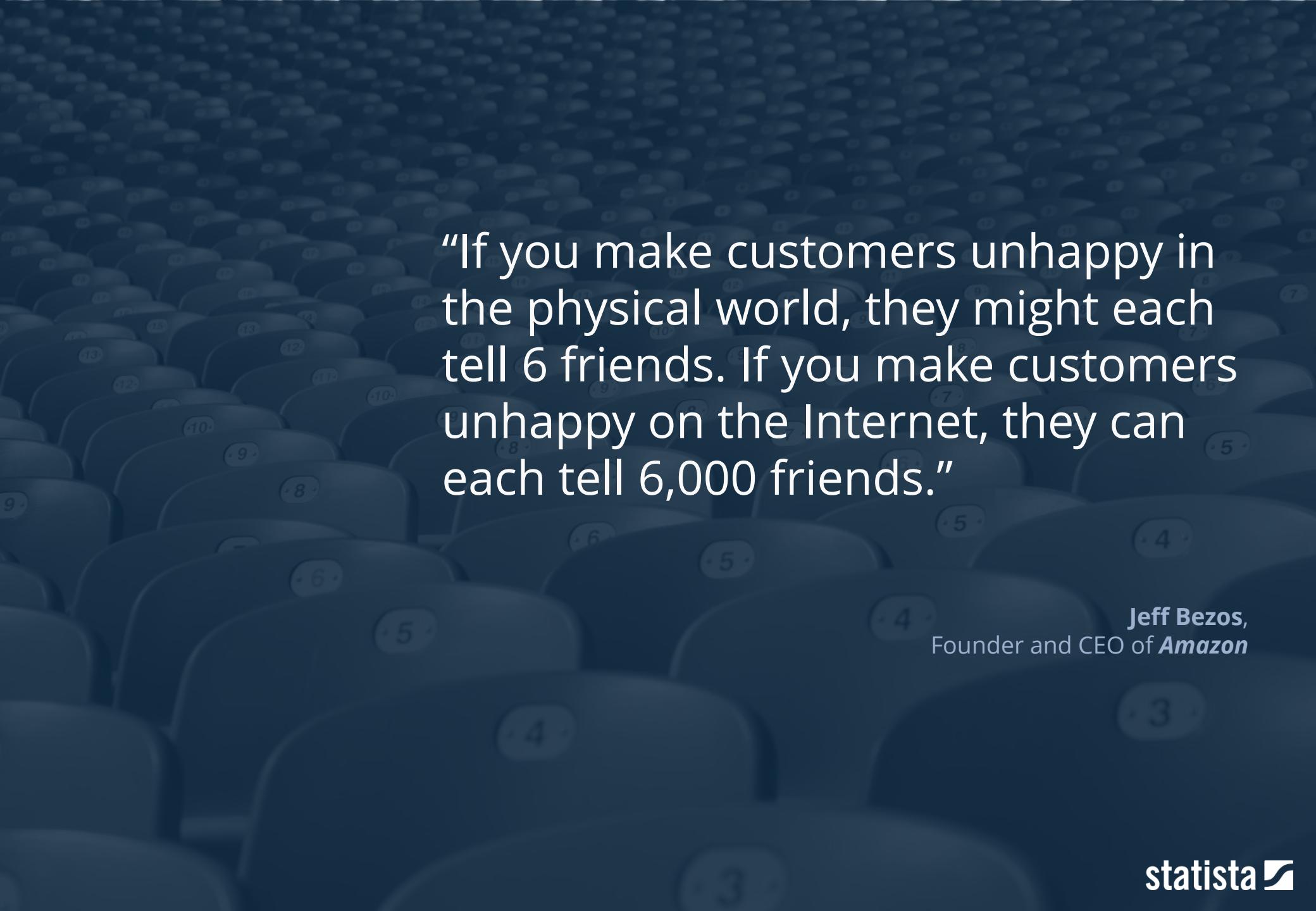
China



U.K.



# Social Media

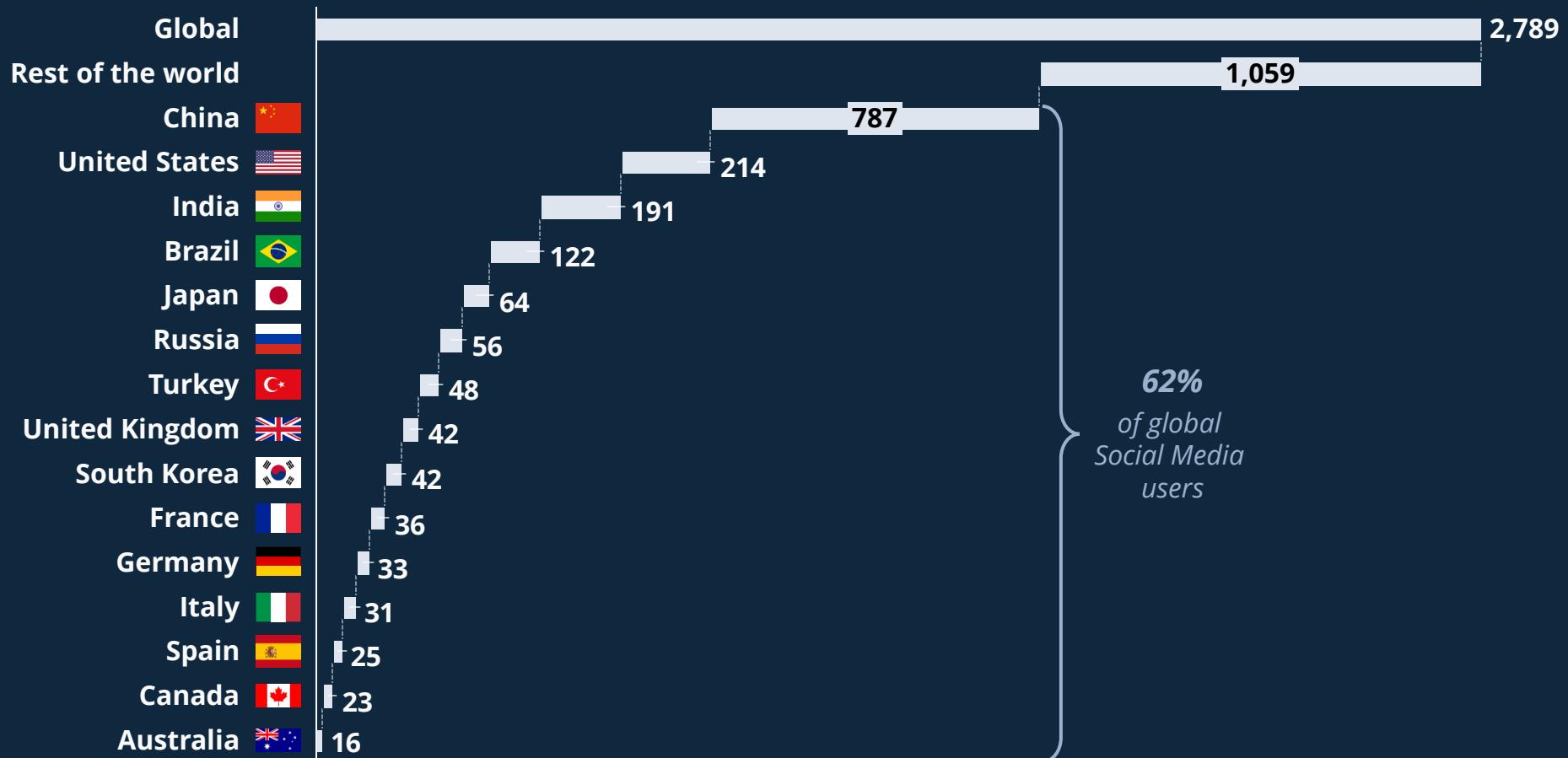


“If you make customers unhappy in the physical world, they might each tell 6 friends. If you make customers unhappy on the Internet, they can each tell 6,000 friends.”

**Jeff Bezos,**  
Founder and CEO of **Amazon**

In 2016, Social Media platforms connected 2.8bn people, more than 1/3 of the world population

*Selected countries in terms of Social Media MAU<sup>1</sup> (in million)*

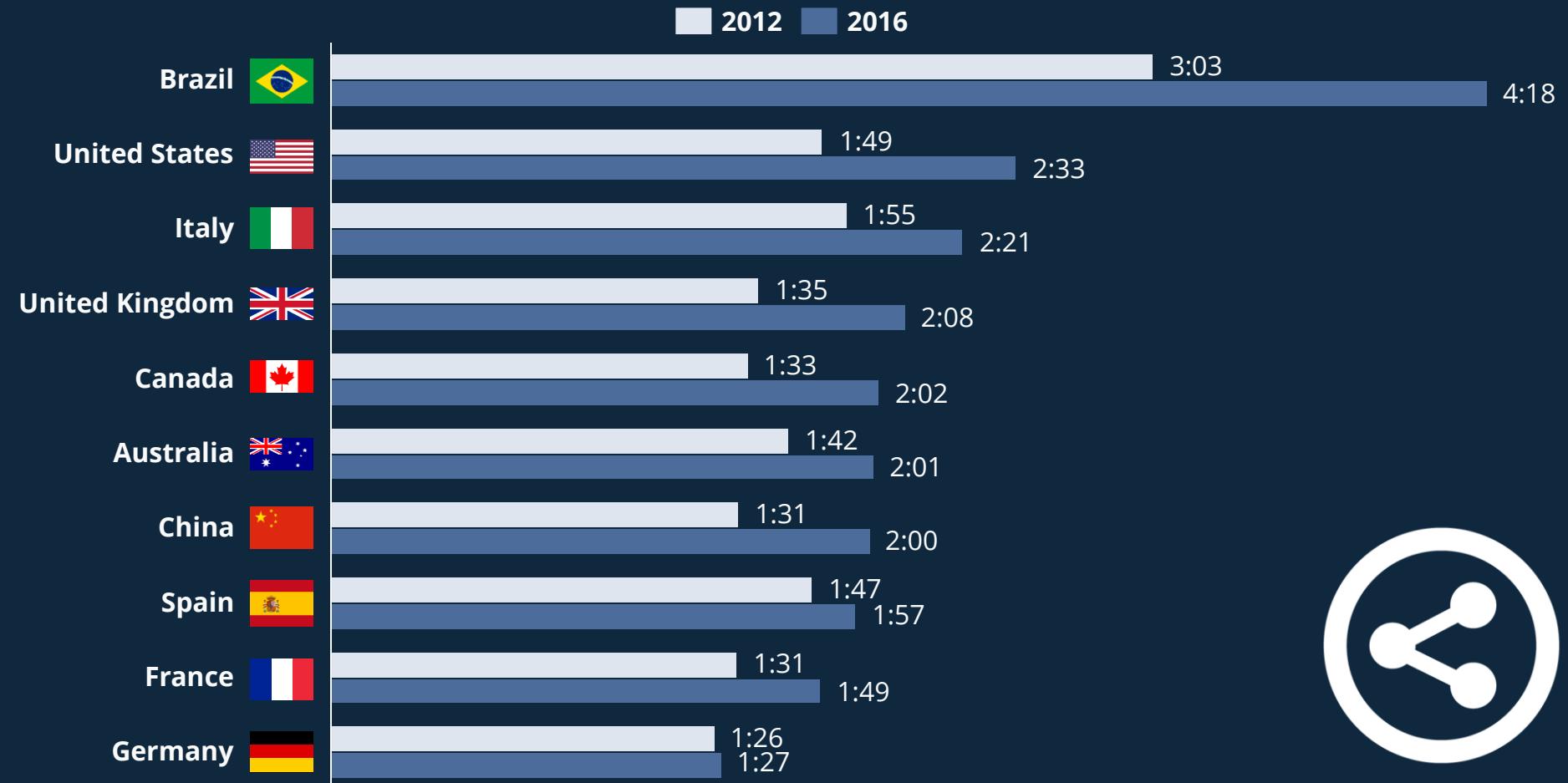


Source: wearesocial, InternetWorldStats, [Statista Digital Market Outlook](#)

1: MAU = Monthly active users

# Users in Brazil are connected to Social Media for more than 4 hours a day

*Avg. time users spend on Social Media platforms (hours per day)*



Source: [Statista Digital Market Outlook](#)

Note: Data is based on internet users aged 16+; non users are excluded from averages



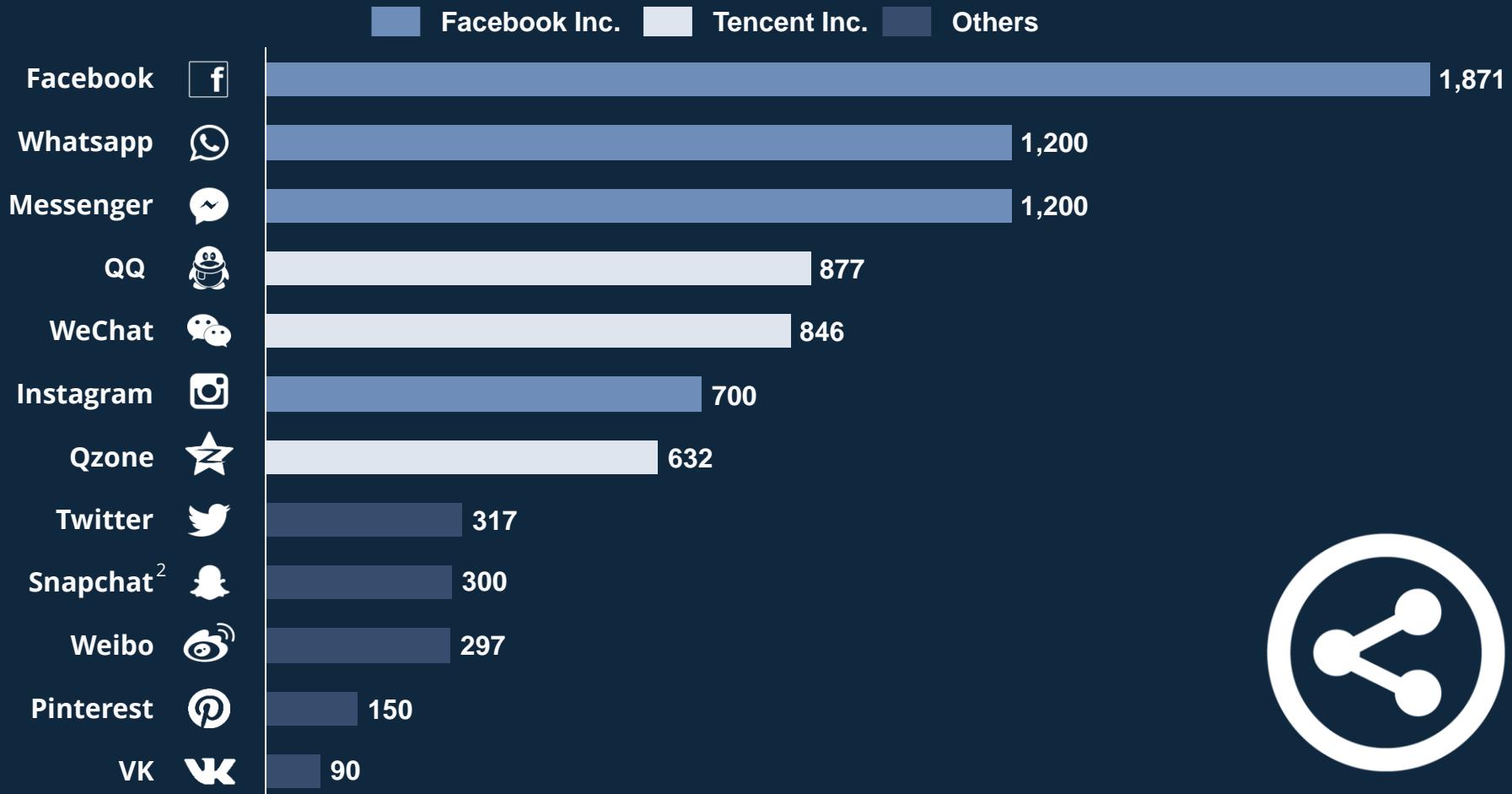
# > 50,000,000,000

More than 50 billion messages are sent through *WhatsApp* every day.



# Facebook has the biggest Social Media reach, followed by Chinese tech-company Tencent

*MAU<sup>1</sup> of selected social networks and messaging services (in million)*



source: We Are Social, Hootsuite, Techcrunch,

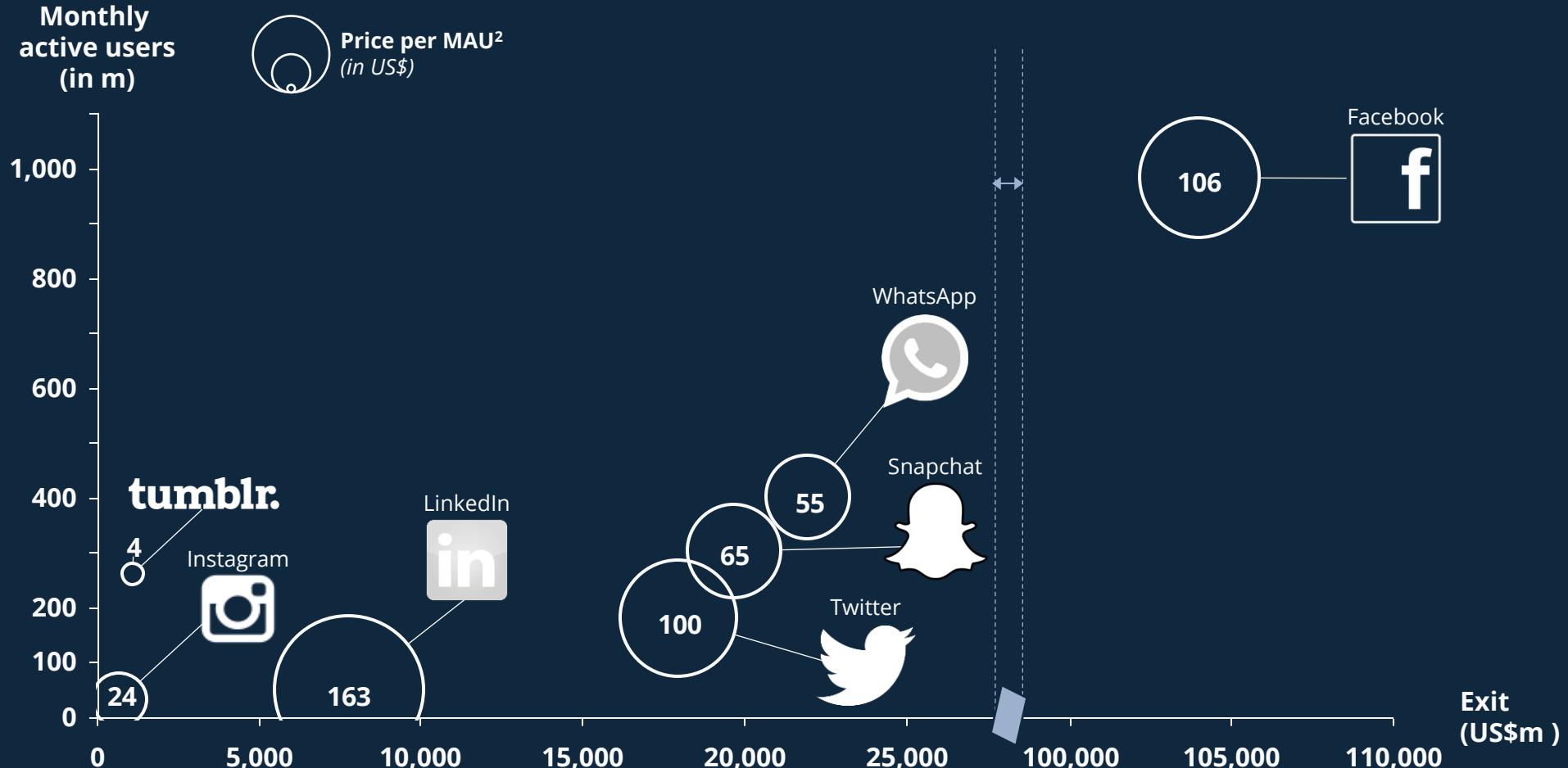
1: MAU = Monthly active users, as of January 2017; WhatsApp and Facebook Messenger as of March 2017

2: Estimation as Snapchat only reports daily active users



# Facebook and LinkedIn Social Media exits<sup>1</sup> were the most expensive per user to investors

*Social Media exits (acquisition or IPO) in comparison*



Source: Company Information, Yahoo! Finance, Business Insider, Forbes

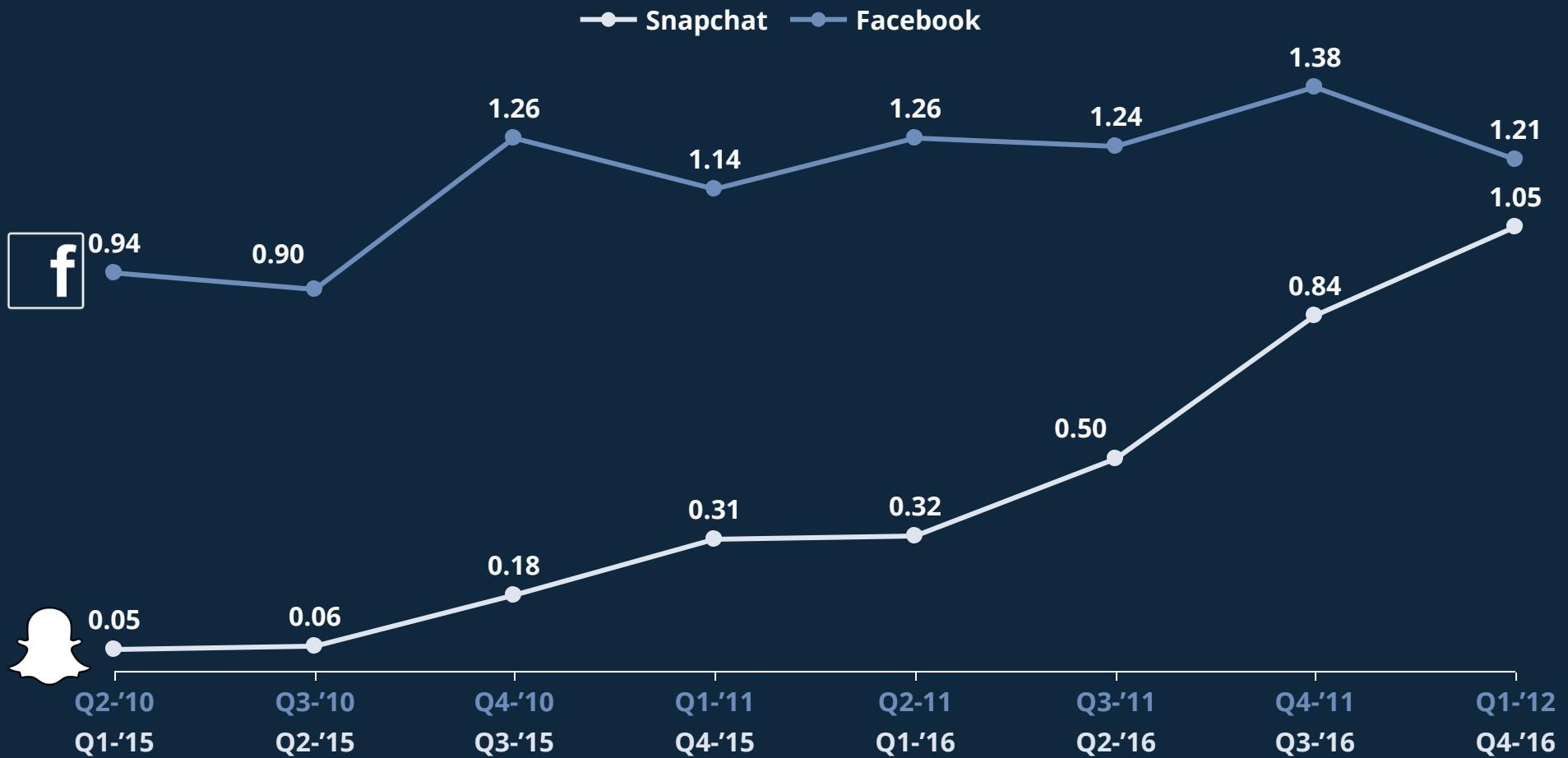
Note: Figures for monthly active users refer to the time of exit

1: Acquisition or IPO

2: MAU = monthly active user

# Snapchat pre-IPO revenue per user performed well compared to its biggest competitor

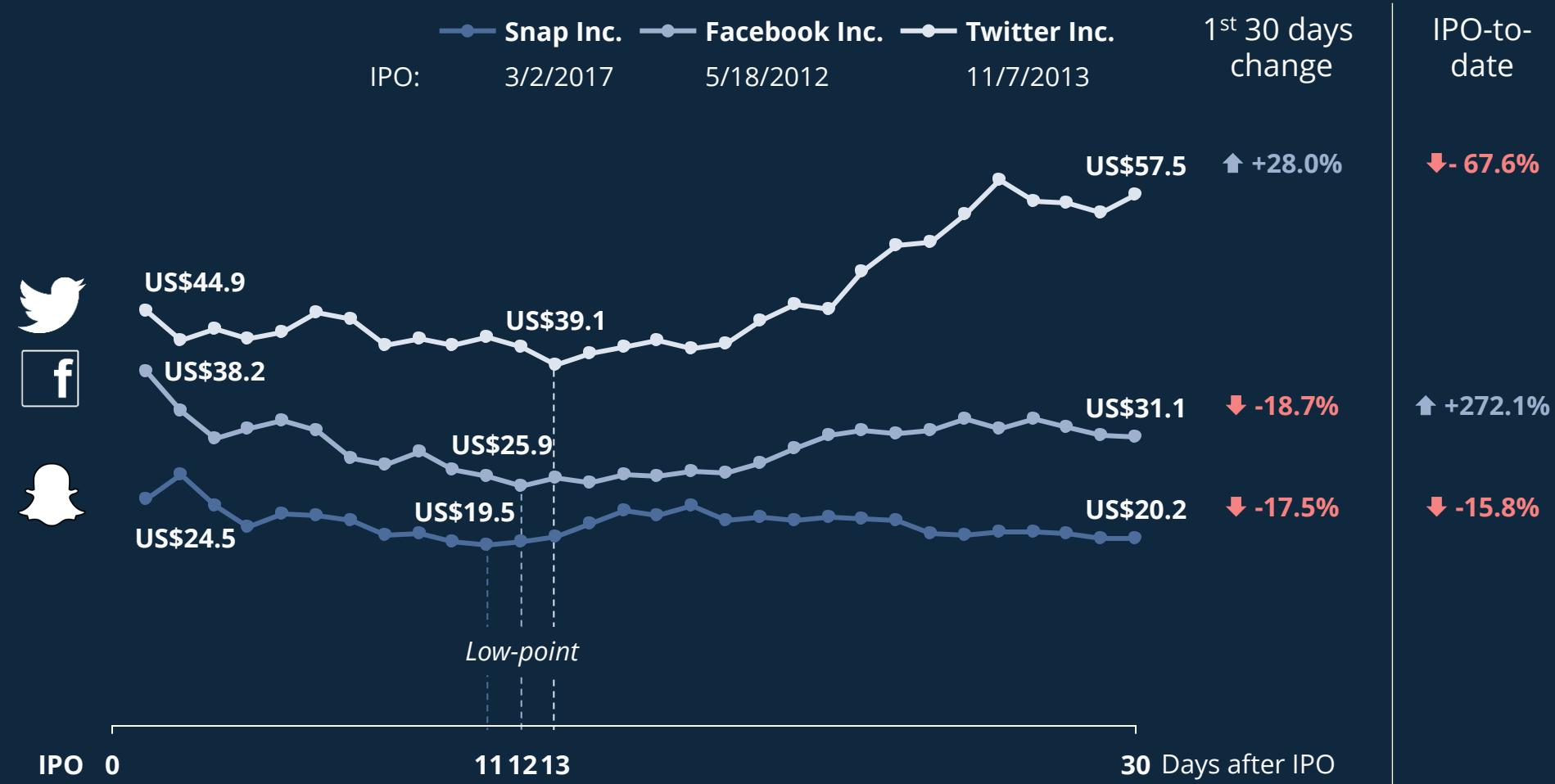
*Global avg. revenue per user in the eight quarters before IPO (in US\$)*



Sources: Snap Inc., Facebook Inc.

# Post-IPO development is nothing to worry about for Snapchat

*Stock prices of Snap, Facebook and Twitter in the first 30 days after IPO*

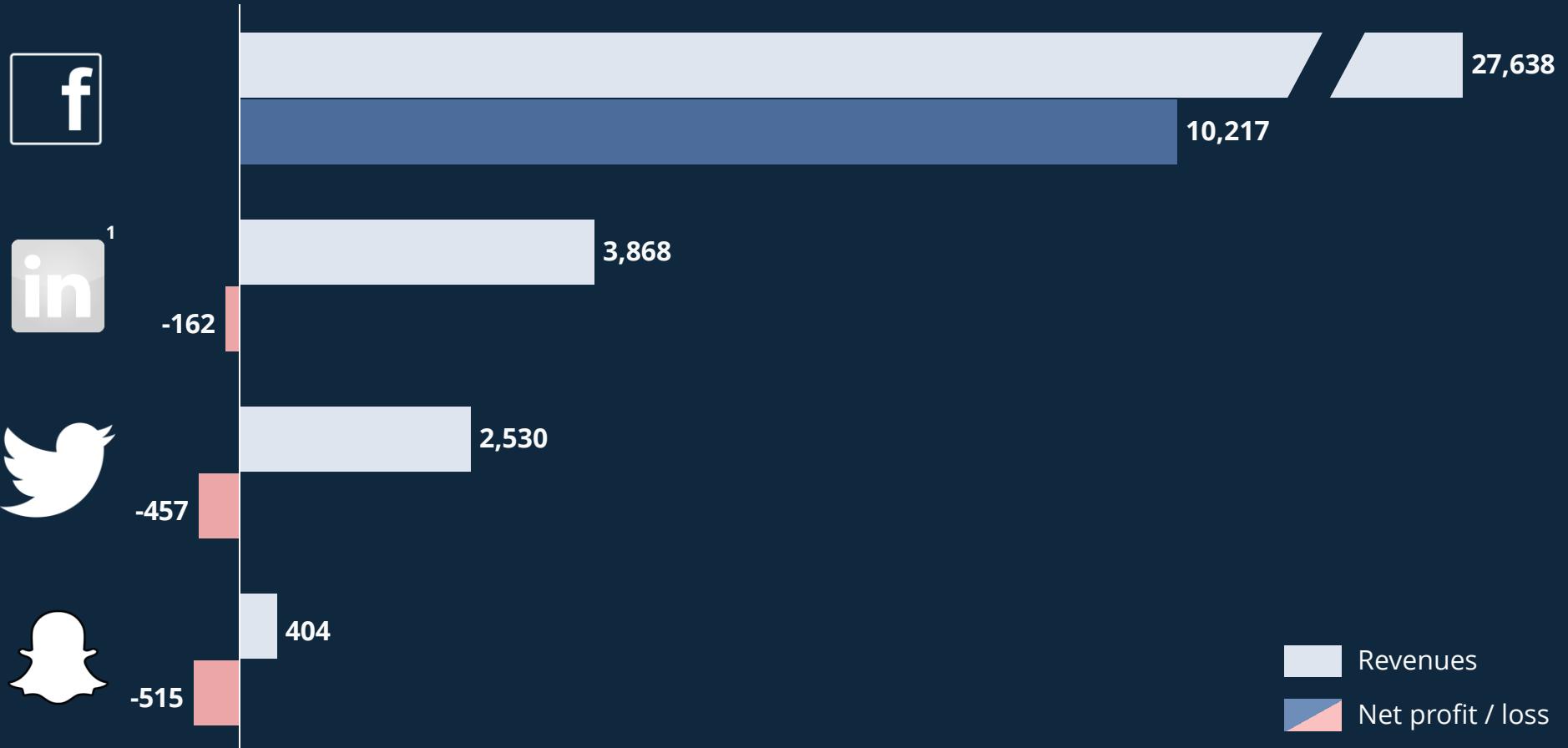


Source: Yahoo! Finance

Note: Figures as per 4-19-2017; all stock prices are closing prices; dividends are not considered

If you are not Facebook, it remains challenging to transform Social Media into a profitable business

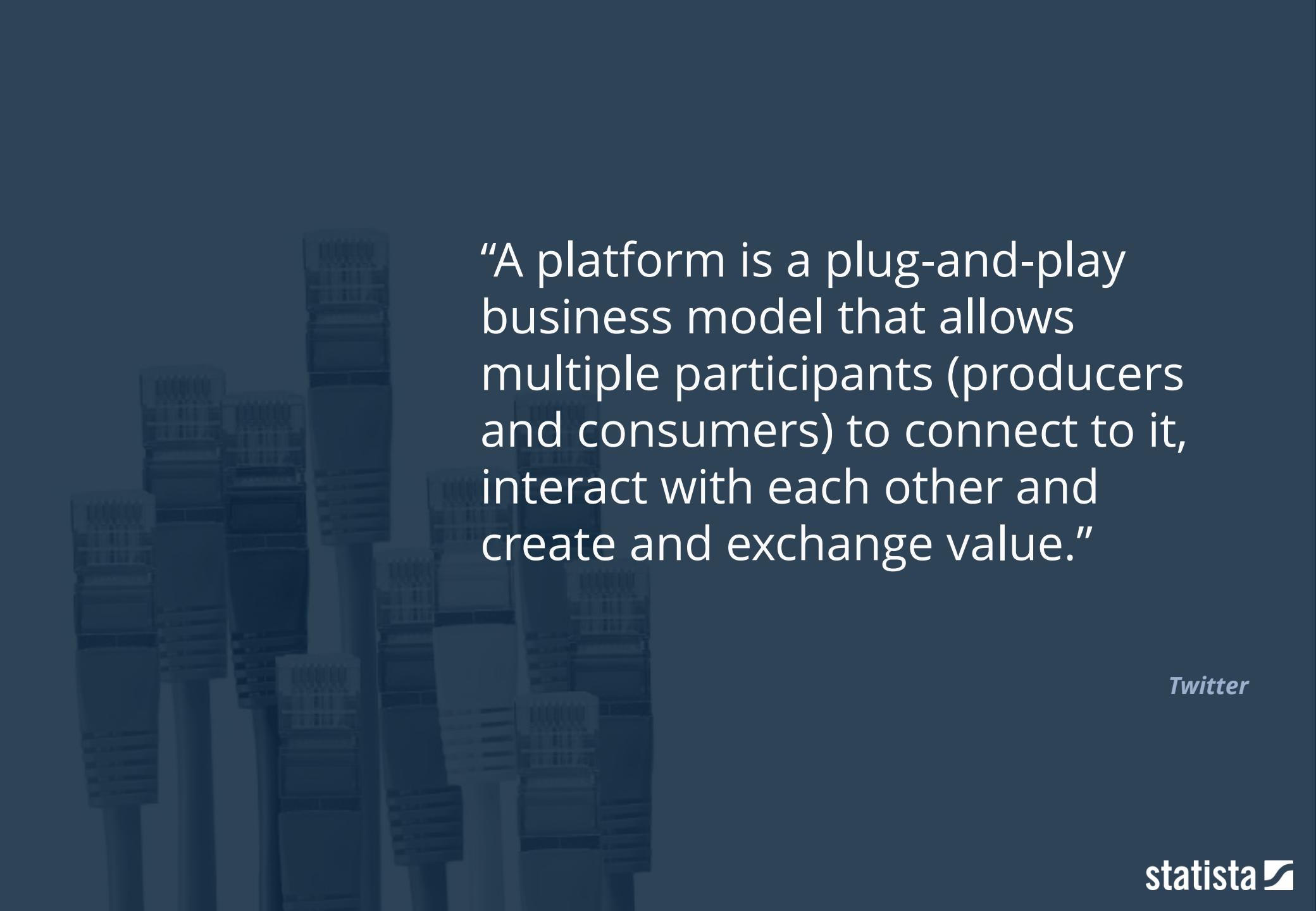
*FY2016 results of listed U.S. Social Media platforms (in US\$ million )*



Source: Company Information, as of Mar 2017

1: Statista estimated financial results for Q4-2016

# Platform Economics



“A platform is a plug-and-play business model that allows multiple participants (producers and consumers) to connect to it, interact with each other and create and exchange value.”

*Twitter*

# The success of a digital platform is dependent on its external ecosystem

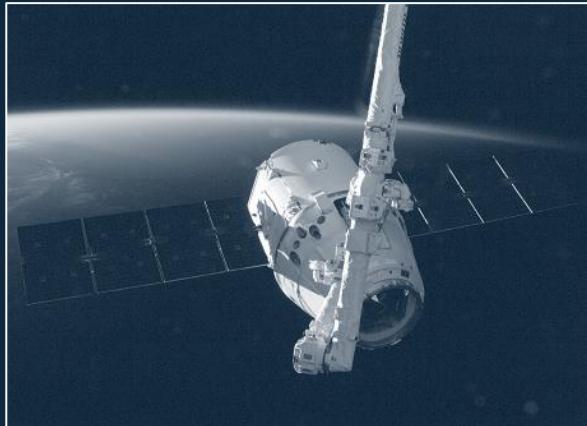
## *Factors determining successful platforms*

### Connection



Simplicity for partners to **plug in, share** and **transact**

### Gravity



Capability to **attract producers** and **consumers**

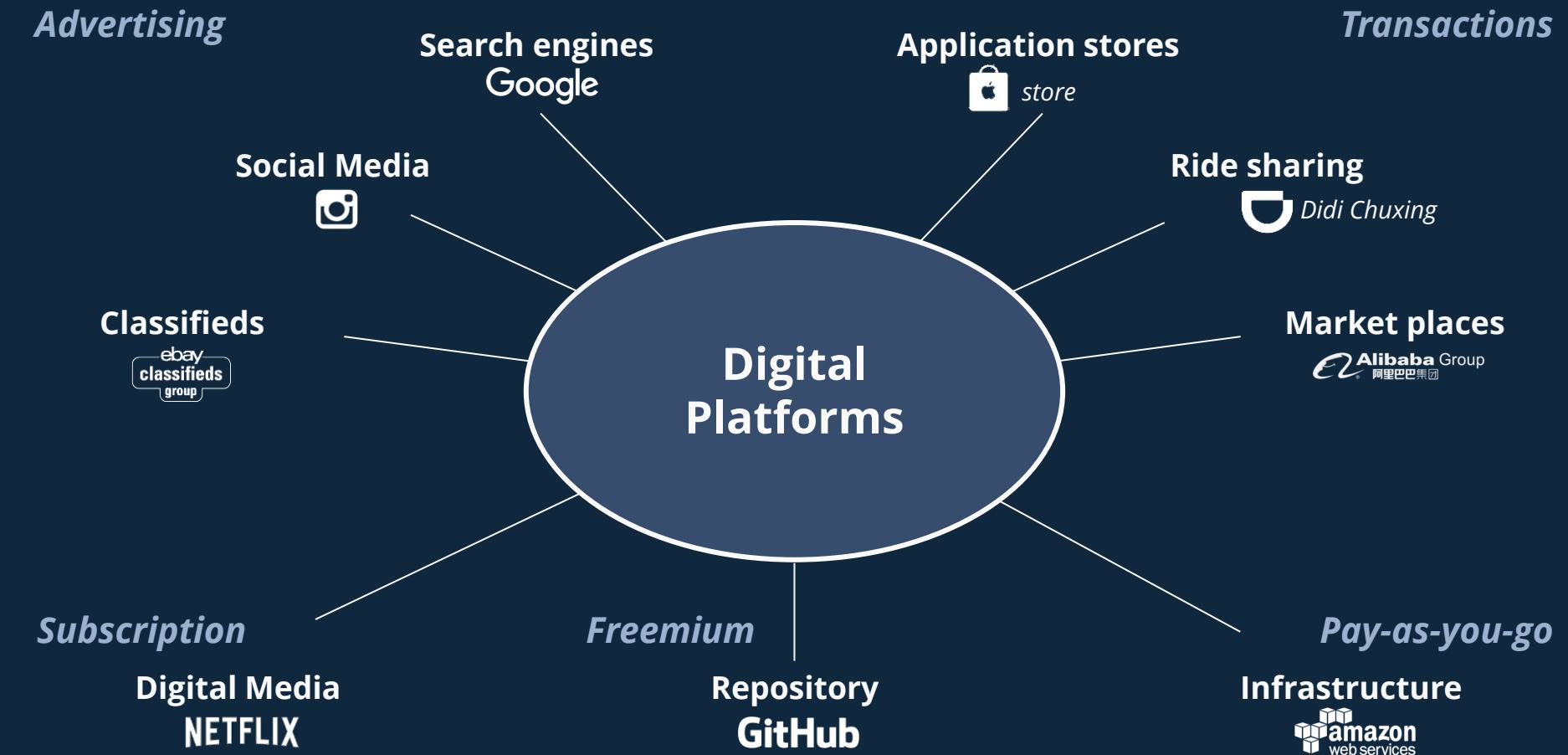
### Flow



Promotion of **co-creation** and **exchange of value**

# Digital platforms with varying business models can be found in multiple industries

*Marketplace examples and their business models*



Source: Statista Research

# The platform landscape consists of *White Sharks*, *Swordfish*, and *Piranhas*

## *Platform economics in nutshell*



### Digital **White Sharks**



- *At the top of the food chain -*

- › (Very few) digital economy **leaders**
- › Wide, **diverse** product portfolio
- › Gigantic **assets**

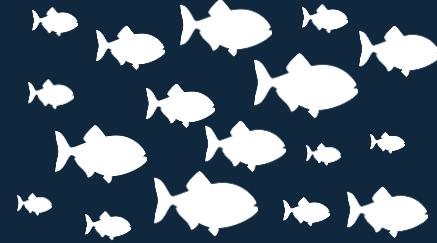


### Digital **Swordfish**



- *Big, fast, rarely get eaten -*

- › (Few) big **industry shaping** players
- › Deep, **vertical specific** products
- › Already **near peak** growth



### Digital **Piranhas**



- *Small but aggressive for prey -*

- › (Many) **product specific** players
- › Huge, product centric **competition**
- › **Peak growth** not yet reached

# Huge Chinese rivals are catching up on the big four U.S. platforms

*Top 15 publicly listed platforms by market cap (in US\$ billion)*



Source: Yahoo! Finance as per 04-12-2017

# VC-backed platforms are vertically focused and 1/3 of the Top15 is located in China

*Top 15 privately held, VC-backed platforms by market cap (in US\$ billion)*



Source: CB Insights as per 04-12-2017

Google  
Amazon  
Facebook  
Apple

# The biggest White Sharks in the digital economy: Google, Amazon, Facebook, and Apple

*Google, Amazon, Facebook and Apple key figures*

## Google

**Founded:** 09-1994  
**HQ:** Mountain View, California  
**CEO:** Sundar Pichai (since 10-2015)  
**Revenues<sup>1</sup>:** US\$90.23 billion  
**Net income<sup>1</sup>:** US\$19.48 billion  
**Employees:** 69,953  
**Market cap:** US\$558.1 billion



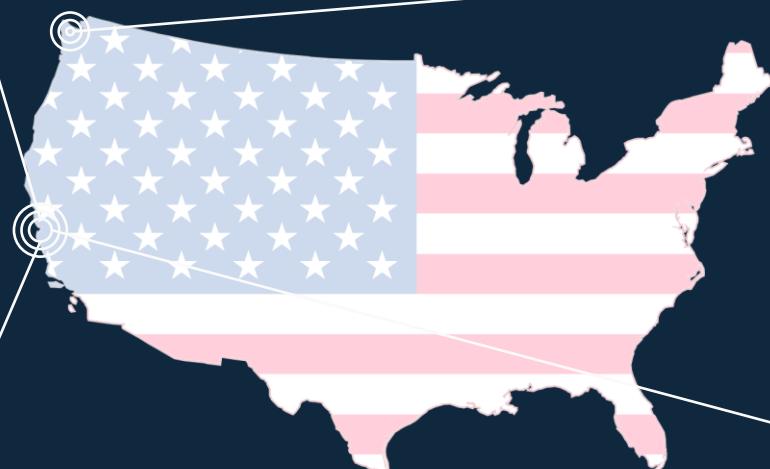
**Founded:** 02-2004  
**HQ:** Menlo Park, California  
**CEO:** Mark Zuckerberg (since 2004)  
**Revenues<sup>1</sup>:** US\$27.64 billion  
**Net income<sup>1</sup>:** US\$10.22 billion  
**Employees:** 17,048  
**Market cap:** US\$399.5 billion

## amazon

**Founded:** 05-1994  
**HQ:** Seattle, Washington  
**CEO:** Jeff Bezos (since 05-1996)  
**Revenues<sup>1</sup>:** US\$135.99 billion  
**Net income<sup>1</sup>:** US\$2.37 billion  
**Employees<sup>2</sup>:** 341,400  
**Market cap:** US\$407.0 billion



**Founded:** 04-1976  
**HQ:** Cupertino, California  
**CEO:** Tim Cook (since 08-2011)  
**Revenues:** US\$215.64 billion  
**Net income:** US\$45.69 billion  
**Employees:** 116,000  
**Market cap:** US\$727.4 billion



Source: Company Information, Yahoo Finance;

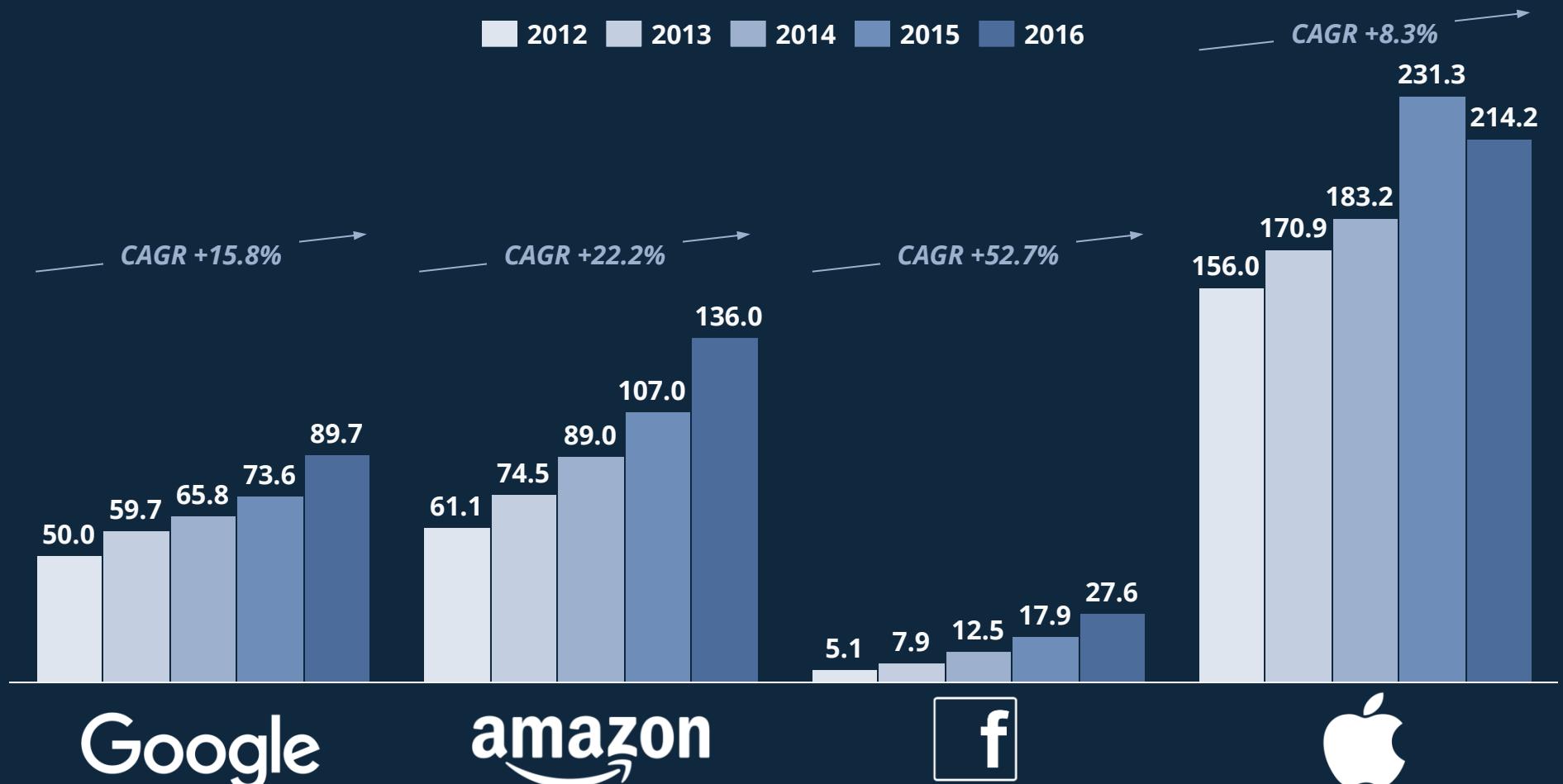
Note: All figures refer to end of fiscal year 2016, except market cap which is as of 03-10-2017; figures related to Google correspond to Alphabet Inc. conglomerate

1: Unaudited as per released financial results

2: Full-time and part-time employees

# Revenues of the biggest four U.S. players show consistent growth

*Google, Amazon, Facebook and Apple global revenues (in US\$ billion)*

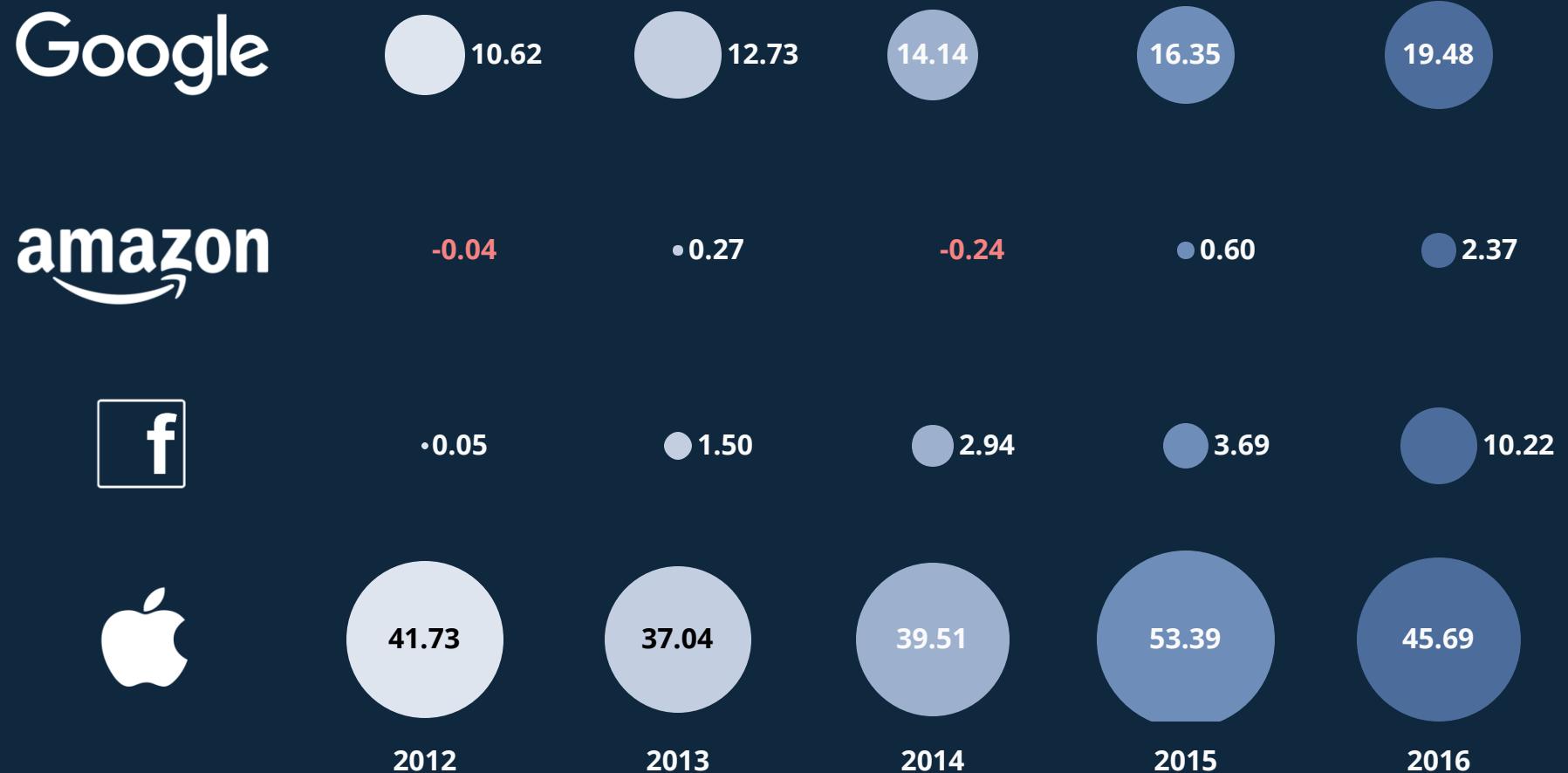


Source: Company Information

Note: FY2016 figures for Google, Amazon, Facebook are unaudited as per released financial results

# Apple has the highest net income, while Facebook has just started to make big money

*Google, Amazon, Facebook and Apple global net income (in US\$ billion)*



Source: Company Information

Note: The size of circles corresponds to net income; FY2016 figures for Google, Amazon and Facebook are unaudited financial results

# Relationships with their users are key to the biggest digital platforms' successes

*User touchpoints of Google, Amazon, Facebook and Apple*

				
<b>IT &amp; Infrastructure</b>	Google fiber	 fulfillment by amazon	Aquila	Apple SIM
<b>Artificial Intelligence</b>	 Google Assistant		Jarvis	 Siri
<b>Hardware Devices</b>	 Pixel  Chromecast	  	 oculus	   etc.
<b>Communication &amp; Messaging</b>	 Google+  Allo		 WhatsApp   Messenger  Workplace	 iMessage
<b>Digital Media &amp; Entertainment</b>	 Google Play 		facebook.com/gaming	  
<b>Connected Car &amp; e-Mobility</b>		 Alexa integration		 CarPlay
<b>E-Commerce &amp; Retail</b>	 Purchase on Google'	 etc. 	Facebook 'Buy-Button'	 iBeacon  store
<b>FinTech &amp; Payment</b>	 			
<b>Navigation &amp; Location services</b>		Amazon Maps API, MAPS.ME integration		 Apple Maps
<b>Advertising</b>	  	 	Facebook Business, Instagram Business	Apple Search Ads

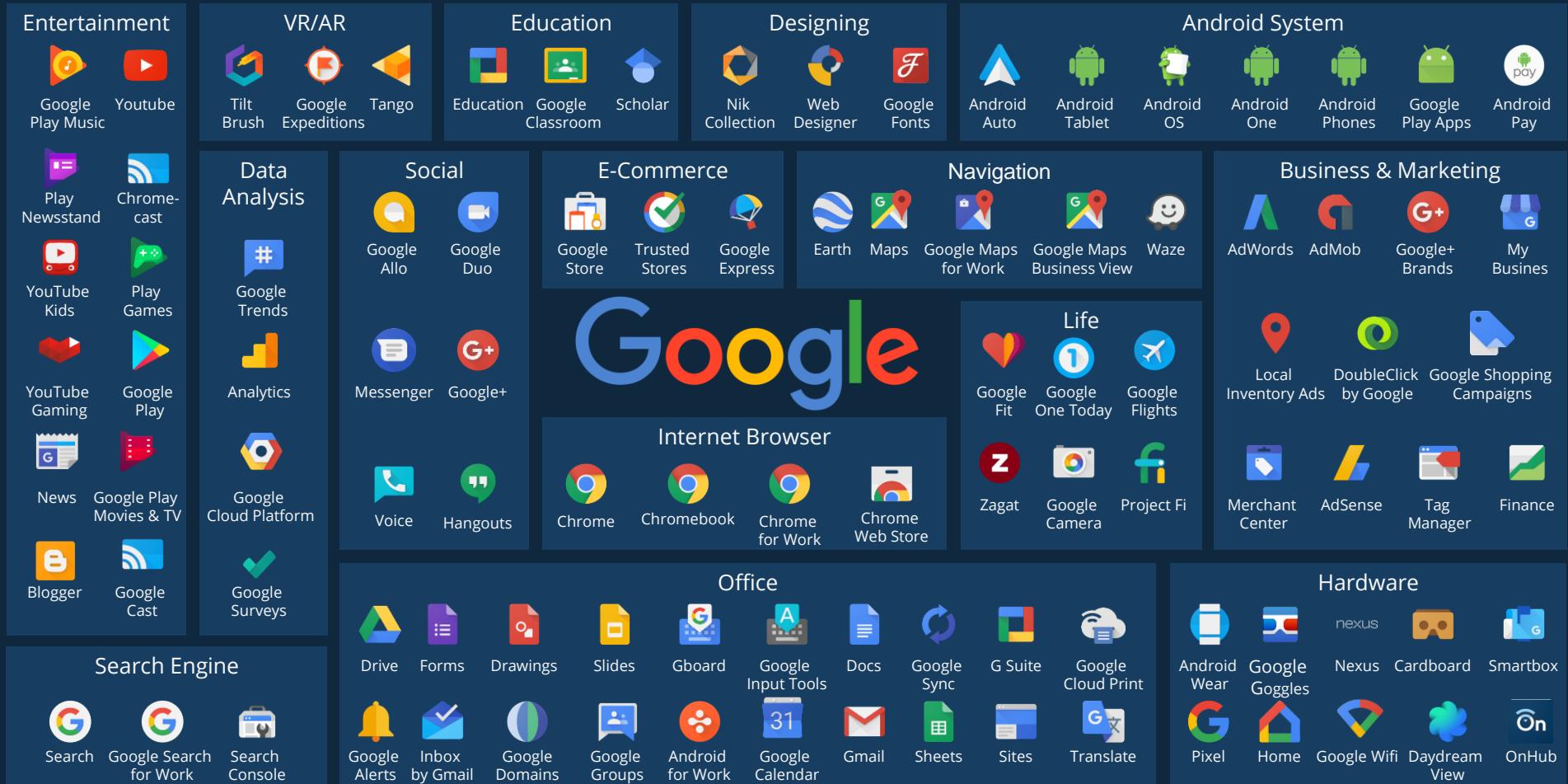
Source: Statista Research

# 59,141

Every second **Google** receives 59,141 search requests.  
On a single day, this number totals over 5.1 billion.

# Google's extensive product portfolio covers nearly all aspects of the digital experience

## *Google product portfolio*



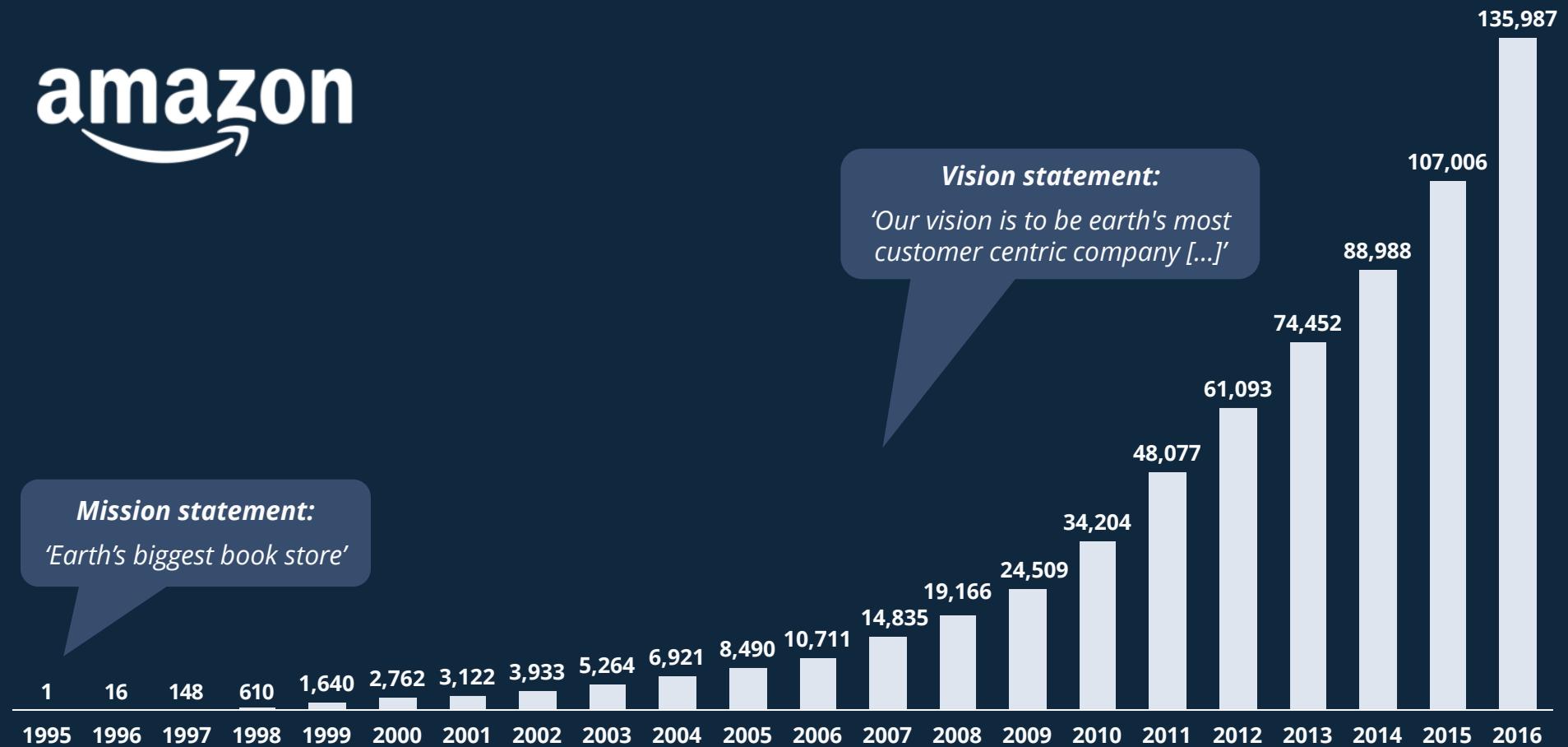
Source: Google

“Day 2 is stasis. Followed by irrelevance. Followed by excruciating, painful decline. Followed by death. And that is why it is always Day 1.”

**Jeff Bezos,**  
Founder and CEO of **Amazon**

# The key to Amazon's success is Jeff Bezos' "Day 1" philosophy

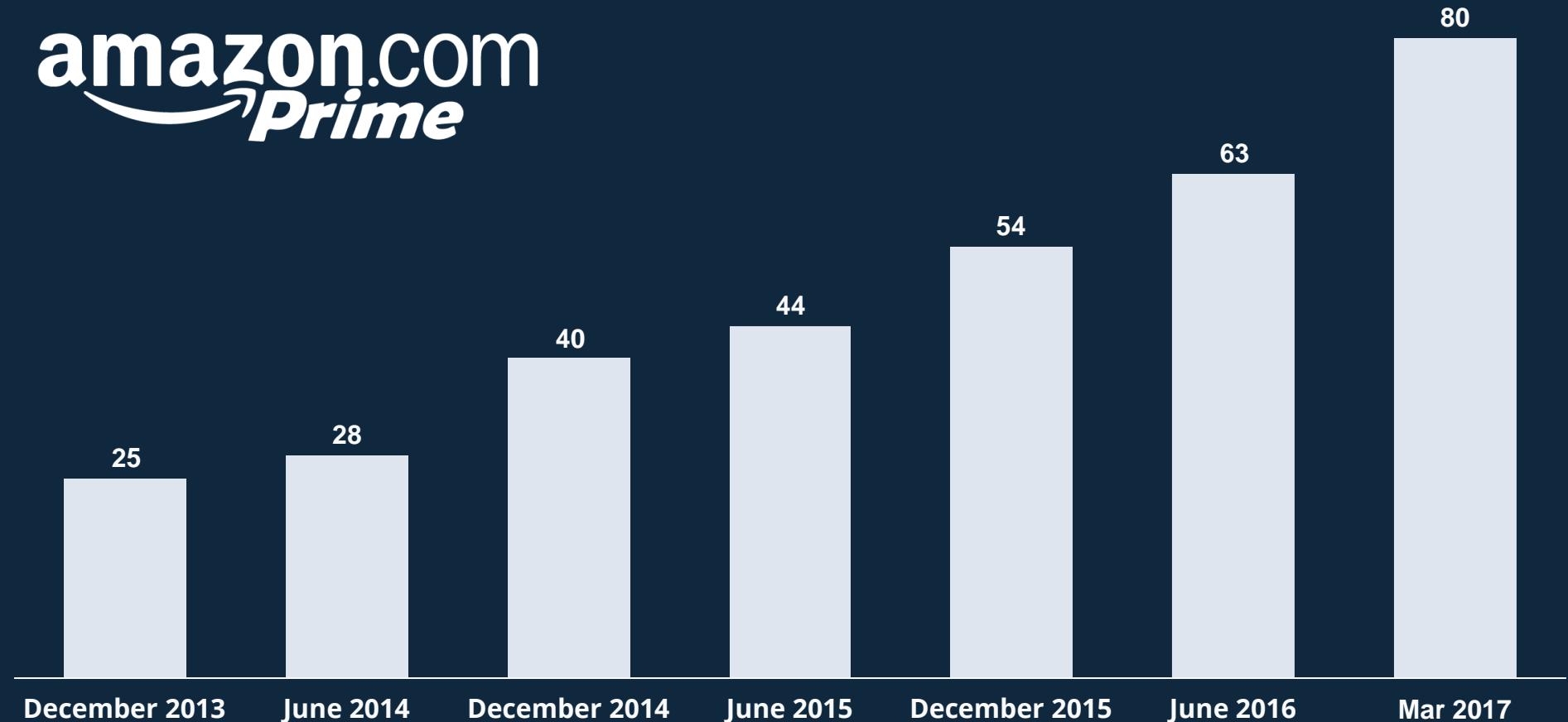
*Amazon revenue development from foundation to 2016 (in US\$ million)*



source: Amazon, Inc.

# About 32% of U.S. e-Commerce customers subscribe to Amazon Prime

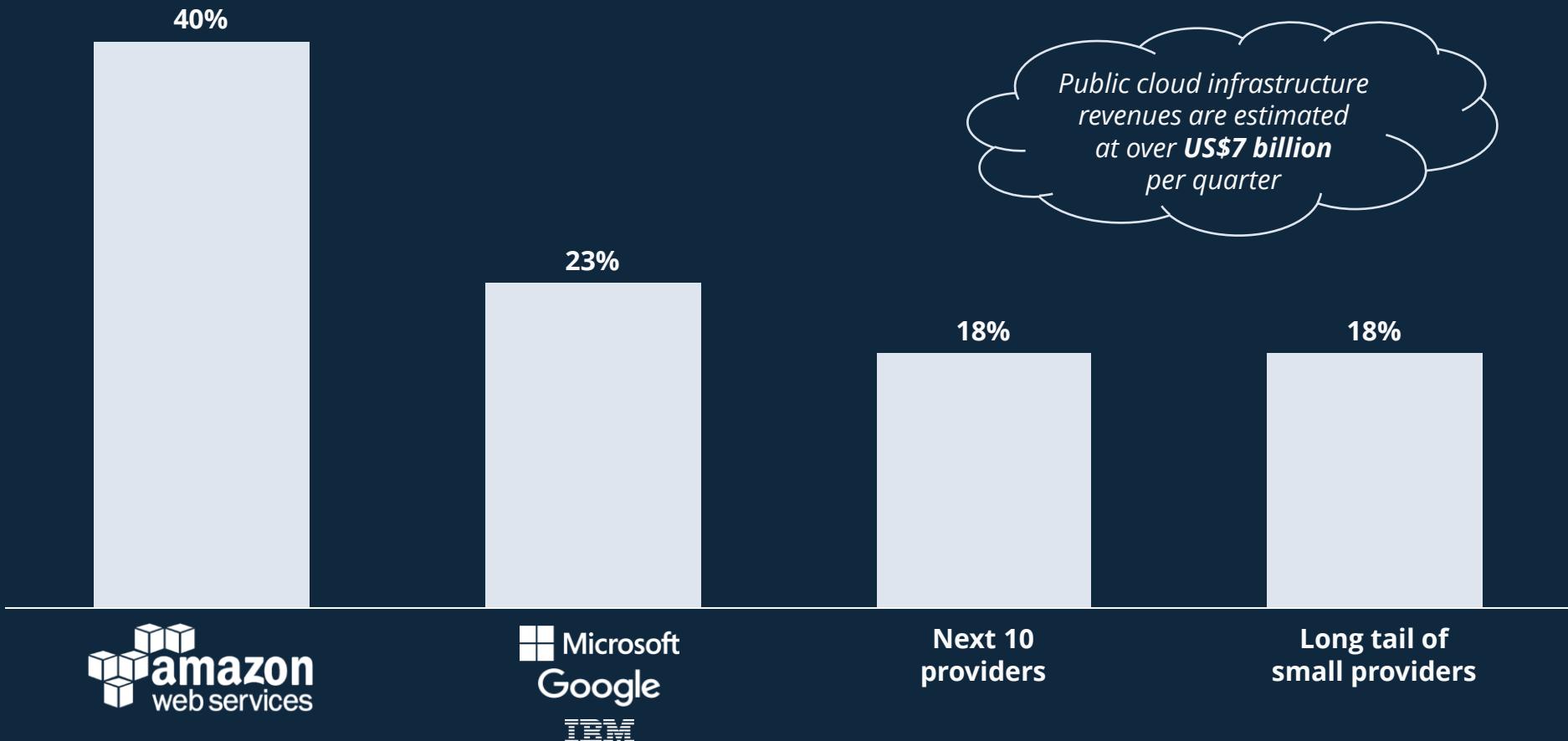
*Amazon Prime subscribers in the United States (in million users)*



**source:** Consumer Intelligence Research Partners, [Statista Digital Market Outlook](#)  
Note: 249 million e-Commerce users in the U.S. in 2016 (Statista estimates)

# Amazon is far more than just an e-Commerce giant; it also controls the public cloud landscape

*Global public cloud infrastructure<sup>1</sup> market share (% of revenue) in Q4-'16*



**source:** Synergy Research Group

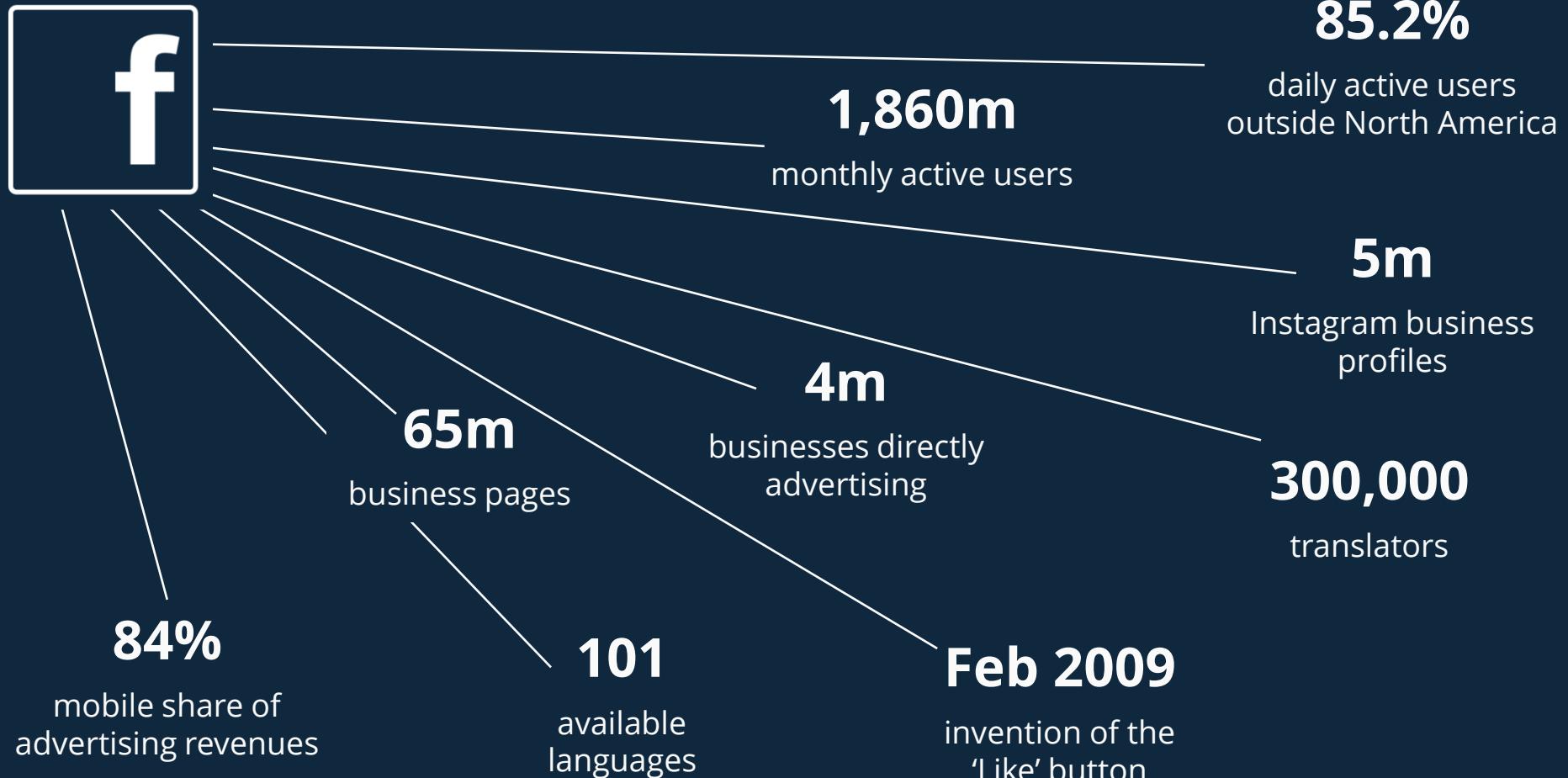
1: includes platform as a service (PaaS) and infrastructure as a service (IaaS) revenues

# 300,000,000,000 gigabytes

**Facebook** stores more than 300 million gigabytes of user data.  
This data corresponds to 126 digital books about each active user.

Facebook has 1,860m MAU<sup>1</sup> with 85.2% of them located outside of North America

### *Facebook key facts*



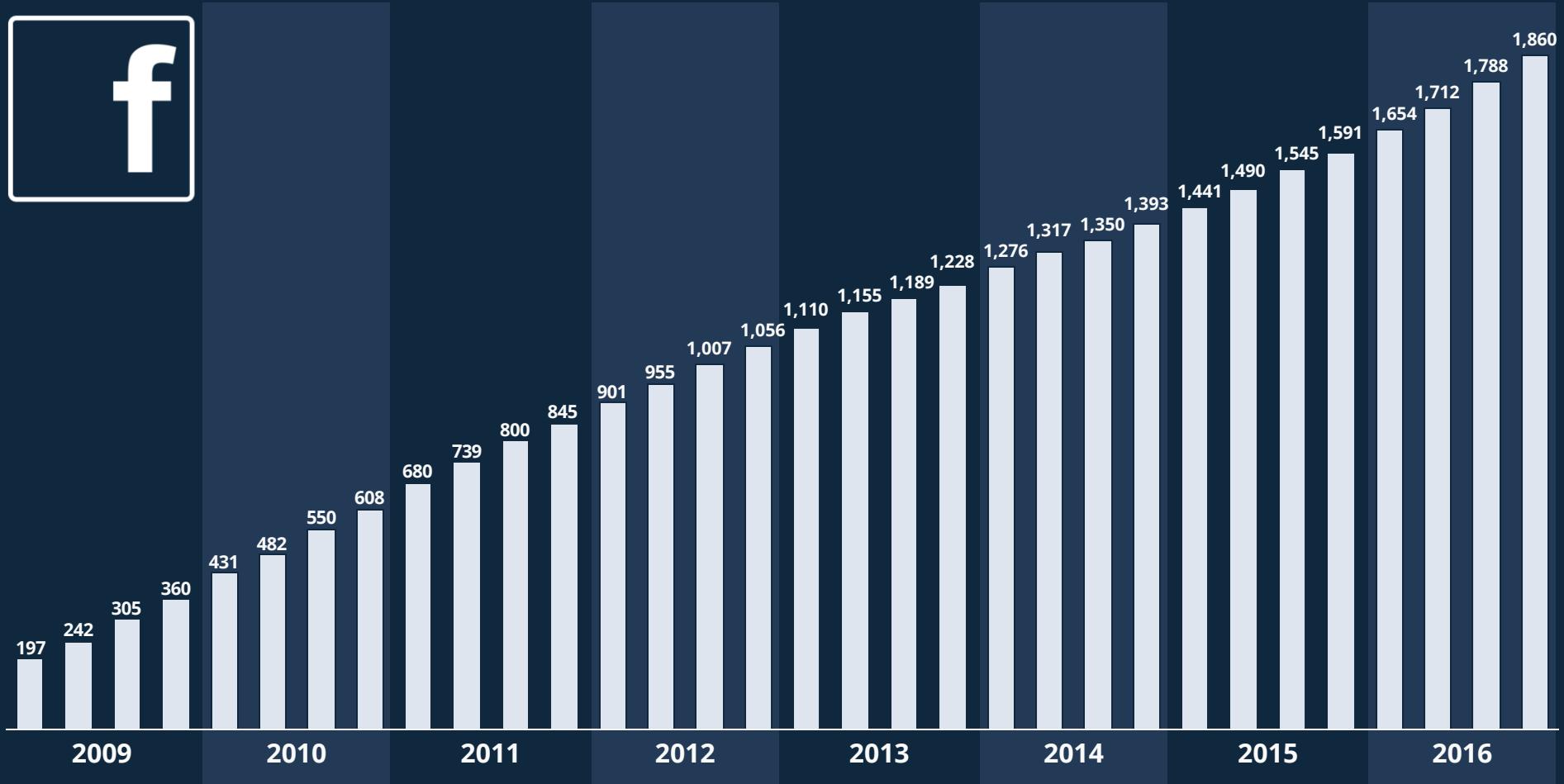
Source: Facebook Inc.

Note: all figures as of Q4 '16

1: MAU = monthly active user

# Facebook's active user base has been consistently growing

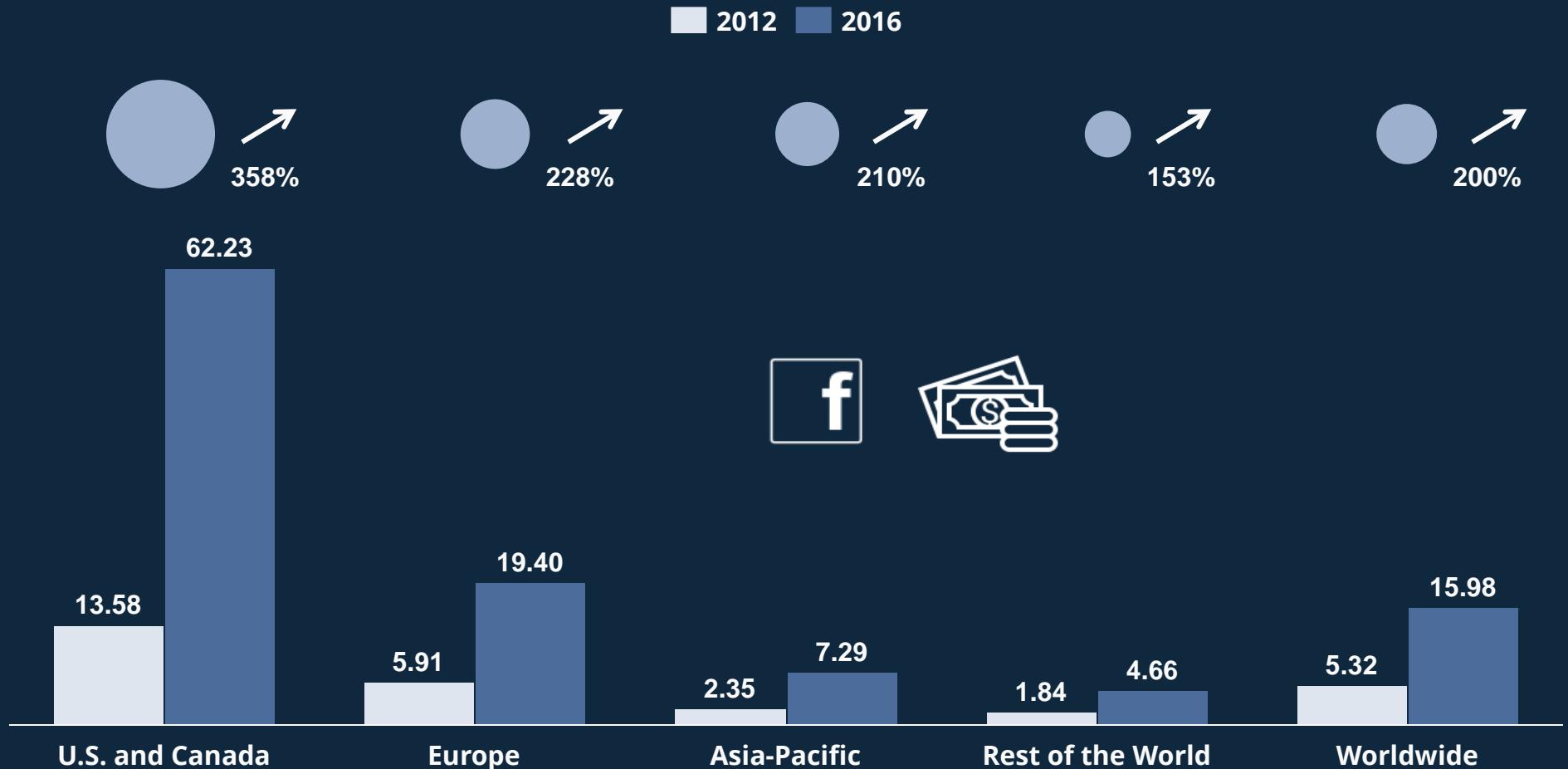
*Global number of Facebook's monthly active users (in million users)*



source: Facebook Inc.

# Imagine if Facebook's worldwide average revenue per user equaled that of North America

*Facebook's average revenue per user, by user geography in US\$*



source: Facebook Inc.

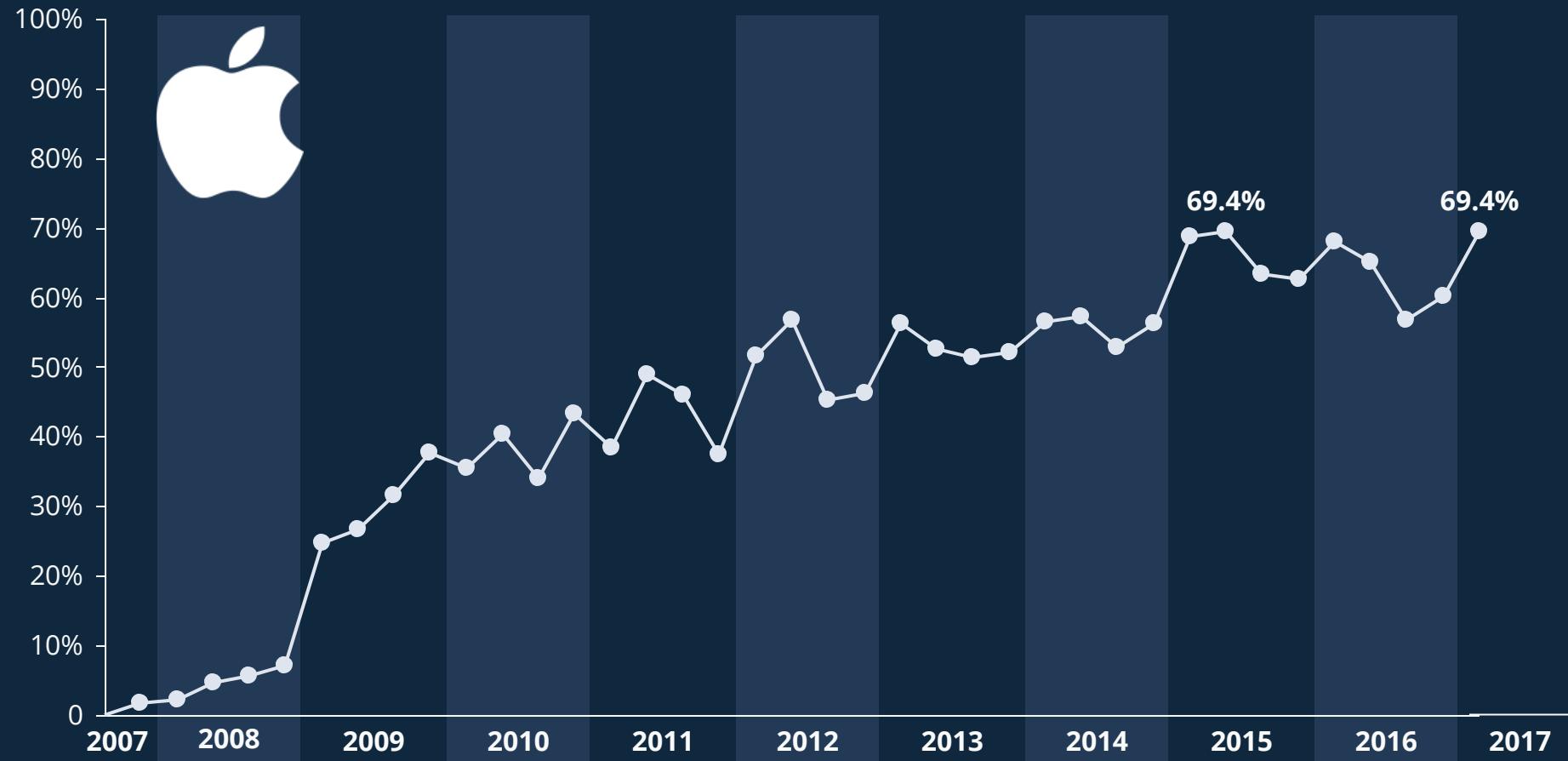
“There is no chance that the iPhone is going to get any significant market share.”

**Steve Ballmer** in 2007,  
Former CEO of **Microsoft**



# With nearly 70% revenue share in Q1-'17, the iPhone is the biggest success in Apple's history

*iPhone revenue as percentage of Apple's total revenue since 2007<sup>1</sup>*

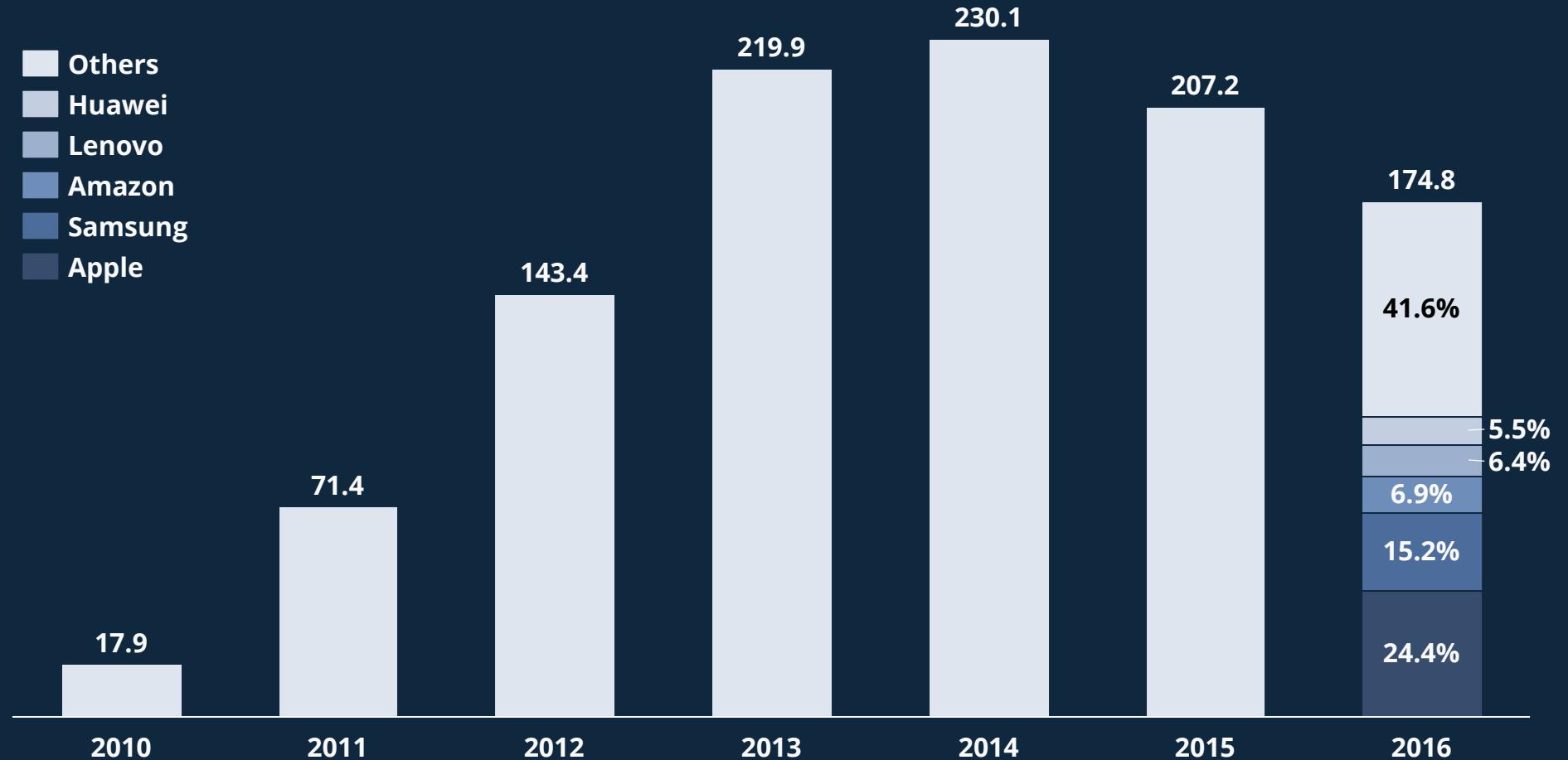


**source:** Company Information

1: Fiscal quarters; Apple's fiscal year ends in September

# Apple is the biggest vendor in a shrinking tablet market

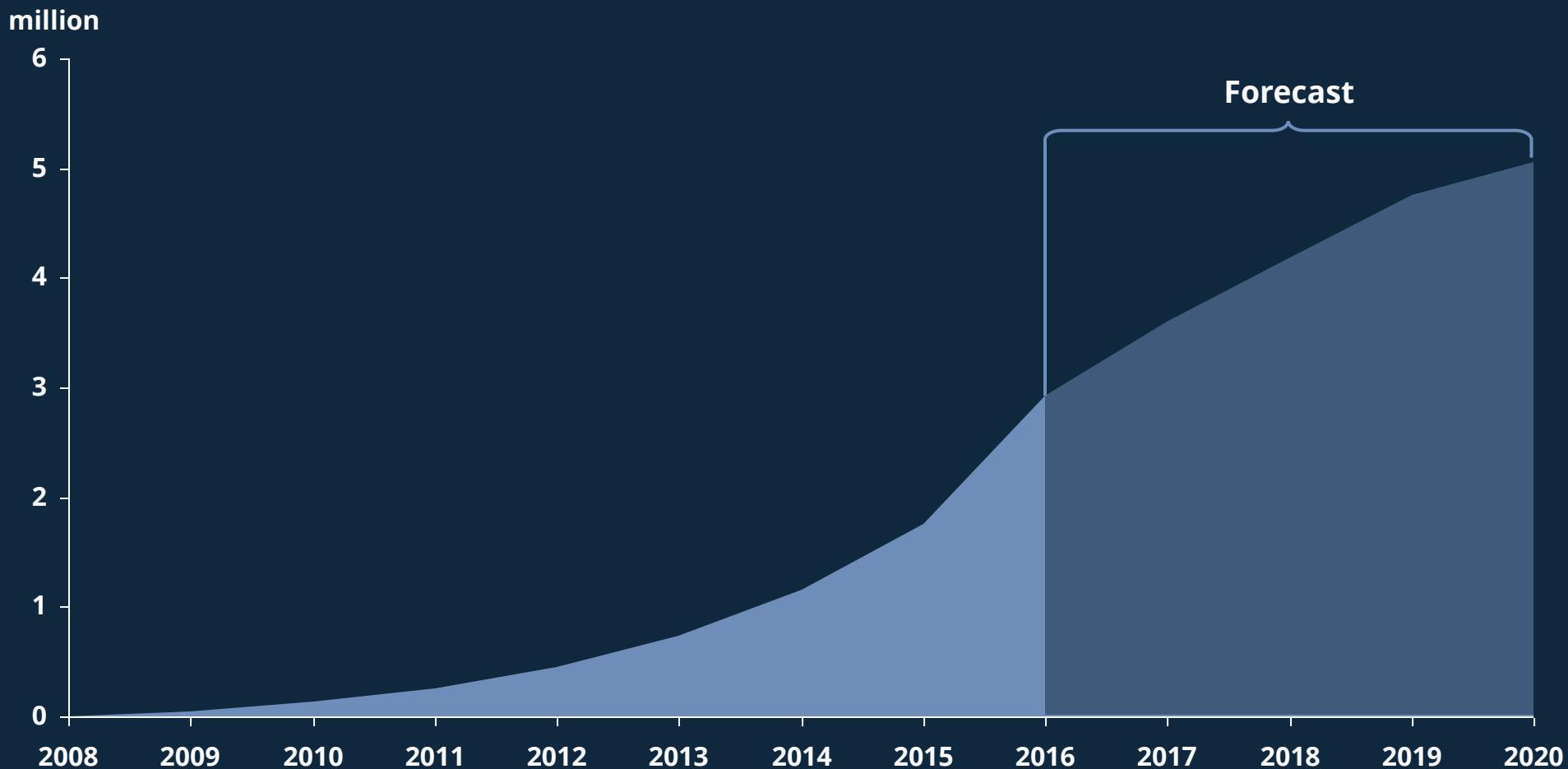
*Global tablet shipments in 2016 in millions*



source: IDC

The number of active Apps in Apple's App Store is predicted to reach over 5 million by 2020

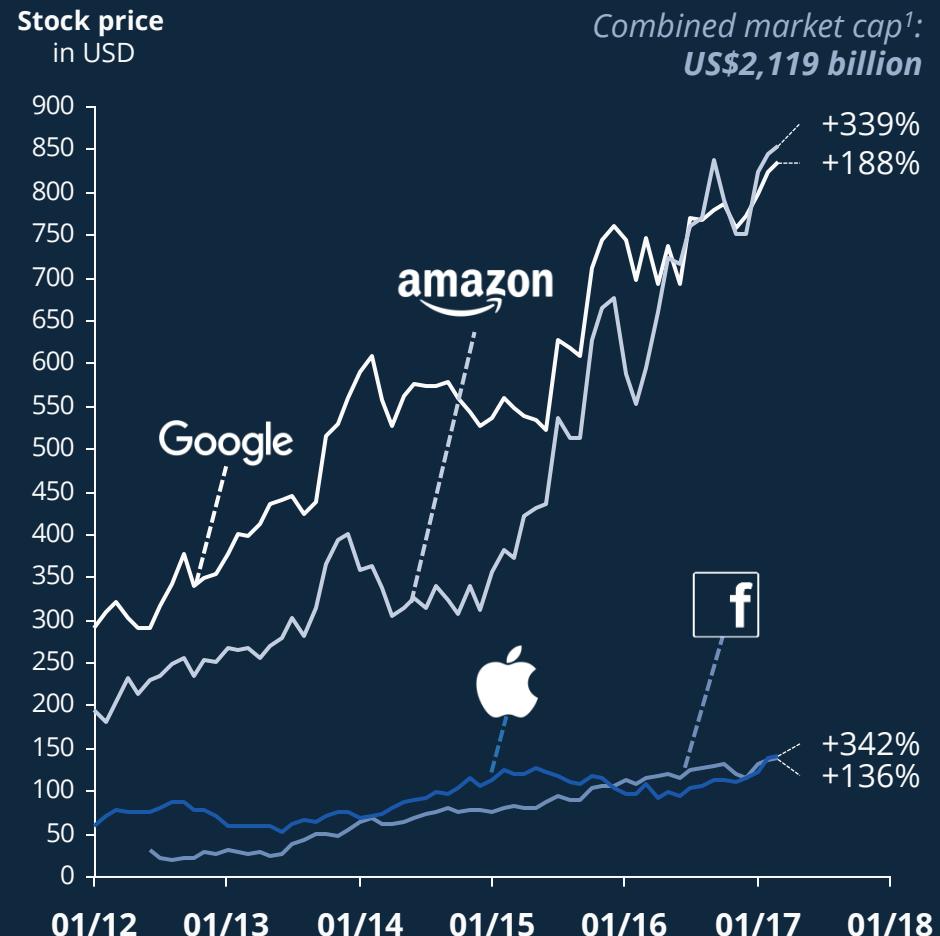
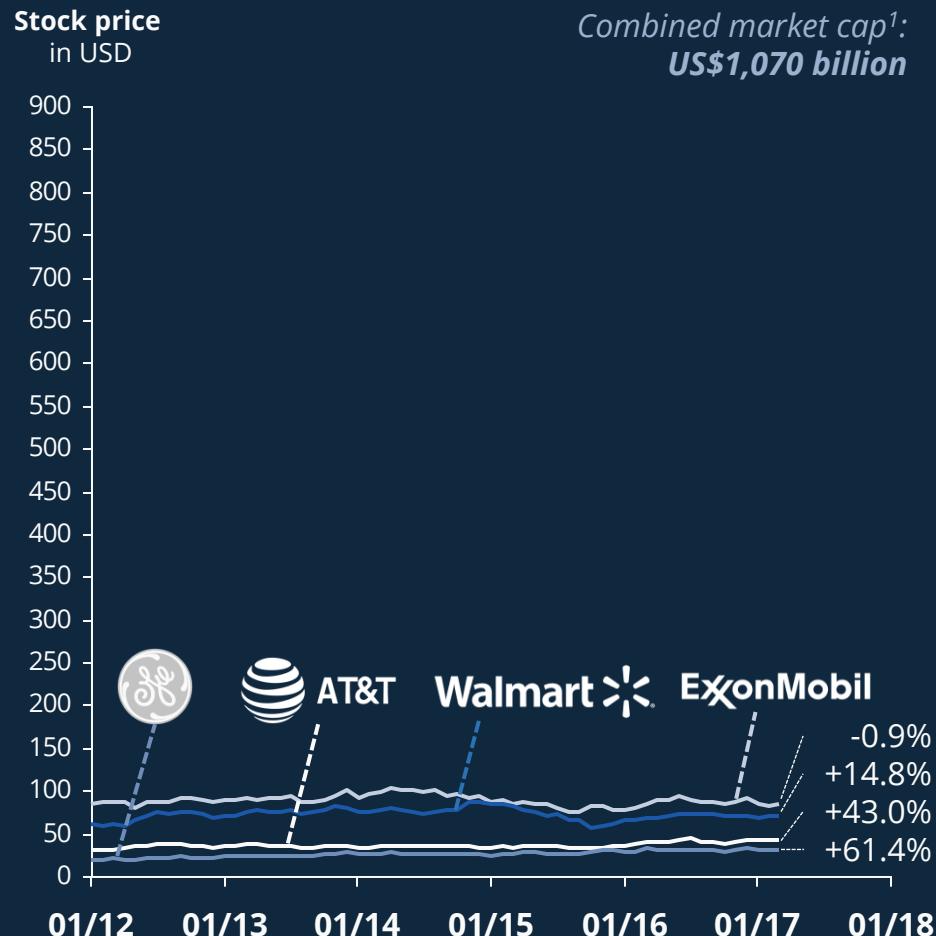
*Projected number of active apps in Apple's App Store worldwide by 2020*



source: SensorTower

# Stock market prices reflect the tech-giants' development

*U.S. tech-giants vs. Top U.S. non-tech giants stock market development*



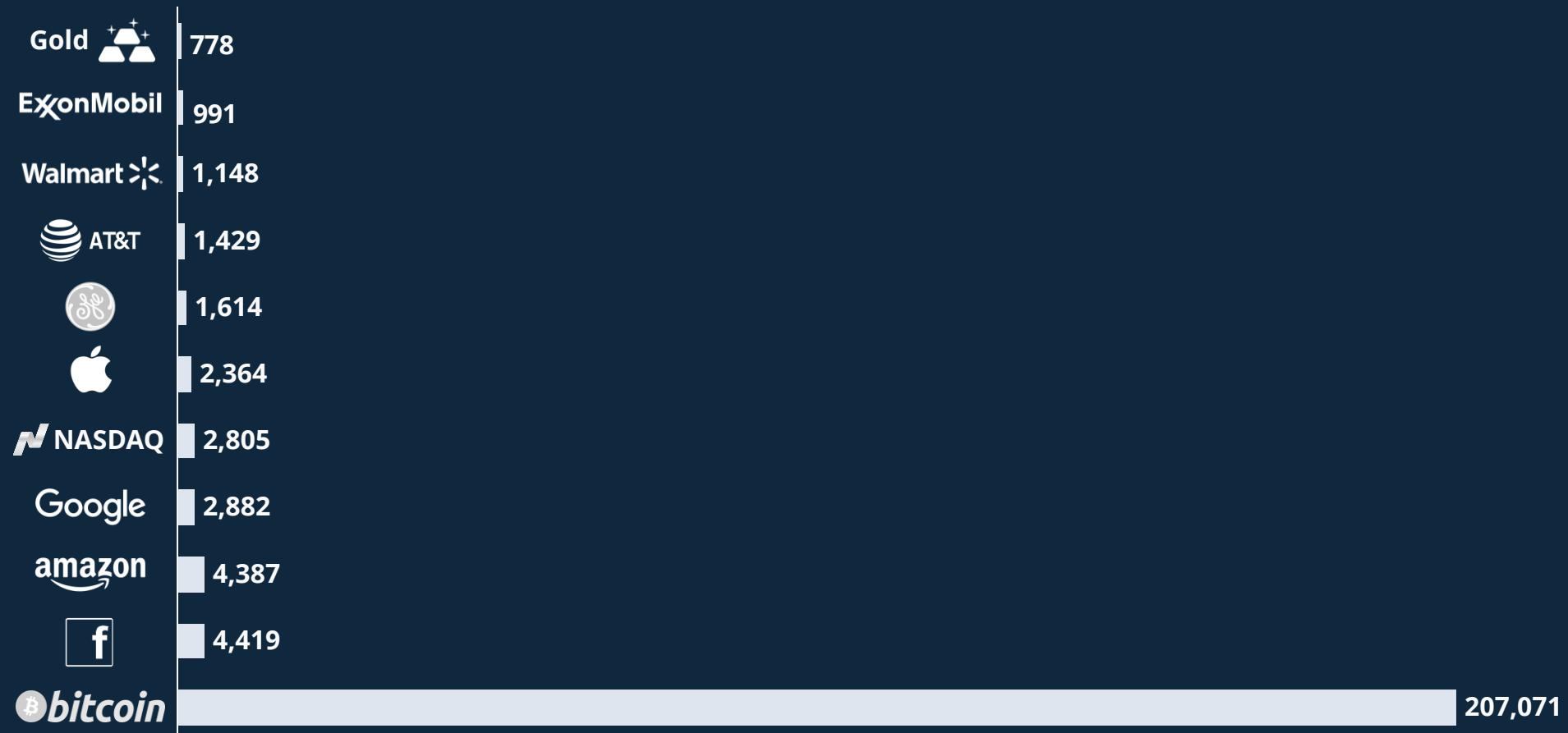
Source: Yahoo! Finance

Baseline for stock prices are GE, T, WMT, XOM, GOOGL, AMZN, AAPL, FB

1: Figures as per 03-10-2017; all stock prices are closing prices; dividends are not considered

# Only investing \$1,000 in bitcoins would have been more profitable than in digital platforms

*Pay-off in Mar 2017 for a US\$1,000 investment in Jan 2012*



Source: Yahoo! Finance; Coindesk.com  
Baseline for stock prices are GE, T, WMT, XOM, GOOGL, AMZN, AAPL, FB (NASDAQ)  
Note: Dividends are not considered

# As many western platforms struggle in China, Chinese competitors have stepped up

*Major digital platforms and their appearance in the Chinese market*

## Google

1.45% search engine  
market share

## amazon

0.8% e-Commerce  
market share

## ebay

Fail and retreat  
a decade ago

## UBER 优步

Acquired by  
Didi Chuxing

## NETFLIX

Licensing partnership  
instead of own business

## YAHOO!

0.49% search engine  
market share



BANNED



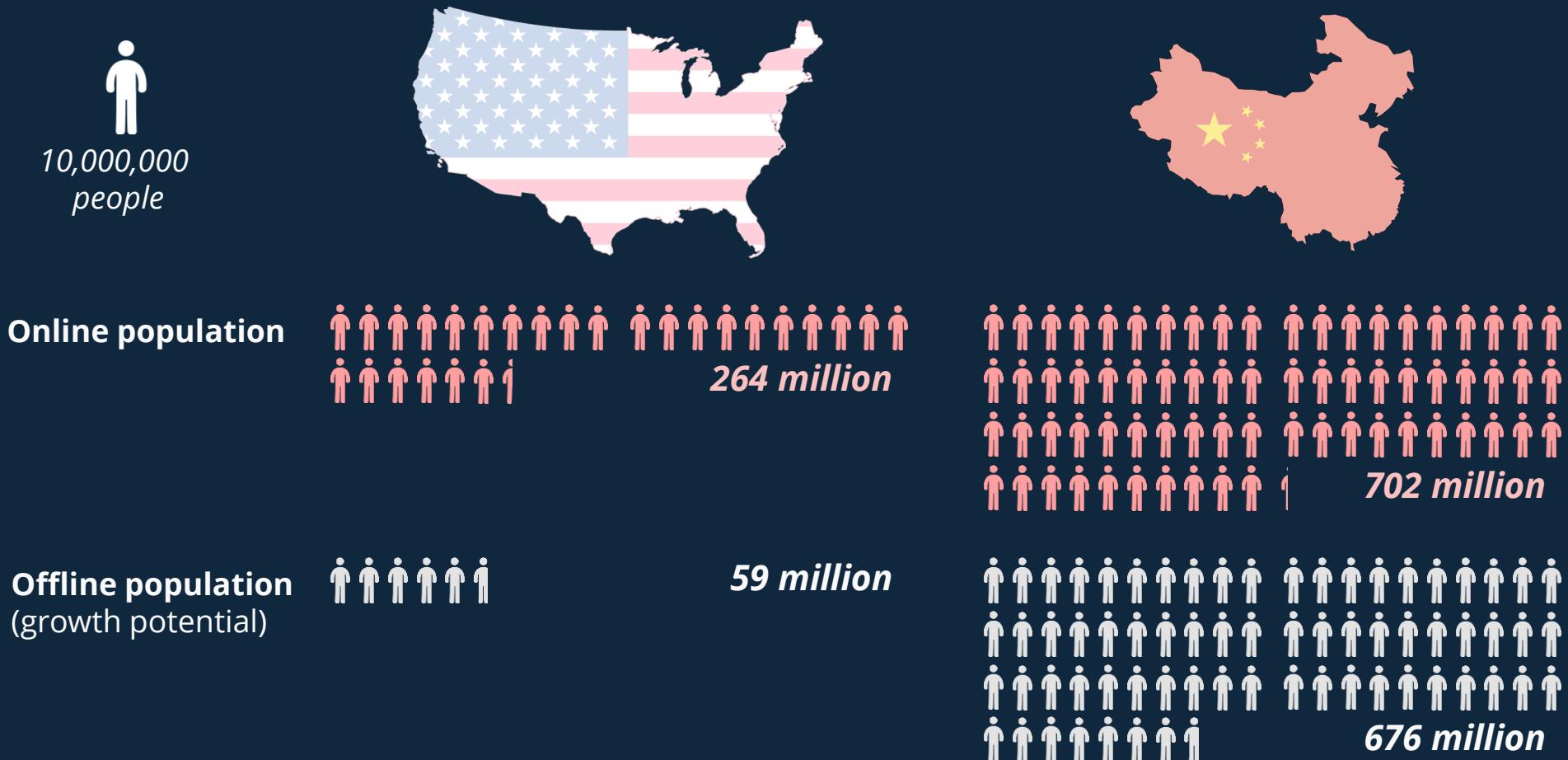
## PayPal

0.0001% share of China  
e-Commerce transactions

Baidu  
Alibaba  
Tencent  
Huawei

# The untapped potential of 676m awakening digital customers makes China unique

*Online vs. Offline population in China and the U.S. in 2016*



Source: [Statista Digital Market Outlook](#)

# Baidu, Alibaba, Tencent, and Huawei (BATHu) are China's overlooked tech-giants

## BATHu key figures



**Founded:** 01-2000  
**HQ:** Peking  
**CEO:** Robin Lu (since 01-2004)  
**Revenues<sup>1</sup>:** US\$10.20 billion  
**Net income<sup>1</sup>:** US\$1.68 billion  
**Employees:** 45,887  
**Market cap:** US\$60.04 billion



**Founded:** 11-1998  
**HQ:** Shenzhen  
**CEO:** Ma Huateng (since 11-1998)  
**Revenues<sup>1</sup>:** US\$21.97 billion  
**Net income<sup>1</sup>:** US\$5.99 billion  
**Employees:** 38,775  
**Market cap:** US\$257.57 billion



**Founded:** 04-1999  
**HQ:** Hangzhou  
**CEO:** Daniel Zhang (since 05-2015)  
**Revenues:** US\$15.69 billion  
**Net income:** US\$11.06 billion  
**Employees:** 36,446  
**Market Cap:** US\$258.47 billion



**Founded:** 1987  
**HQ:** Shenzhen  
**CEO:** Ren Zhengfei (since 1988)  
**Revenues:** US\$75.10 billion  
**Net income:** US\$5.34 million  
**Employees:** 180,000  
**Market cap:** not listed

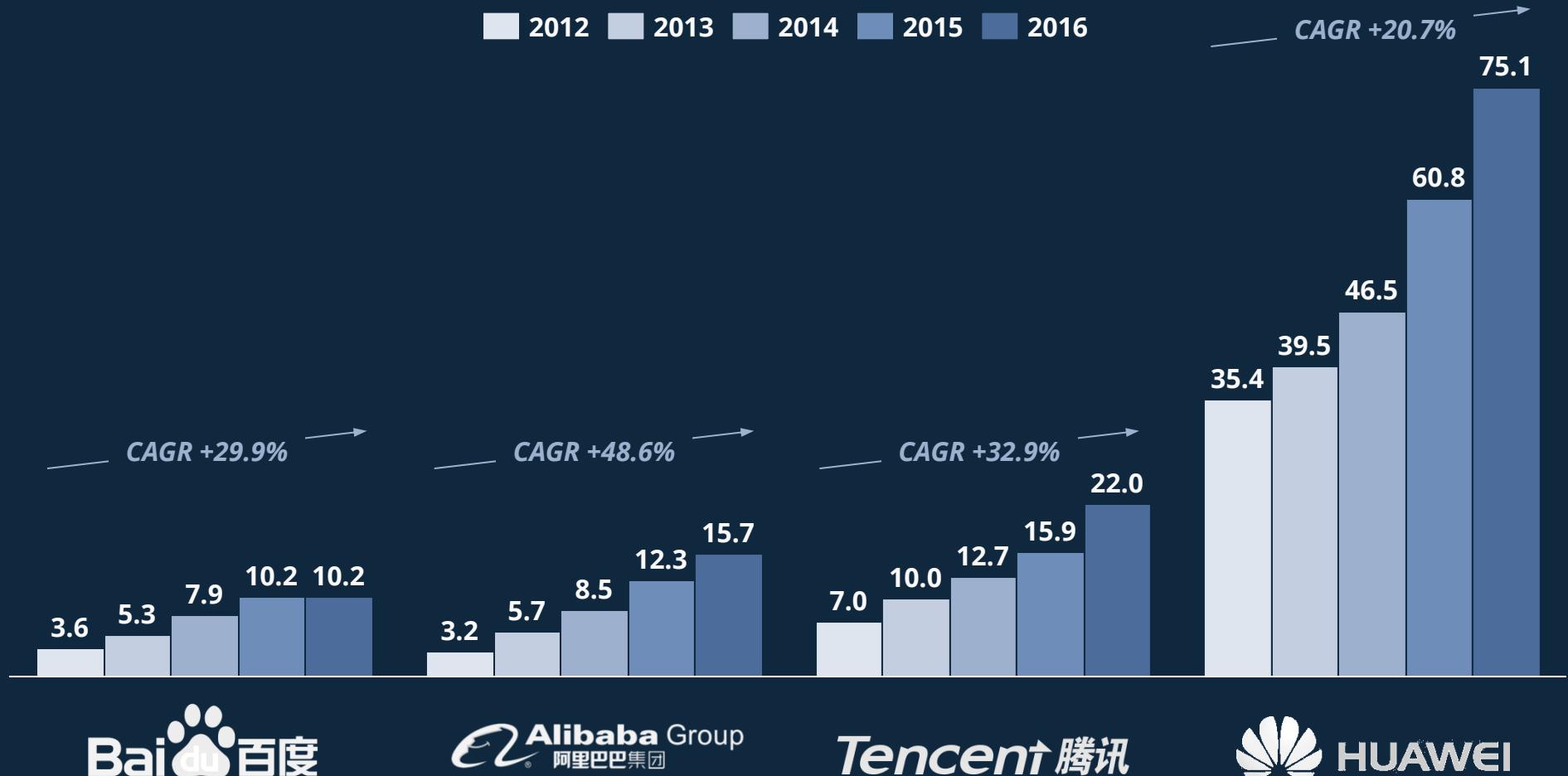
Source: Company Information; Yahoo! Finance

Note: Alibaba Group FY2016 ended on 03-31-2016; revenues converted from RMB to US\$ as per annual reports respectively press releases

1: Unaudited as per FY2016 released financial results

BATHu's compound annual growth rates from 2012 to 2016 are consistently above 20%

*BATHu global revenues (in US\$ billion)*



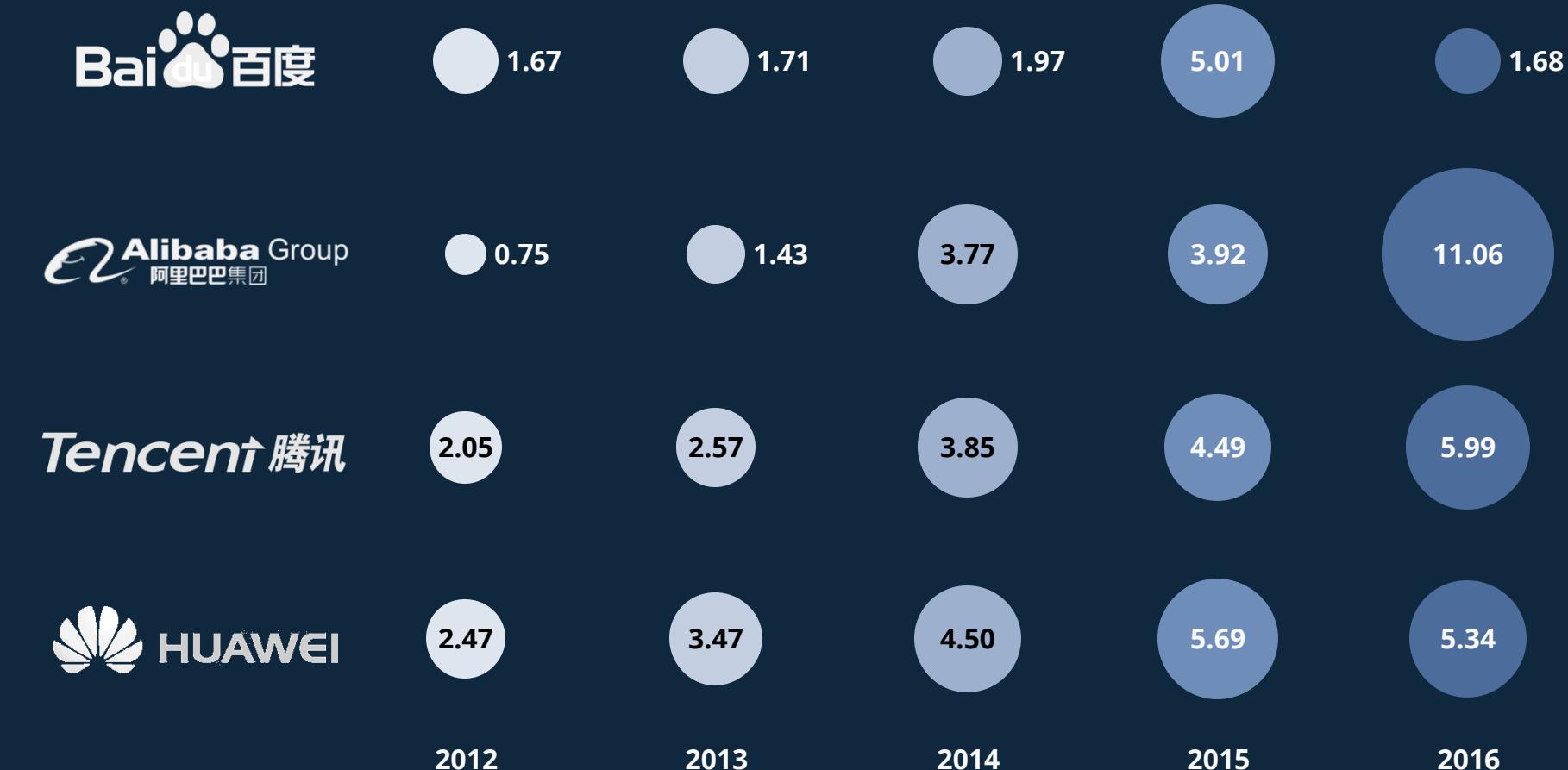
Source: Company Information

Note: Tencent and Baidu monetary figures for FY2016 yet unaudited

Revenues converted from RMB to US\$ as per annual reports respectively press releases

# Alibaba's FY16 net income was almost fifteen times higher than 5 years ago

*BATHu global net income in US\$ billion*



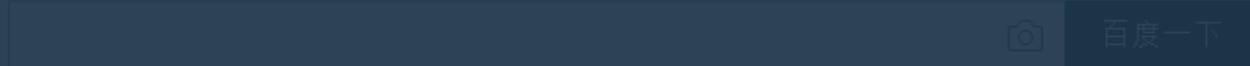
Source: Company Information

Note: The size of circles corresponds to net income; Tencent and Baidu monetary figures for FY2016 not yet unaudited  
Net income converted from RMB to US\$ as per annual reports respective press releases

# Accompanied by their financial prosperity, Chinese platforms invest in U.S. startups

*VC-investments of Baidu, Alibaba and Tencent in the U.S.*

	2014		2015		2016	
<b>Baidu 百度</b>	IndoorAtlas		Cloudflare IndoorAtlas	Taboola GWC	Dynamic Yield Velodyne LiDAR	ZestFinance
<b>Alibaba Group 阿里巴巴集团</b>	Peel Kabam Lyft	Tango 1stdibs	Lyft Mei.com	Snap Inc. Quixey	Barefoot Networks	Magic Leap PlaceIQ
<b>Tencent 腾讯</b>	Playdots Kamcord Heirloom Technology Tile Heirloom, Inc. Woqu.com AltspaceVR	Moon Express, Inc. Vurb Women.com Scaled Inference TapZen Whisper Weebly	Circle Medical Watsi Artillery FlightCar Clinicloud Nav Nixie Labs HomeHero Tute Genomics Tissue Analytics Lyft Pocket Gems	CloudMedx Inc Scanaudu Skymind VC Mobile Entertainment Inc. Cyanogen Satellogic Robot Entertainment Discord SketchMe	Stae Clear Labs Barefoots Networks Petuum Skymind Nav Payoff Meta	Tile Paradox Interactive Planetary Resources Kamcord Diffbot Discord



# 1st

**Baidu** was the first Chinese company to be listed in the NASDAQ 100 index.



手机百度

# Although primarily operating in China, Baidu dips its toes into new markets

## Baidu key facts



### Performance

2<sup>nd</sup> largest search engine in the world



### Stock Market

1<sup>st</sup> Chinese company listed in NASDAQ 100



### Request Origin

- 1) China: 91.5%
- 2) Japan: 3.2%
- 3) South Korea: 1.5%



### Popularity

Chinese Rank<sup>1</sup>: 1  
Global Rank<sup>1</sup>: 4



### Top Tech Keywords

- 1) VR
- 2) Gravitational wave
- 3) AlphaGo

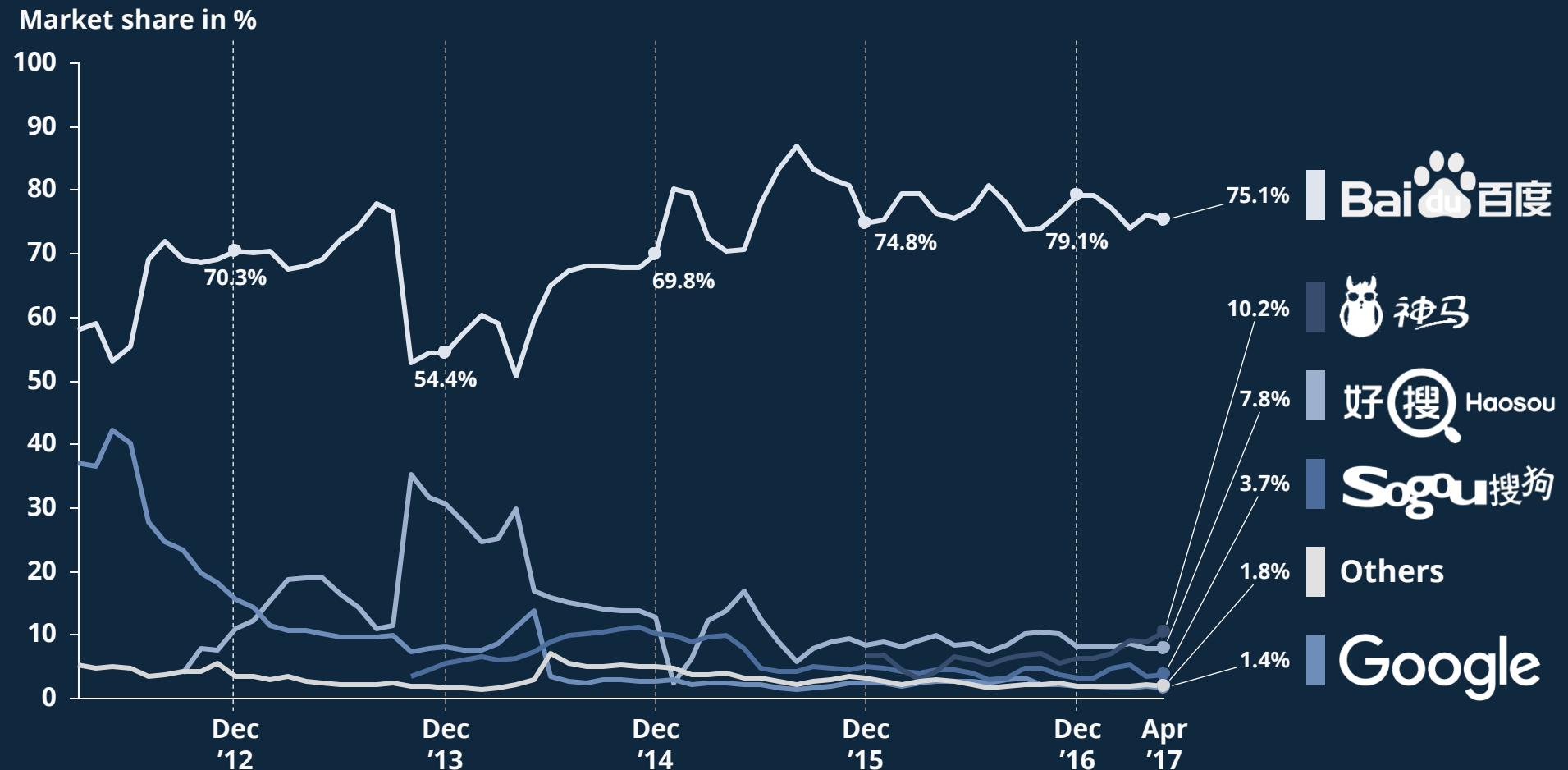


### Subsidiaries

Tokyo, Sunnyvale (CA),  
Jakarta, Bangkok,  
Cairo, Sao Paulo

In China, Baidu has strong brand awareness, with a large domestic market share of over 75%

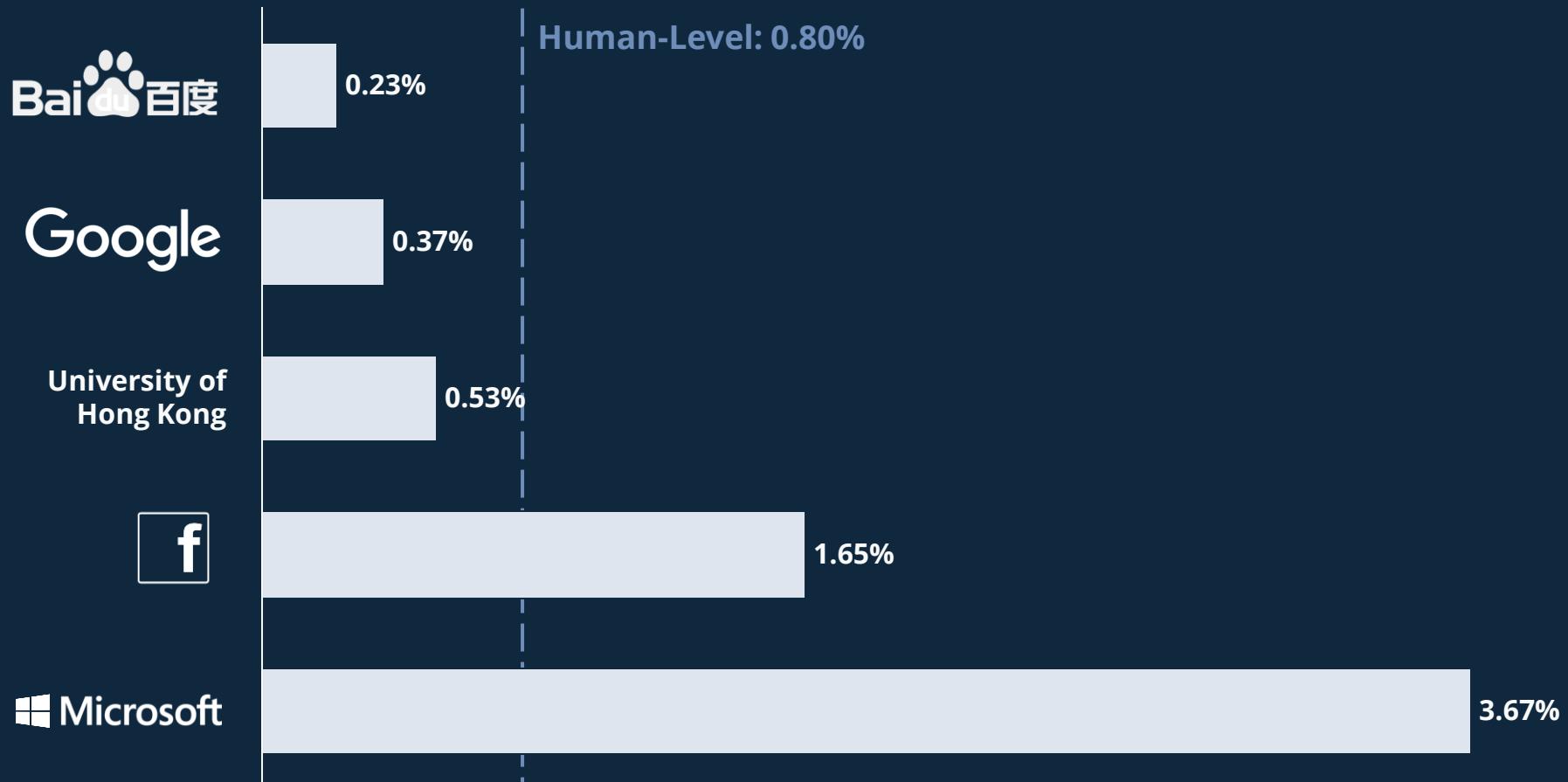
*Search engine market share in China (in percentage)*



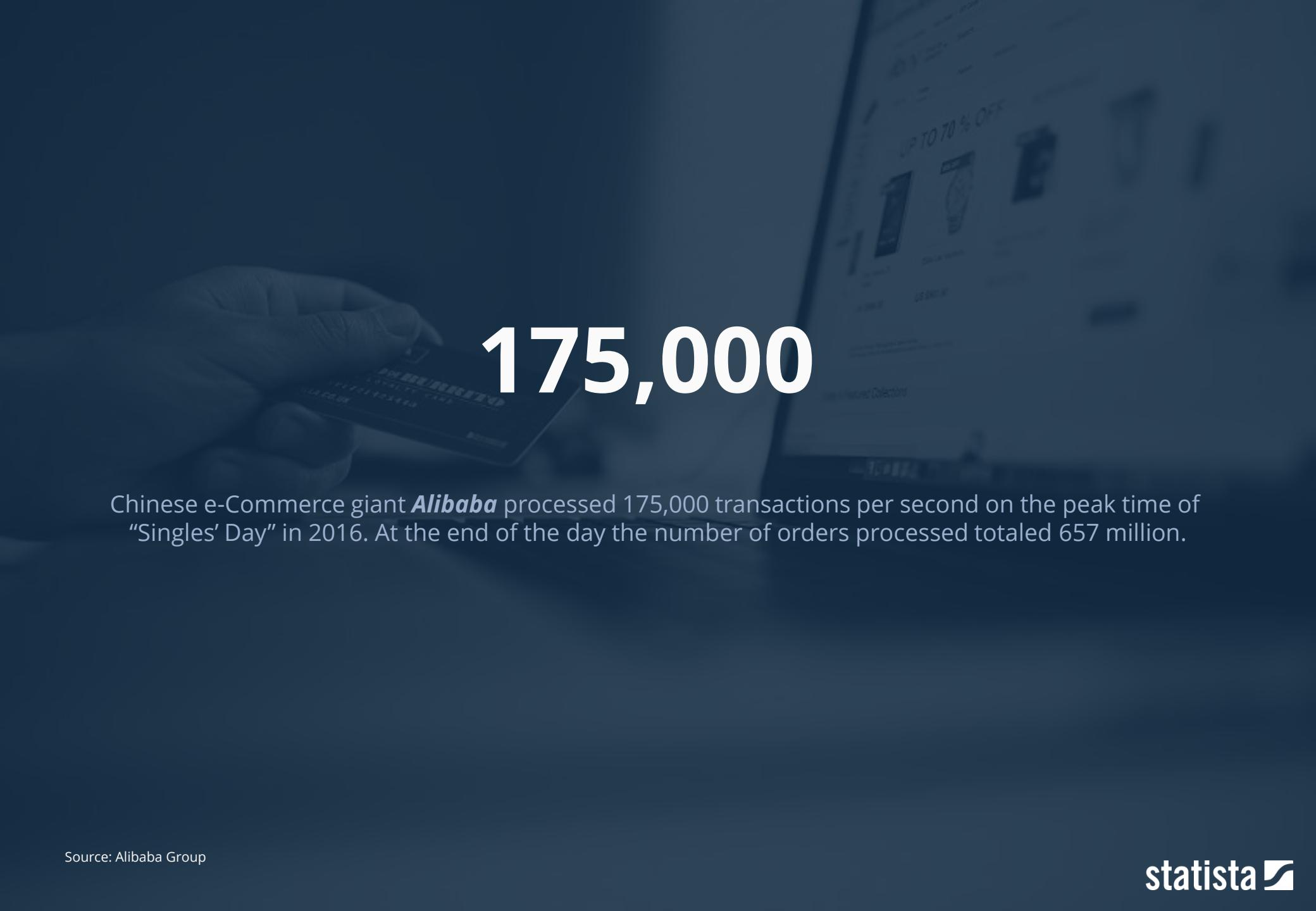
Source: StatCounter.com

# AI will further improve search engines; Baidu's face recognition software is a good example

*Face recognition software comparison as %-error in face recognition*



Source: Massachusetts Institute of Technology  
Note: Figures as of 2015, based on the Labeled Faces in the Wild (LFW) dataset

A dark, semi-transparent background image showing a person's hand holding a credit card above a laptop. The laptop screen displays a blurred e-commerce website with promotional banners for "UP TO 70 % OFF" and various products like watches and phones.

# 175,000

Chinese e-Commerce giant **Alibaba** processed 175,000 transactions per second on the peak time of "Singles' Day" in 2016. At the end of the day the number of orders processed totaled 657 million.

# The Alibaba Group has evolved to become a platform with multiple user touchpoints

## *Alibaba Group Overview*

### Digital Media



阿里体育  
Alisports.com



阿里音乐  
Alibaba Music

YOUKU 优酷



高德地图  
amap.com



YUNOS

菜鸟网络  
CAINIAO



神马  
sm.cn



一淘  
etao.com

### E-Commerce

LAZADA  
GROUP

聚划算  
—juhuasuan.com—

天猫  
TMALL.COM

淘宝网  
Taobao.com

AliExpress™

1688 采购批发  
上1688.com

阿里妈妈  
Alimama.com

Alibaba.com™

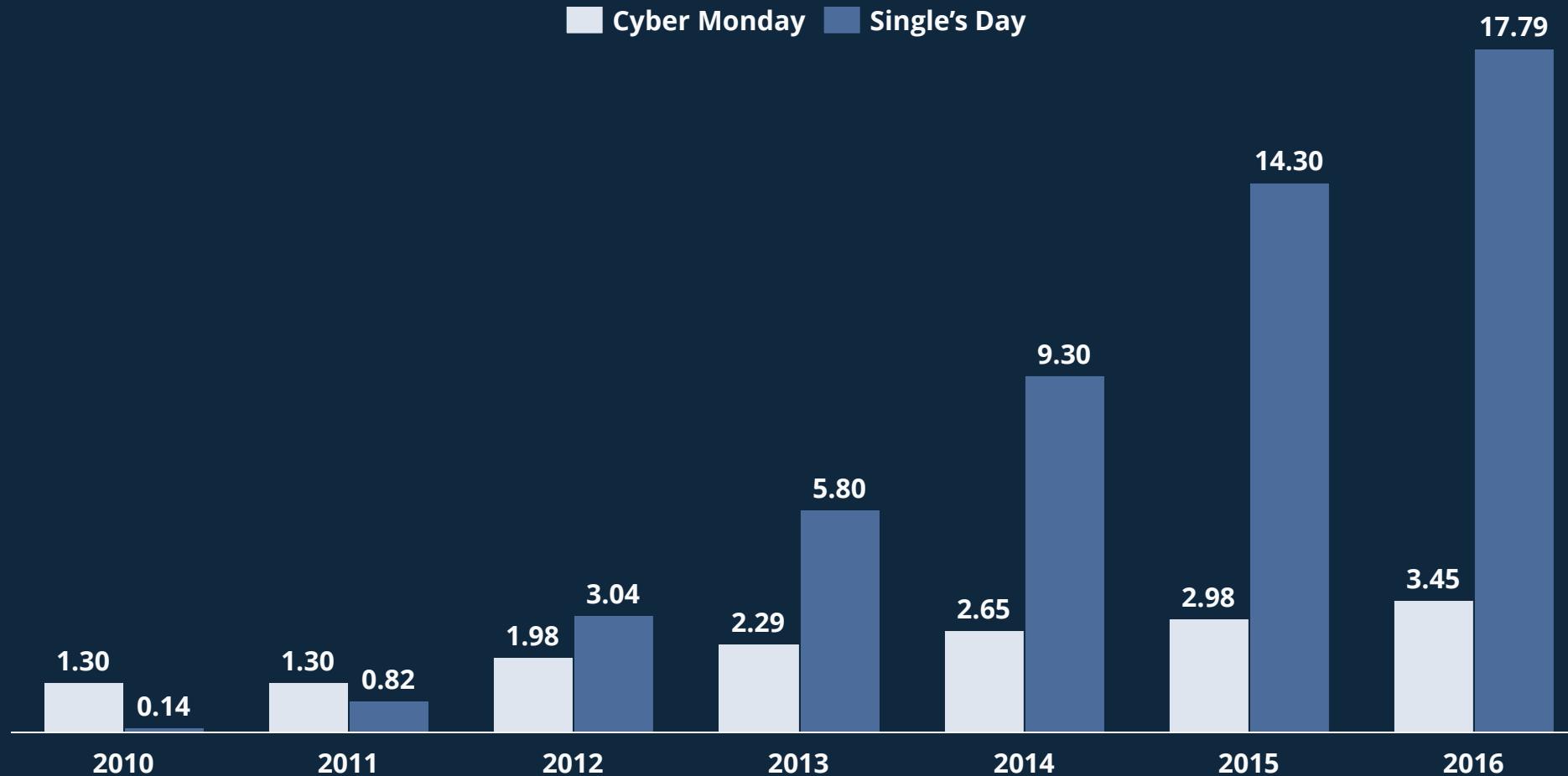
Alibaba Group  
阿里巴巴集团

Alipay™  
余额宝

### Others

# Singles' Day is the largest shopping day in the world, and Alibaba benefits most of it

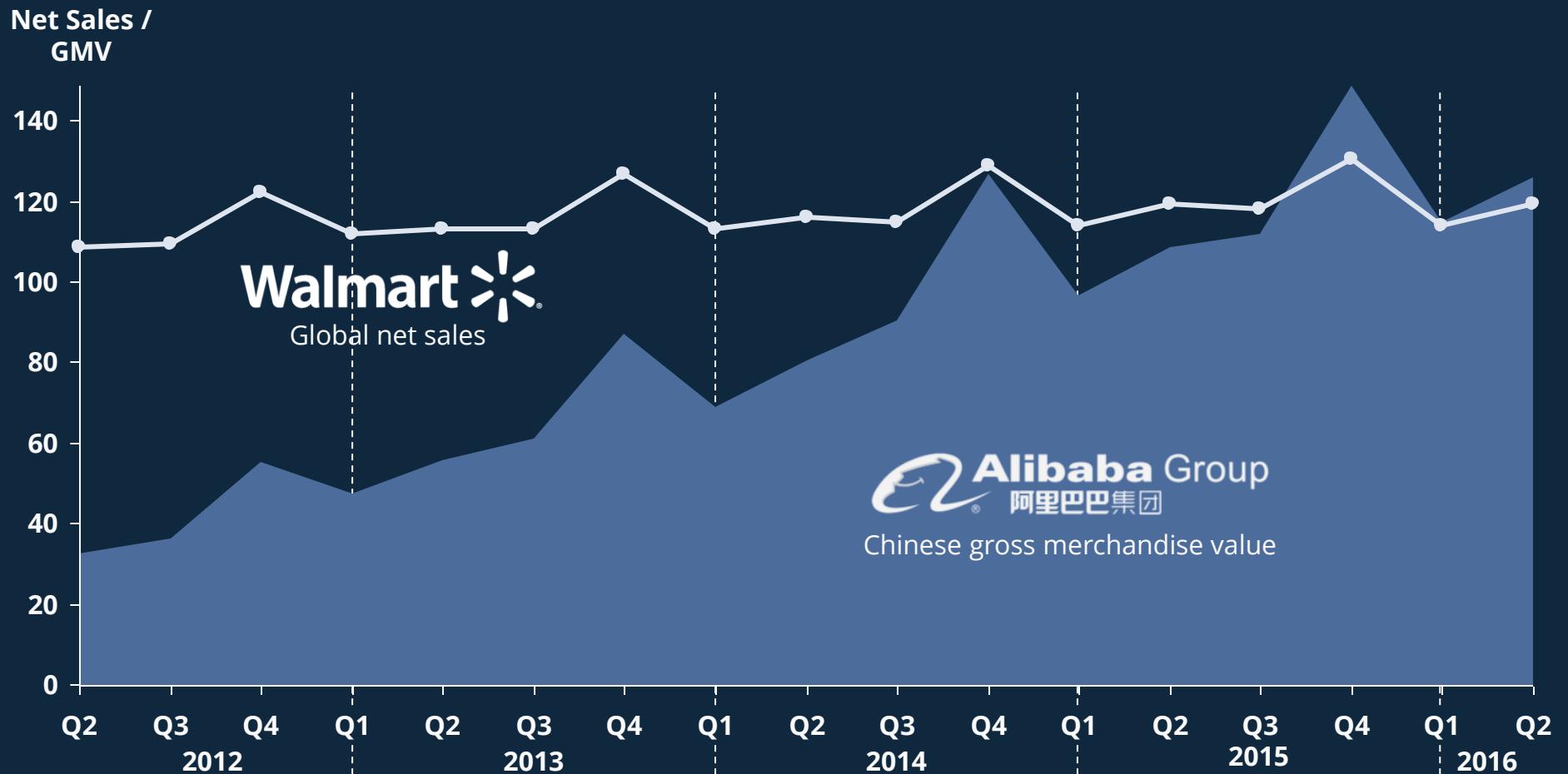
*U.S. Cyber Monday spending and Alibaba Single's Day GMV (in US\$bn)*



Sources: Fundivo, Adobe, Alibaba Group, Tech in Asia, Thomson Reuters, MarketWatch

# Alibaba's fast growth demonstrates how software is much more scalable than warehousing

*Walmart and Alibaba quarterly key-figure comparison (in US\$ billion)*



Source: Company Information

Note: all figures correspond to calendar years and quarters; financial years do not equal calendar years

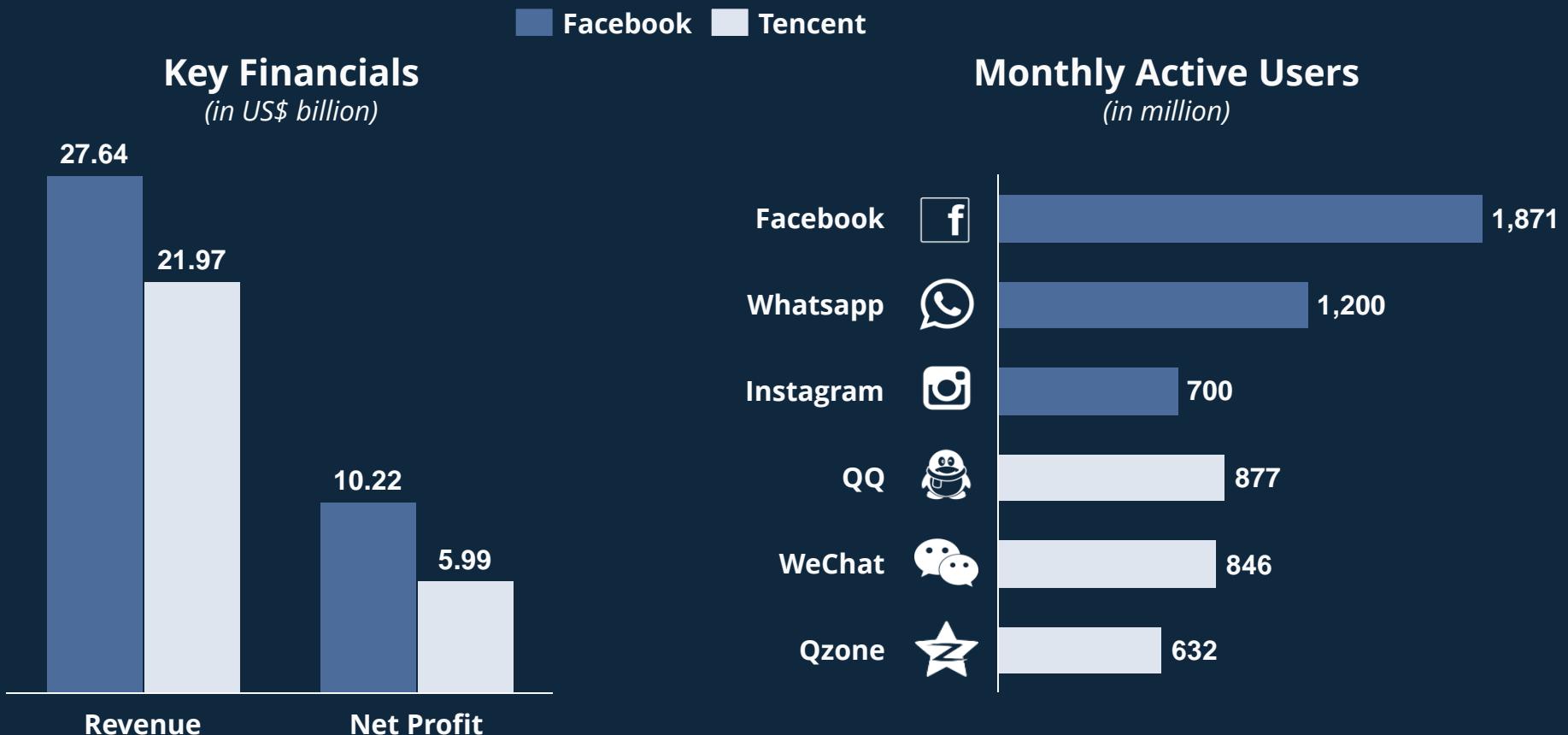


“Will **Tencent** join the likes of *Amazon, Google, Facebook* and *Twitter*? [...] They already are in that league. The rest of the world just doesn't know it.”

Aditya Rathnam,  
Co-Founder of *Kamcord*

# China's largest tech company can be compared with its U.S. Social Media counterpart

*Key financial and operating metrics of Tencent and Facebook in 2016*



Source: Company Information, We Are Social, Hootsuite

# WeChat has a diverse business model with multiple revenue sources

*Direct comparison of WeChat and WhatsApp*

	WeChat						WhatsApp												
<b>Geographical focus</b>	China 						US  Europe 												
<b>Monthly active users</b>	846 million						1,200 million												
<b>Price</b>	Free of Charge						Free of Charge												
<b>Monetization</b>	Transaction Fees & Mobile Advertising																		
➤ <b>Social &amp; Communication</b>	 Texting	 Group Chats	 Photography	 Video	 Location	 Video Chat	 Texting	 Group Chats	 Photography	 Video	 Voice Message	 Official Accounts	 Meet Strangers (Shake)	 Voice Chat	 Moment Feeds	 QR Code Reader	 Location	 Video Chat	 Voice Message
➤ <b>Leisure &amp; Commerce</b>	 Newsfeeds	 Translation	 Taxi Reservation	 Event Organization															
	 Price Checks	 e-Commerce	 Online Ticketing	 Mobile Banking															
➤ <b>Media &amp; Gaming</b>	 Music	 Mobile Gaming	 Desktop Gaming																

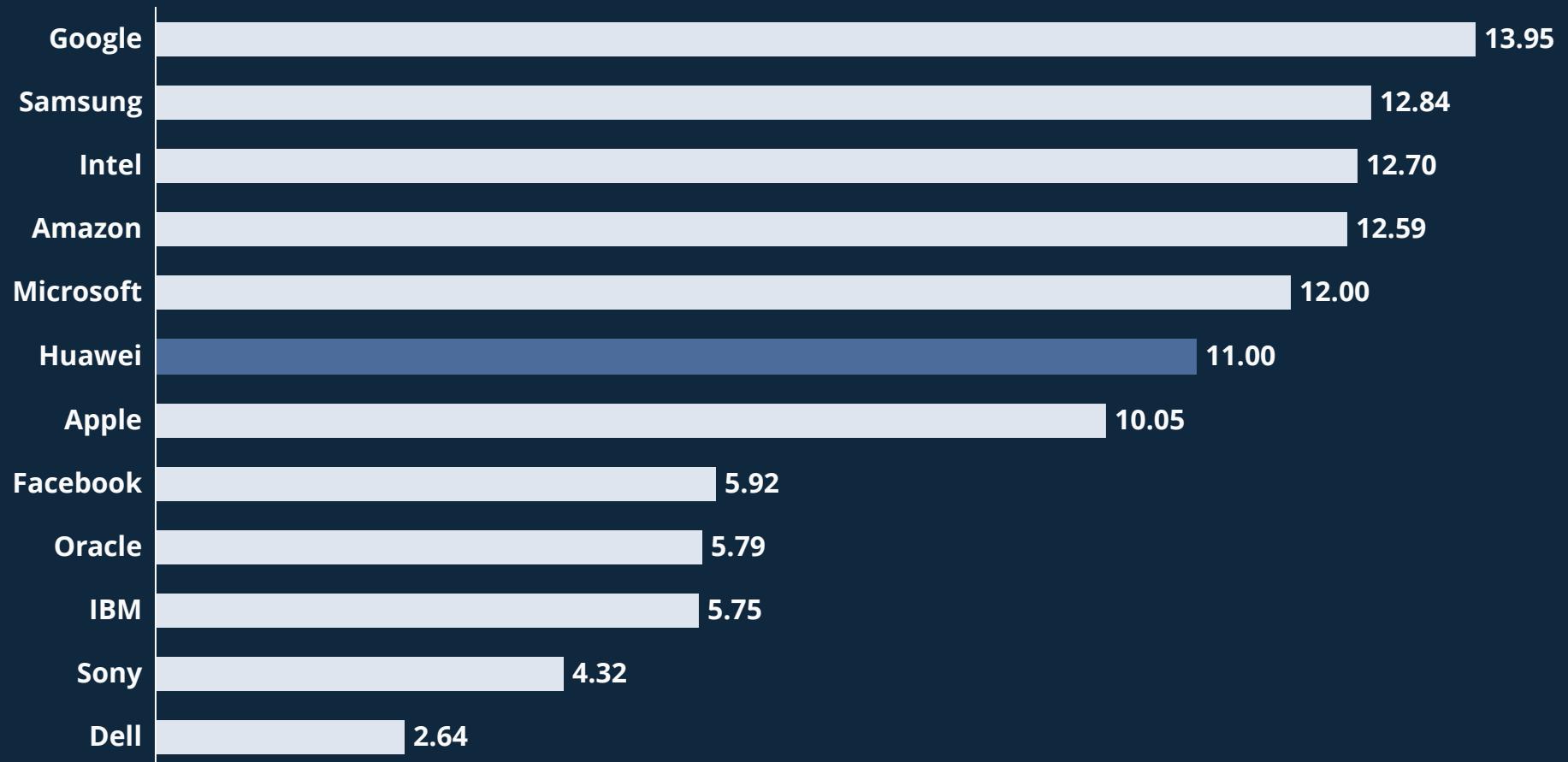
Source: Company Information, OLMA Capital Management

# 5G

**Huawei** aims at playing a central role in 5G mobile technology, the next big evolutionary step in mobile connectivity. Along with large R&D expenditures, Huawei also initiated a number of collaborative research initiatives – widely known as **Wireless X labs**.

# Huawei overtook Apple and became one of the most R&D-intensive tech companies

*R&D spending of major global tech-companies in 2016 (in US\$ billion)*



Source: Company Information

Note: Dell figures refer to FY2017 as this year ended on 01-31-2017

# Huawei and Apple show similar revenue growth

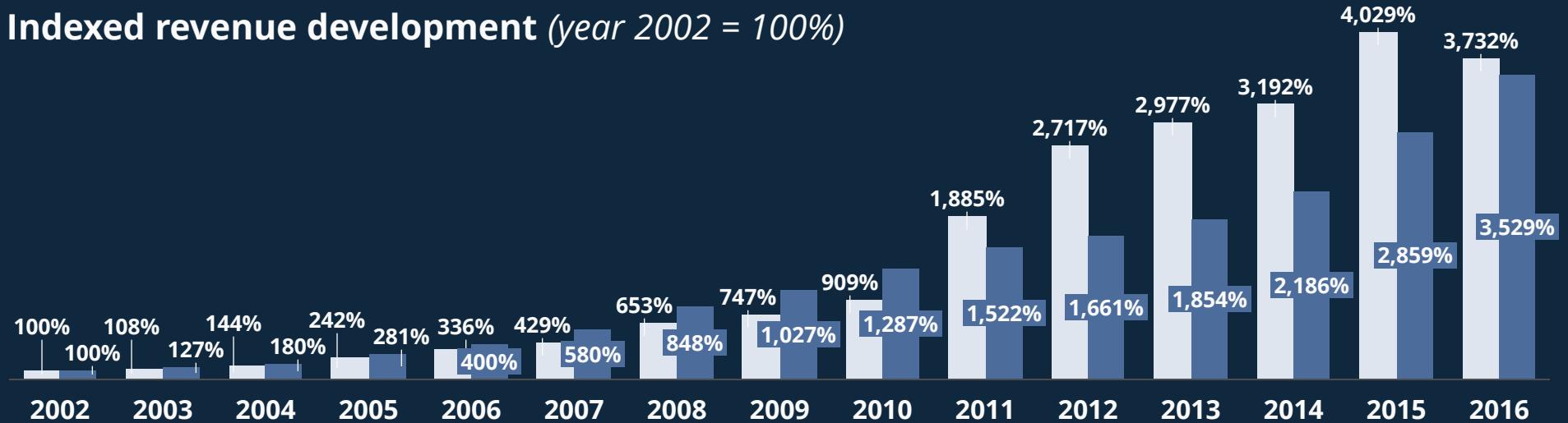
*Annual revenue comparison of Huawei and Apple from '02-'16*

**Annual revenue (in US\$ billion)**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
 Apple	5.7	6.2	8.3	13.9	19.3	24.6	37.5	42.9	52.2	108.2	156.0	170.9	183.2	231.3	214.2
 HUAWEI	2.1	2.7	3.8	6.0	8.5	12.3	18.0	21.9	27.4	32.4	35.4	39.5	46.5	60.8	75.1

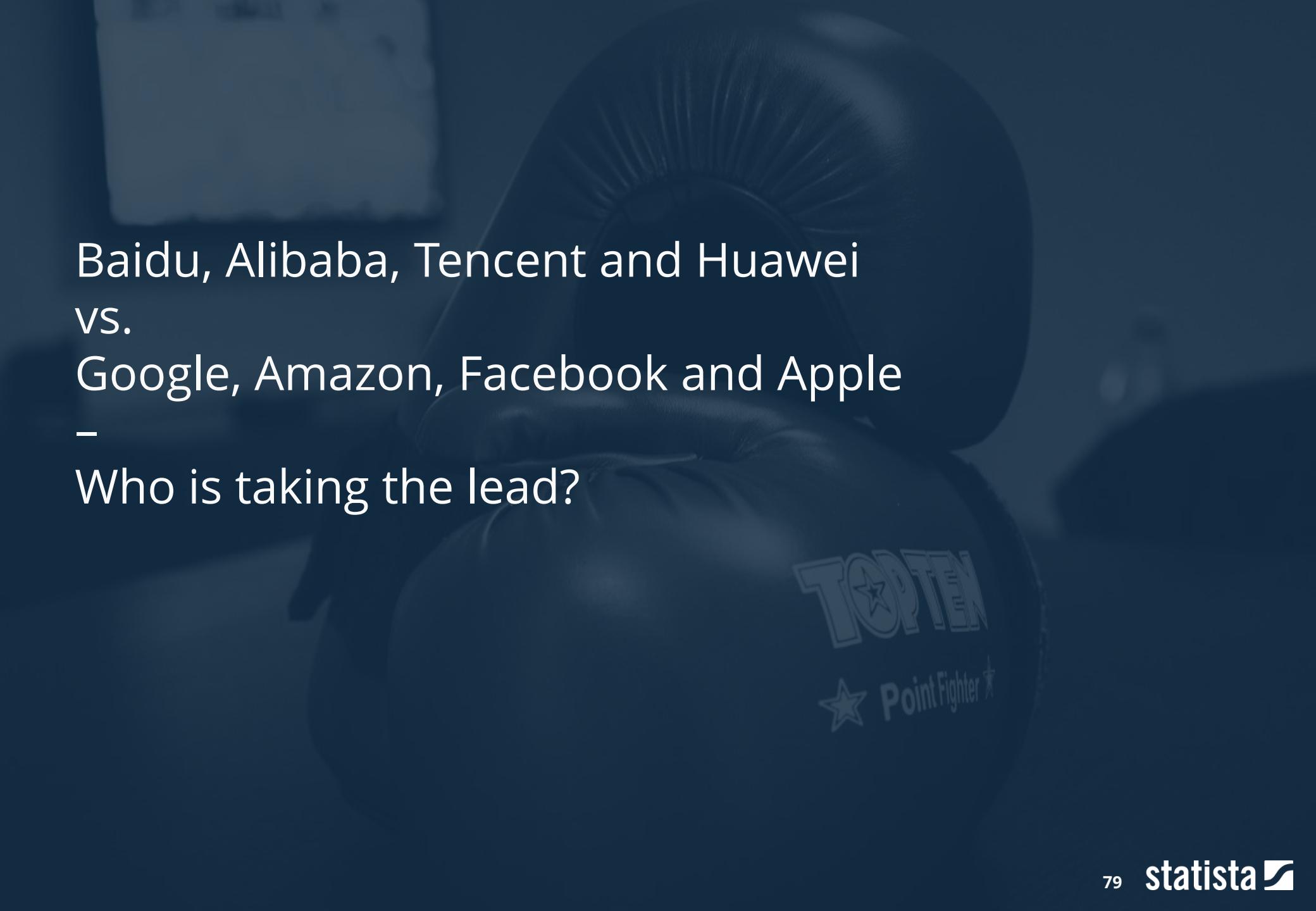


**Indexed revenue development (year 2002 = 100%)**



Source: Company Information, [Statista Digital Market Outlook](#)

Revenues converted from RMB to US\$ as per annual reports respectively press releases; years 2007-2011 are calculated with the avg. exchange rate of the specific year with exchange rates from [www.oanda.com](#)



Baidu, Alibaba, Tencent and Huawei  
vs.  
Google, Amazon, Facebook and Apple

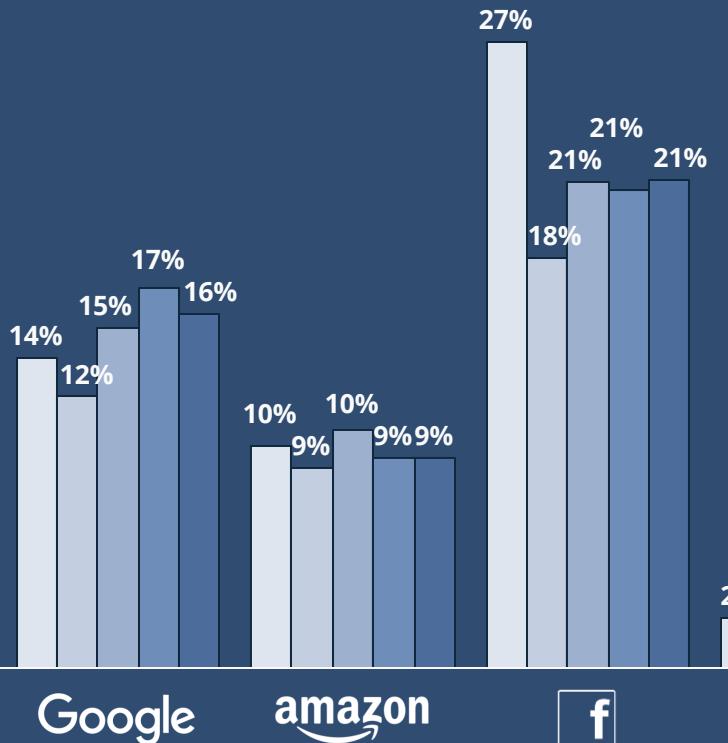
-  
Who is taking the lead?

# BATHu may catch up in the digital economy, but the big U.S. players remain the top innovators

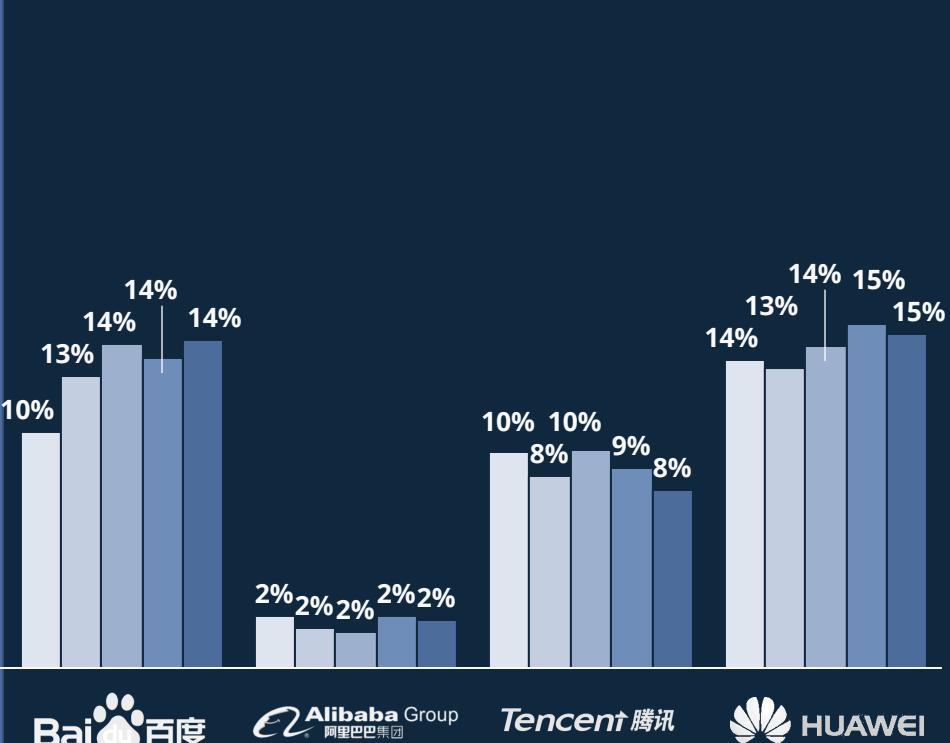
*Research & Development expenditures (in percent of total revenues)*

■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ 2016

Total Research & Development expenditures: **US\$141.4bn**



Total Research & Development expenditures: **US\$48.6bn**



Source: Company Information; YCharts.com

Note: Revenues and R&D expenditures converted from RMB to US\$ from annual reports respectively press releases

# Comparatively, U.S. tech-giants remain ahead of their Chinese competitors

*Key-figure comparison: GAFA vs. BATHu*

## Google vs. Baidu 百度

Revenues	US\$bn	★ 89.73	10.20
CAGR <sup>1</sup> '12-'16	%	15.77	29.92
Profit margin	%	★ 21.71	16.44
R&D expend.	US\$bn	★ 13.95	1.47
Domestic market share	%	64.0	★ 75.1

## Amazon vs. Alibaba Group 阿里巴巴集团

Revenues	US\$bn	★ 135.99	15.69
CAGR <sup>1</sup> '12-'16	%	22.15	★ 48.63
Profit margin	%	1.74	★ 70.5
R&D expend.	US\$bn	★ 12.59	0.34
GMV	US\$bn	251.0 <sup>2</sup>	★ 484.6



## vs. Tencent 腾讯

Revenues	US\$bn	★ 27.64	21.97
CAGR <sup>1</sup> '12-'16	%	★ 52.66	32.88
Profit margin	%	★ 36.97	27.3
R&D expend.	US\$bn	★ 5.92	1.71
MAU <sup>3</sup>	m	★ 1,871	877



## vs. Huawei

Revenues	US\$bn	★ 214.23	75.10
CAGR <sup>1</sup> '12-'16	%	8.26	★ 20.73
Profit margin	%	★ 21.33	7.1
R&D expend.	US\$bn	10.05	★ 11.00
Smartphone shipments	m	★ 215.4	139.3

Source: Company Information, IDC, WeAreSocial, comScore

Note: Monetary figures converted from RMB to US\$ sourced from annual reports respectively press releases

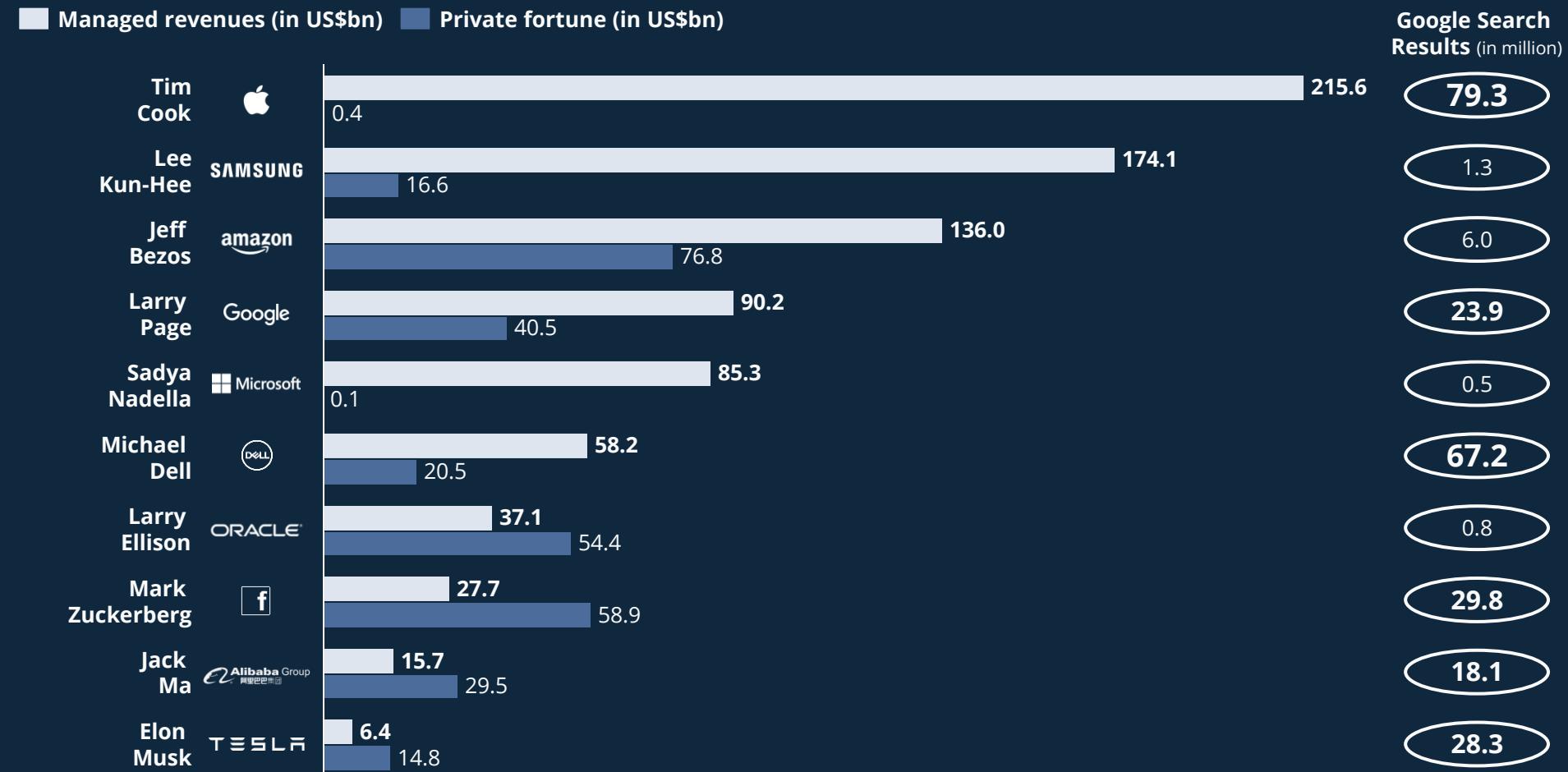
1: CAGR = Compound annual growth rate

2: Statista estimates

3: MAU = Monthly active users; only take into account the biggest single Social Media Platforms Facebook and QQ

# The Top 10 digital CEOs manage revenues of \$846bn and own a combined fortune of \$312bn

## *Top 10 business people in the digital economy*



Source: Company Information, forbes.com, celebritynetworth.com, therichest.com  
 Note: Jack Ma is founder of the Alibaba Group, in 05-2015 Daniel Zhang became CEO  
 Managed revenues referring to FY2016; Private fortune as of 04-10-2017

# Venture Capital

A dark, slightly blurred background image showing a stack of US dollar bills fanned out. The bills are mostly \$100 denominations, with some \$50 bills visible at the top. They are resting on a textured, dark surface.

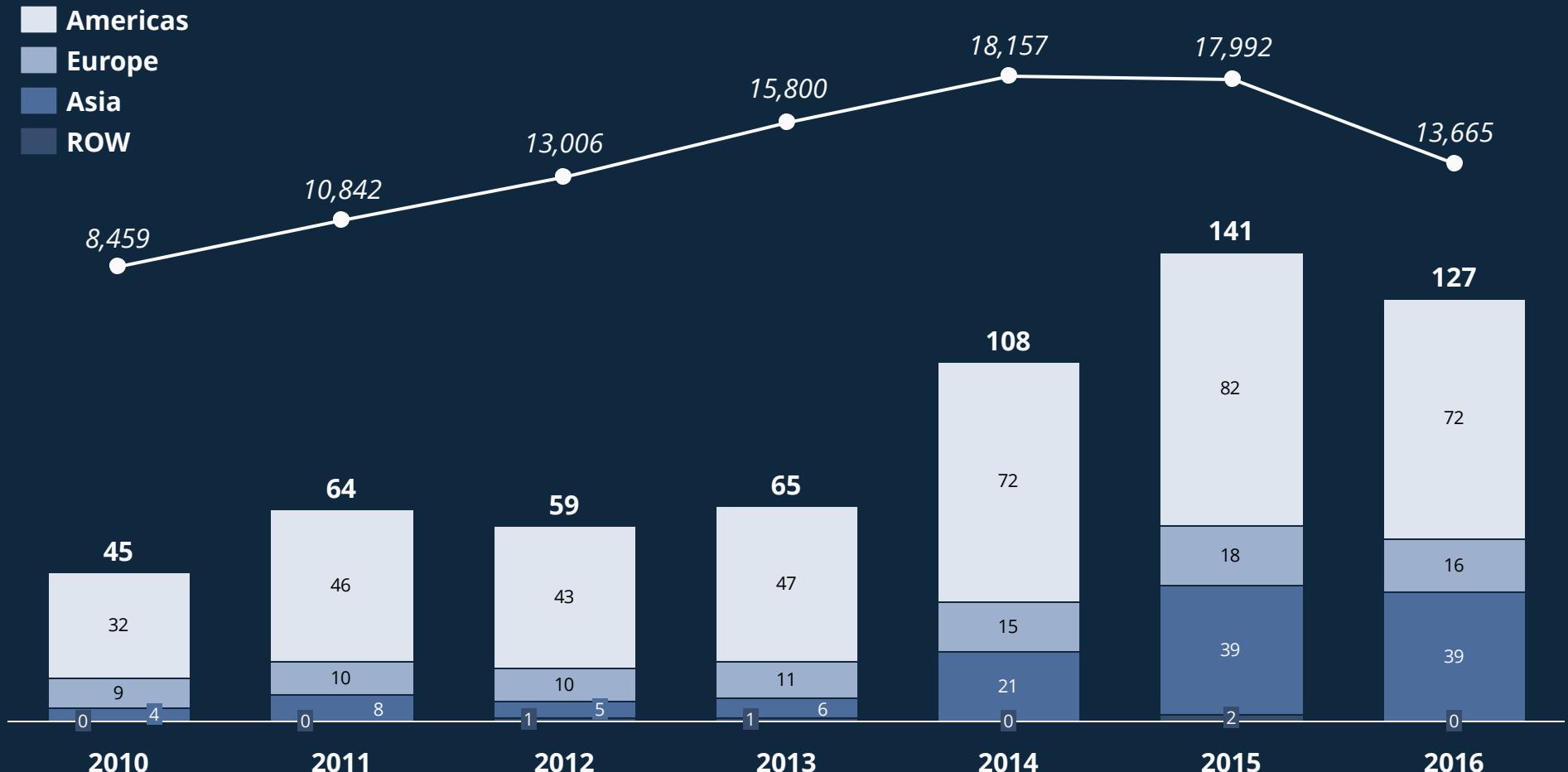
# 7,300,000,000

US\$

In 2016 ***Didi Chuxing***, the Chinese ride sharing company and major competitor of ***Uber***, collected fresh capital funding totaling US\$7.3 billion in order to strengthen its position in the Southeast Asian market

# More deals and greater capital invested, bar 2016, complement growing average deal size

*Global venture financing from 2010-2016 (in US\$ billion)*

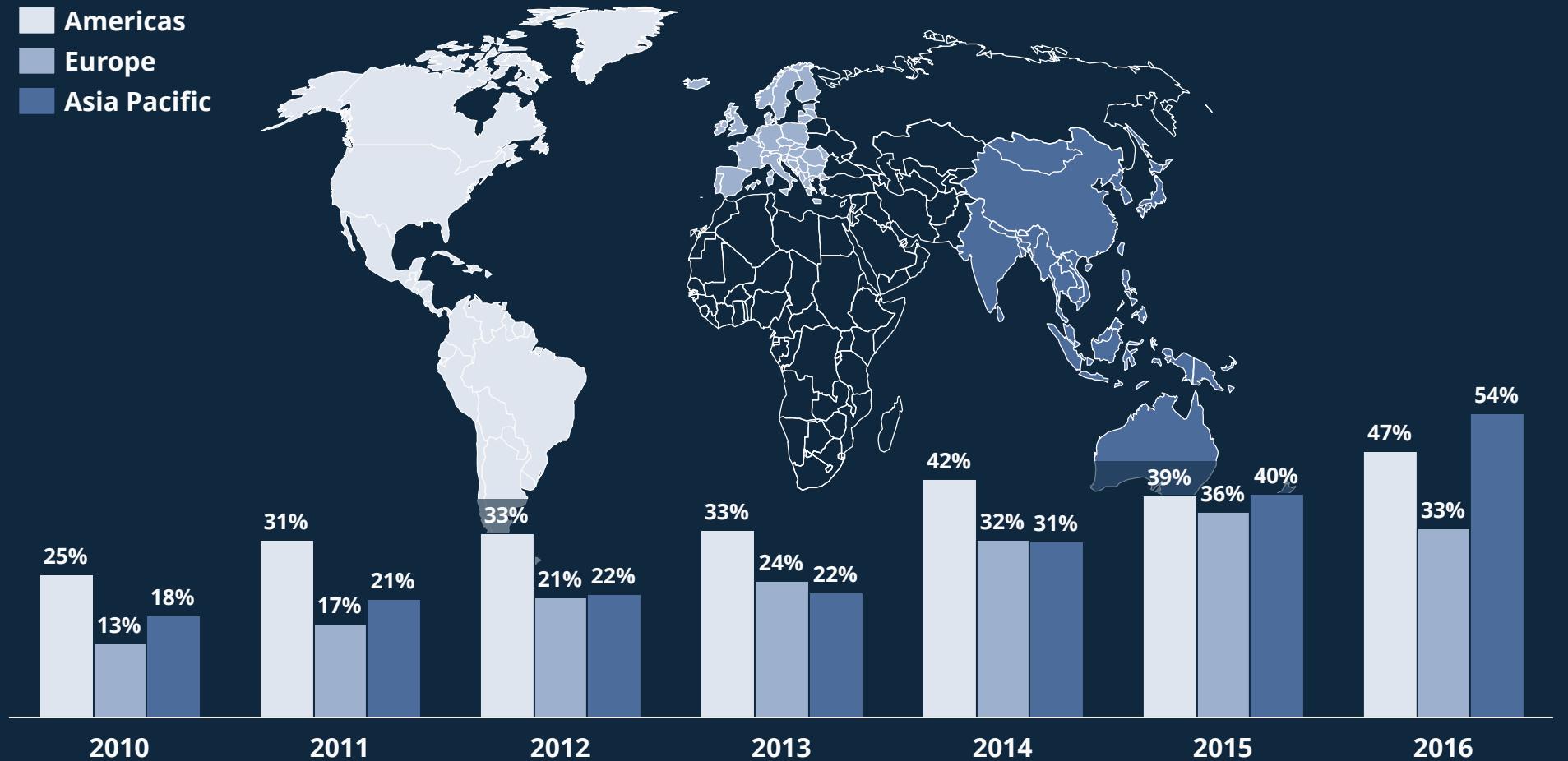


Source: KPMG Enterprise, PitchBook

■ Capital invested ● Deal count

# "Software is eating the world" – at least in the case of VC financing

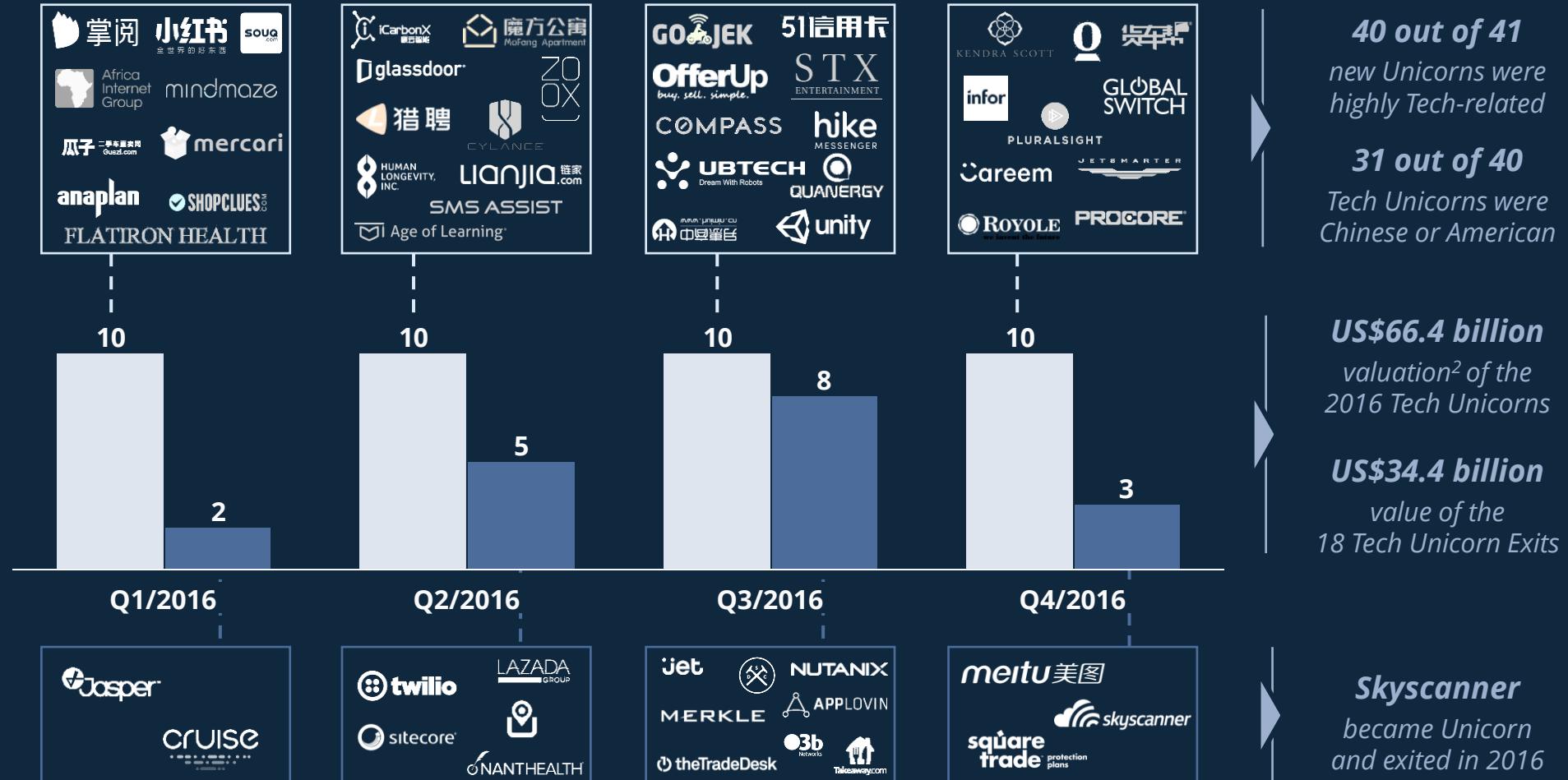
*Software sector share in venture financing in a regional comparison*



Source: KPMG Enterprise, PitchBook

# The stereotype Unicorn<sup>1</sup> in 2016: digital and most likely to be Chinese or American

## New VC-backed Tech Unicorns and Exits in 2016



Source: CB Insights

1: Unicorn = Startup company with a company valuation of more than US\$ 1.0 billion

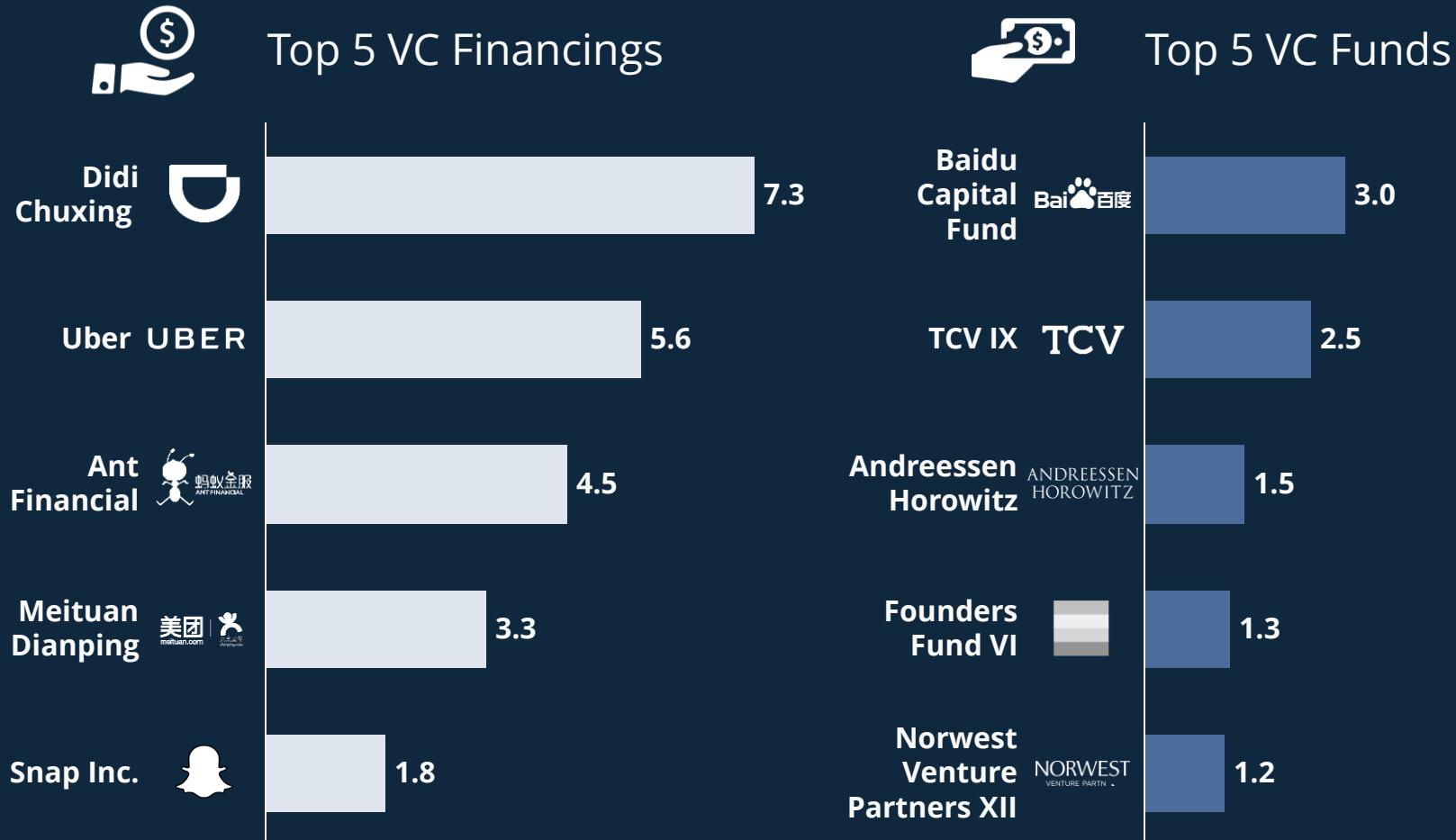
2: Company valuation as per 03-15-2017

New Unicorns

Exits > US\$1 billion

# U.S. and Chinese players take the top spots in terms of global VC financing and funding

## *Top 5 VC Financings and Funds in 2016 (in US\$ billion)*



Source: PitchBook

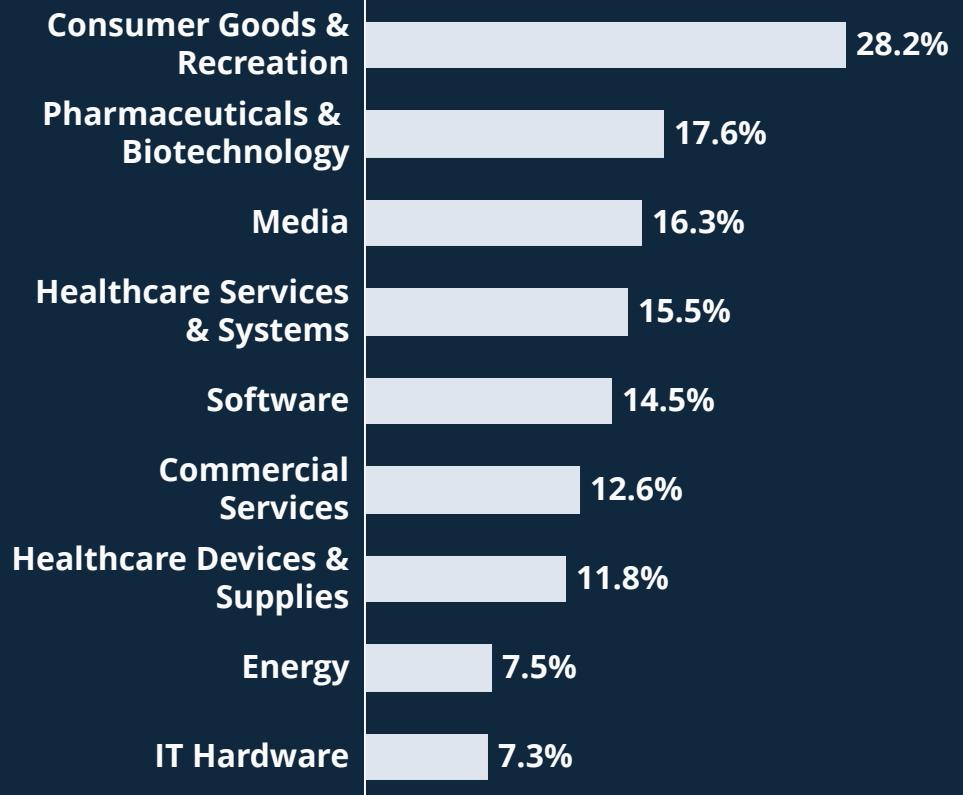
# VC deals are primarily closed with male founders, particularly in the tech landscape

*Global VC deals for companies with at least one female founder*

Percentage of deals

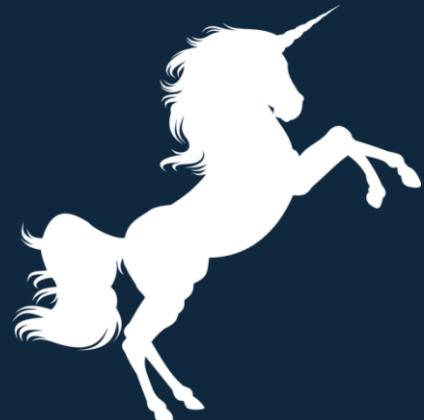
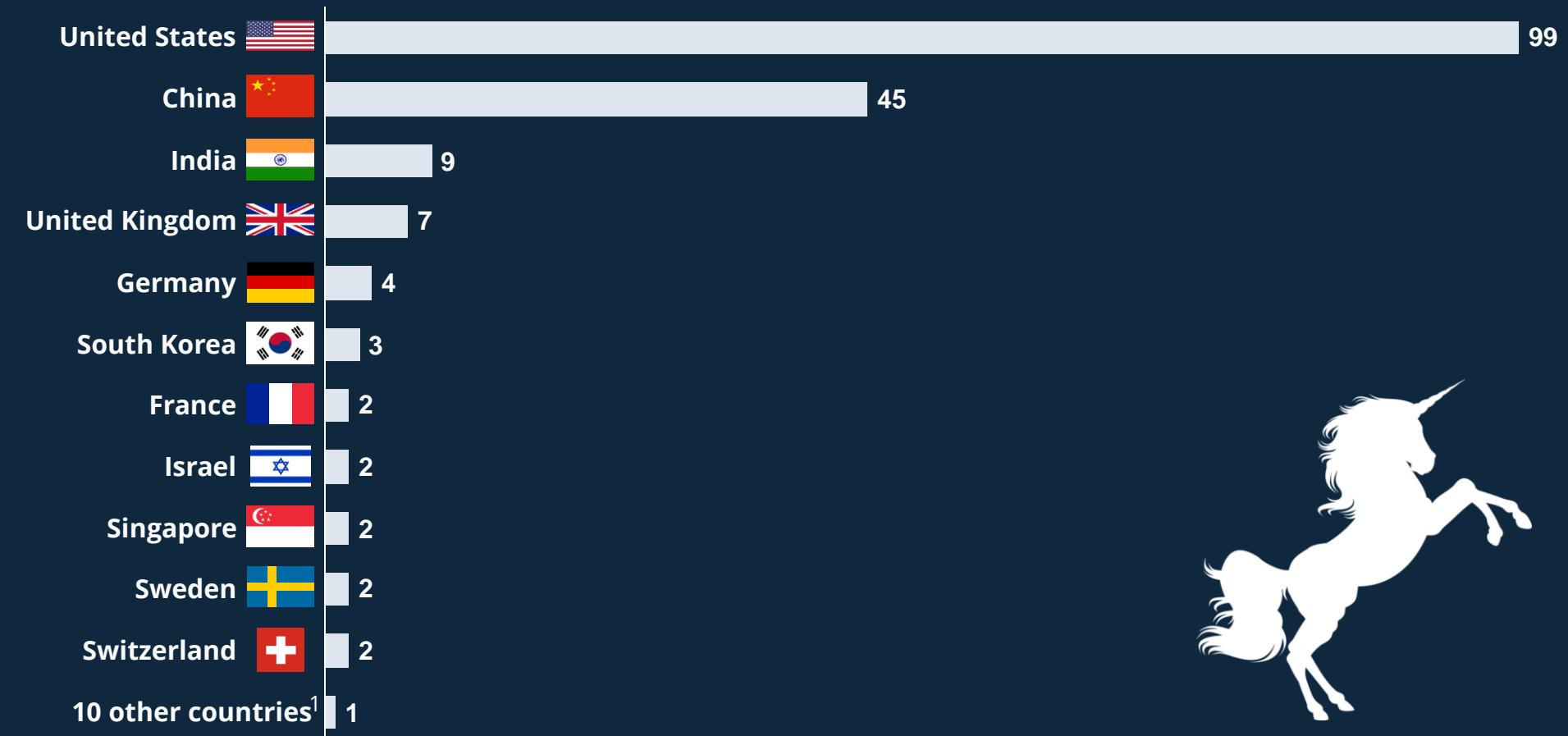


Top industries



# The U.S. and China are home to the greatest number of Unicorns, with Europe lagging behind

*Private companies valued at one US\$ billion or more as of 03-27-2017*



source: CB Insights

Unicorn = Startup company with a company valuation of more than US\$ 1.0 billion

1: countries with one 'unicorn': Argentina, Colombia, Czech Republic, Indonesia, Japan, Luxembourg, Netherlands, Nigeria, South Africa, United Arab Emirates

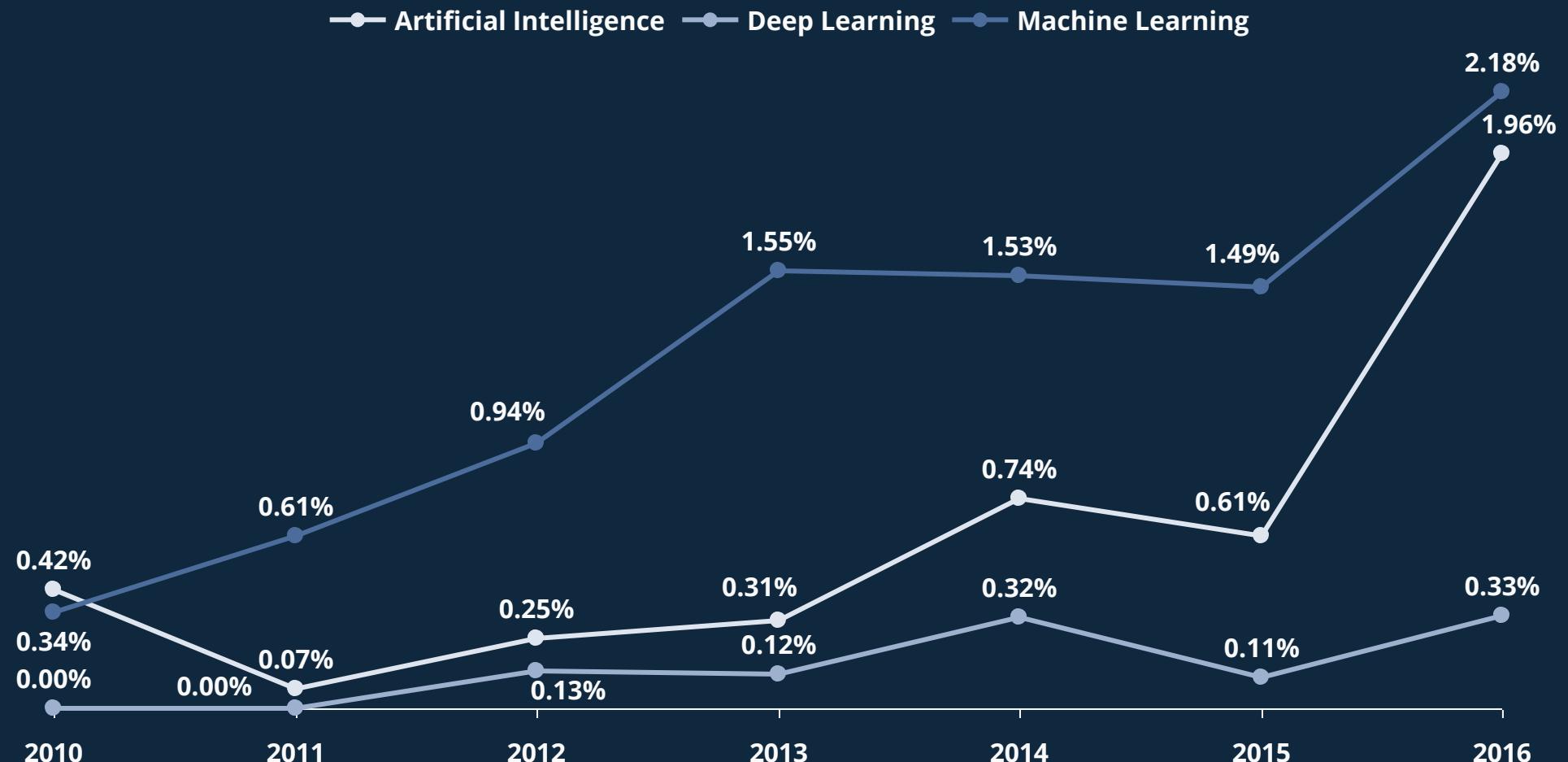
# AI, AR & VR

# 99.77%

**Baidu** has developed a facial recognition software that recognizes human faces with a 99.77% accuracy. This surpasses average human-level facial recognition and many Silicon Valley competitors.

# There is a lot of activity in the Artificial Intelligence and Data Mining startup scene

*VC-backed companies with certain words in their company description*



Source: CB Insights

# VC-backed companies with the terms Machine Learning, VR & AI drastically increased since '10

*Change of VC-backed companies with given terms in their description*

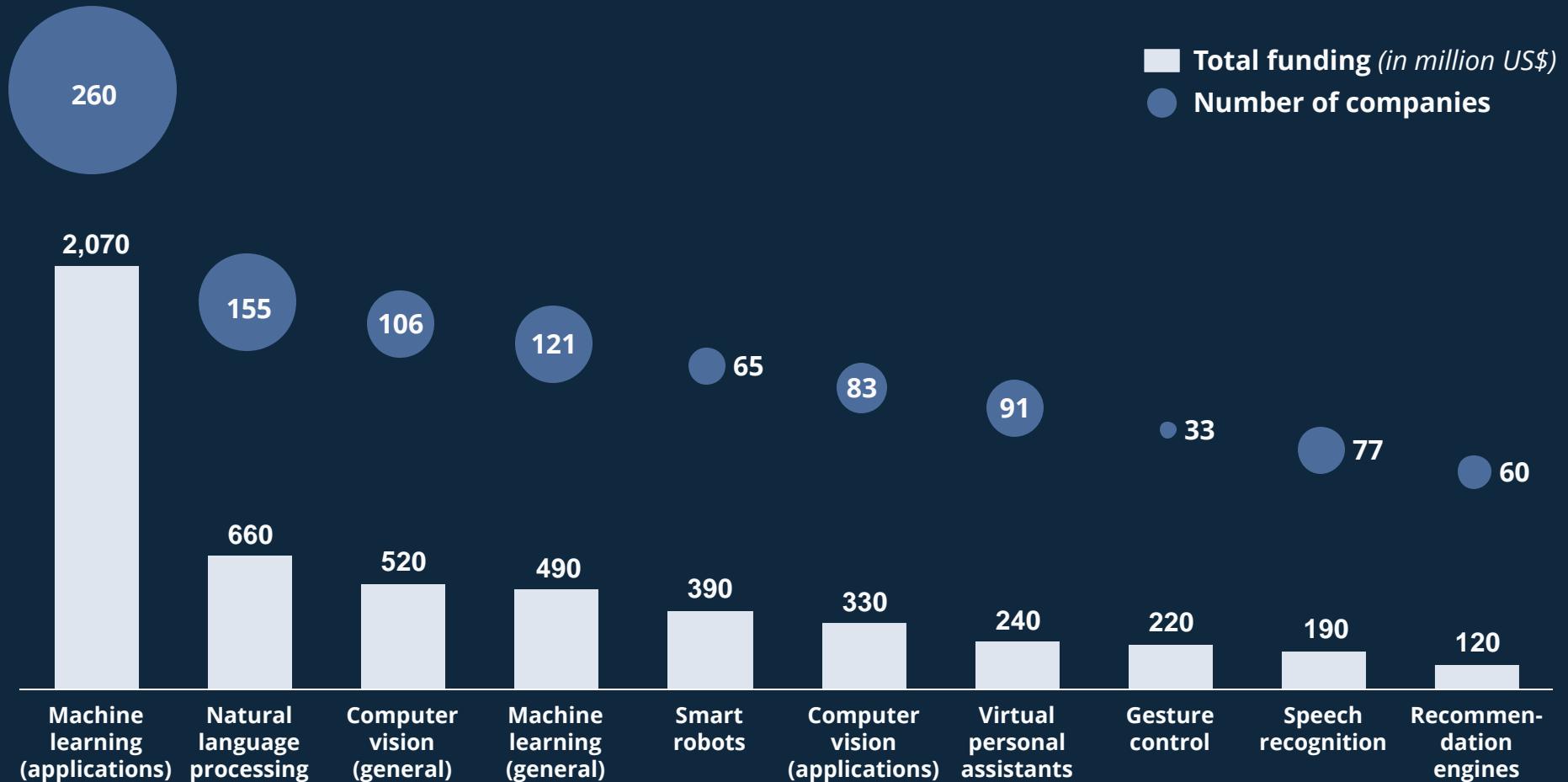
Rank	Word	% in 2010	% in 2016	Change
<b>1</b>	<b>Virtual Reality</b>	<b>0.0%</b>	<b>1.0%</b>	-
<b>2</b>	<b>Machine Learning</b>	<b>0.3%</b>	<b>2.0%</b>	<b>507%</b>
<b>3</b>	Natural Language	0.2%	1.0%	507%
<b>4</b>	Ingredients	0.3%	1.2%	385%
<b>5</b>	Cyber	0.3%	1.5%	355%
<b>6</b>	<b>Artificial Intelligence</b>	<b>0.4%</b>	<b>1.8%</b>	<b>337%</b>
<b>7</b>	<b>Reality</b>	<b>0.3%</b>	<b>1.4%</b>	<b>325%</b>
<b>8</b>	Automates	0.3%	1.0%	304%
<b>9</b>	Sensors	0.3%	1.3%	294%
<b>10</b>	Feedback	0.4%	1.3%	215%
<b>11</b>	Seconds	0.3%	1.0%	203%
<b>12</b>	Minutes	0.4%	1.2%	191%
<b>13</b>	Oncology	0.4%	1.2%	191%
<b>14</b>	Therapy	0.7%	1.9%	188%
<b>15</b>	Modern	0.5%	1.4%	183%
<b>16</b>	Tumor	0.4%	1.1%	167%
<b>17</b>	Stealth	1.3%	3.3%	143%
<b>18</b>	Workflow	0.7%	1.6%	143%
<b>19</b>	Insurance	0.8%	1.9%	130%
<b>20</b>	Software Platform	0.5%	1.1%	122%

Rank	Word	% in 2010	% in 2016	Change
<b>21</b>	Human	1.7%	3.5%	106%
<b>22</b>	Connected	1.0%	2.0%	102%
<b>23</b>	Genetic	0.8%	1.5%	102%
<b>24</b>	Videos	0.6%	1.1%	91%
<b>25</b>	Risk	2.4%	4.2%	78%
<b>26</b>	Intelligent	1.7%	3.0%	76%
<b>27</b>	Algorithms	0.8%	1.3%	75%
<b>28</b>	Treatments	0.8%	1.3%	75%
<b>29</b>	Audio	0.6%	1.0%	73%
<b>30</b>	Culture	0.6%	1.0%	73%
<b>31</b>	Women	0.6%	1.0%	73%
<b>32</b>	Body	0.8%	1.4%	70%
<b>33</b>	Healthy	0.8%	1.4%	70%
<b>34</b>	Language	0.8%	1.4%	70%
<b>35</b>	Stream	2.4%	4.1%	67%
<b>36</b>	Threat	0.4%	1.5%	65%
<b>37</b>	Hand	2.1%	3.5%	65%
<b>38</b>	Labs	1.7%	2.8%	64%
<b>39</b>	Bank	0.8%	1.3%	58%
<b>40</b>	Measure	1.4%	2.2%	57%

Source: CB Insights

# Startups in the machine learning / AI segment have benefited from the largest VC funding

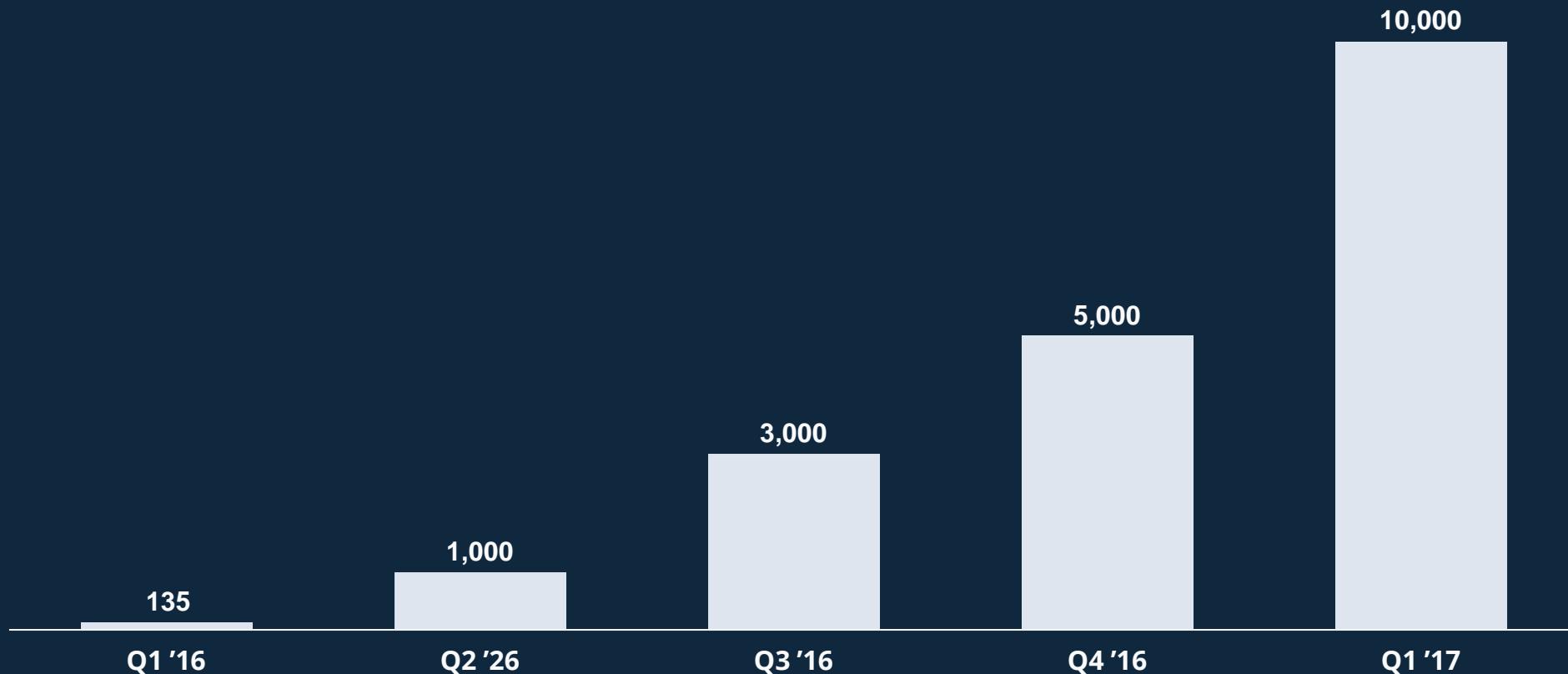
*Funding and number<sup>1</sup> of startups working in the AI market, by category*



**Sources:** Statista estimates, Medium  
1: as of March 2016

# AI will also enable human voices to become a new powerful communication layer

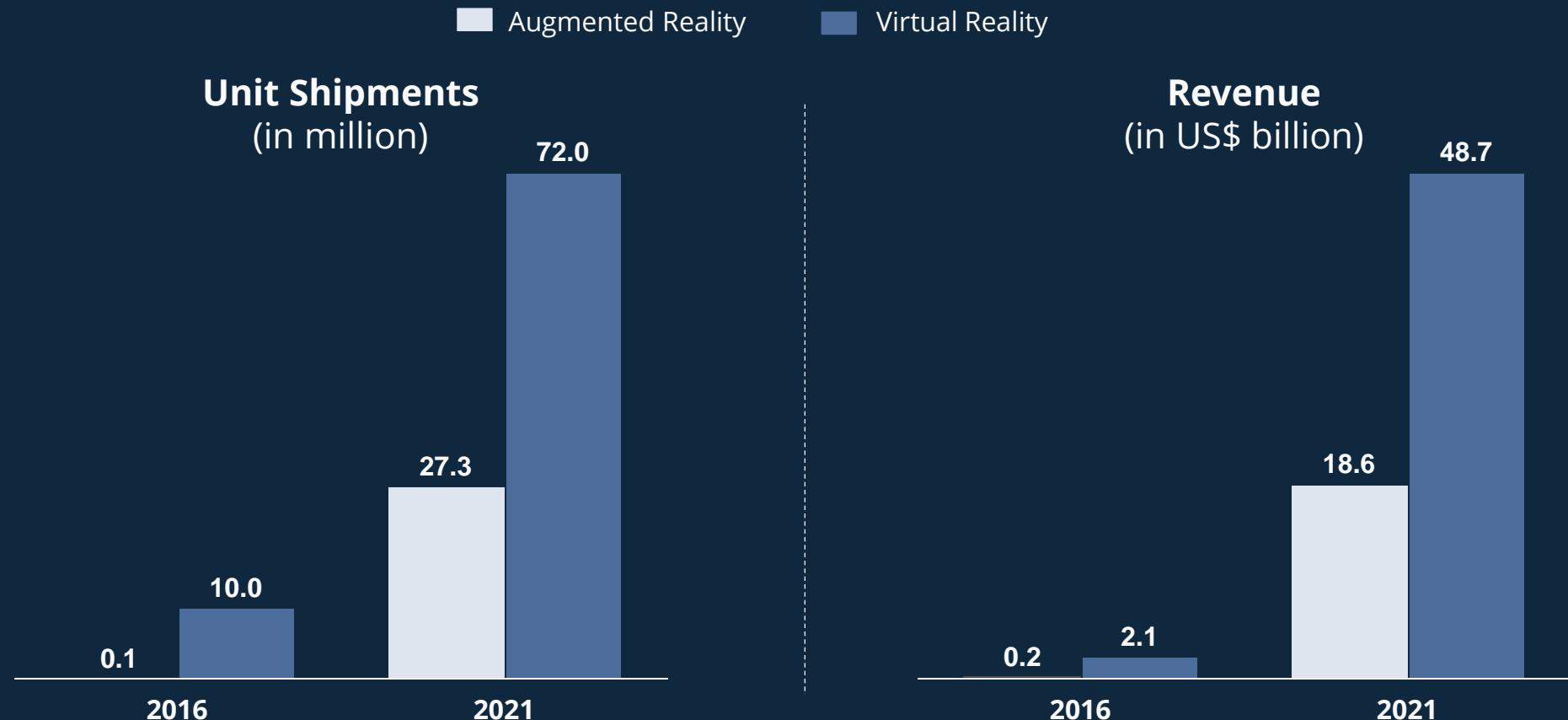
*Number of third-party skills available for Amazon's virtual assistant*



Sources: Amazon, Press reports

# Augmented & Virtual Reality may be the next big tech opportunity

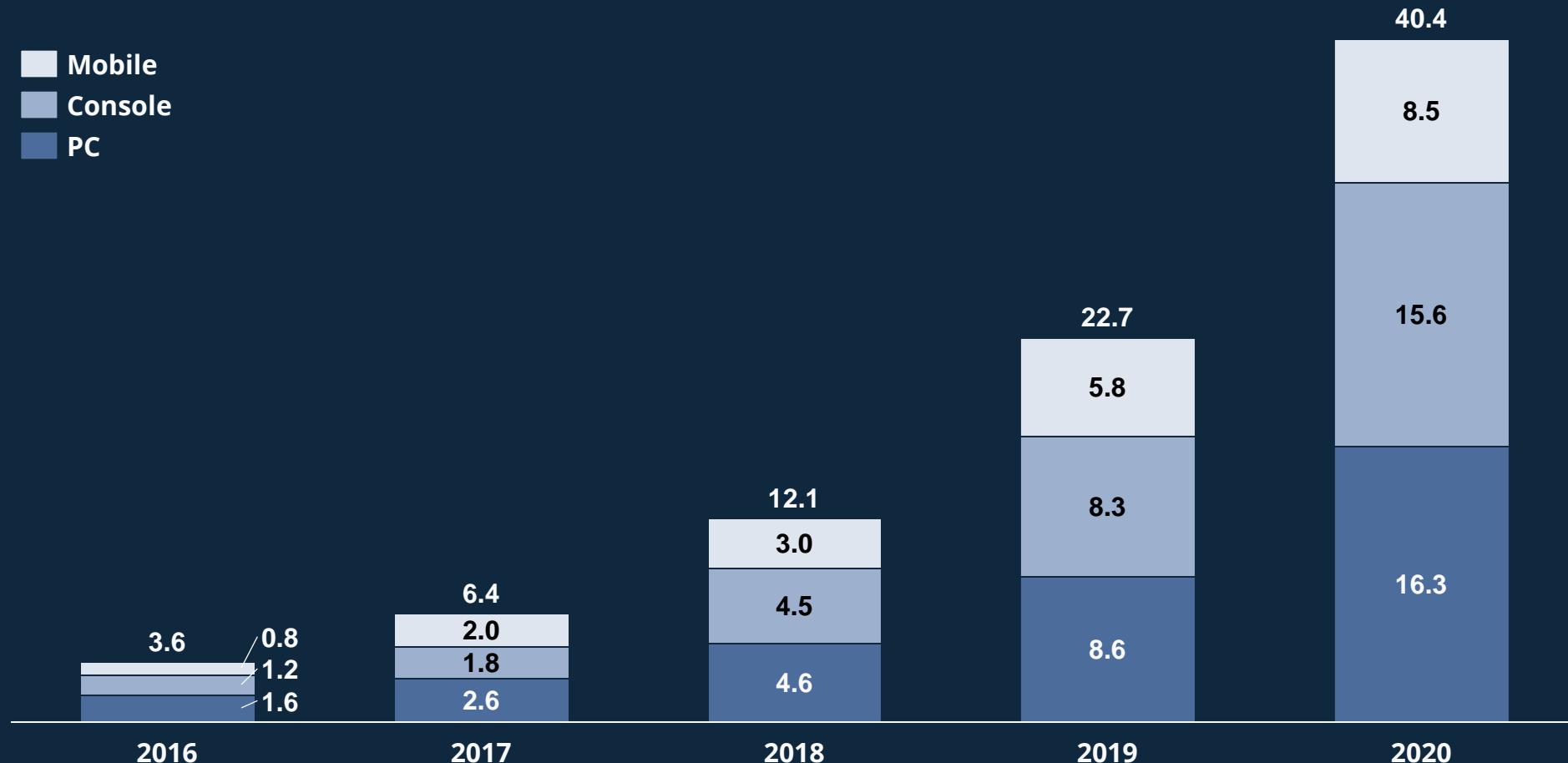
*Estimated global virtual & augmented reality headset development*



source: IDC

Global VR revenues are expected to increase to almost US\$40 billion by 2020

*Forecasted VR hard- and software revenues by platform in US\$ billion*



**source:** Superdata via VRFocus

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## *Statista's Digital Market Outlook*

- |                          |                                |
|--------------------------|--------------------------------|
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| › eServices..... 117     | › Digital Advertising..... 160 |
| › eTravel ..... 129      | › Smart Home..... 171          |
| › Digital Media..... 138 | › Connected Car..... 181       |

# The Digital Market Outlook (DMO) provides KPIs and insights for eight digital markets

## *Statista Digital Market Outlook coverage*



### **e-Commerce**

Fashion, Electronics & Media, Food & Personal Care, Furniture & Appliances, Toys, Hobby & DIY



### **FinTech**

Digital Payments, Business Finance, Personal Finance



### **eServices**

Event Tickets, Fitness, Dating Services, Food Delivery



### **Digital Advertising**

Banner Ads, Video Ads, Search Ads, Social Media Ads, Classifieds



### **eTravel**

Online Travel Booking, Mobility Services



### **Smart Home**

Home Automation, Security, Home Entertainment, Ambient Assisted Living, Energy Mgmt.



### **Digital Media**

Video-on-Demand, Digital Music, Video Games, ePublishing



### **Connected Car**

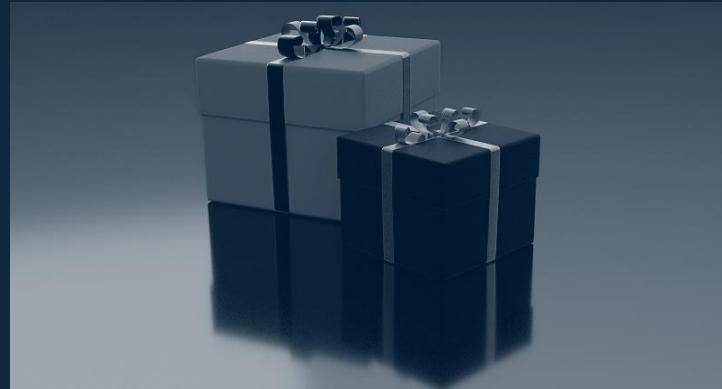
Connected Hardware, Vehicle Services, Infotainment Services

# The DMO markets and forecasts cover a broad range of products and services

## *DMO scoping*



**B2C<sup>1</sup>** markets and revenues for...



**new<sup>2</sup>** products and services...



in over **50 regions and countries...**



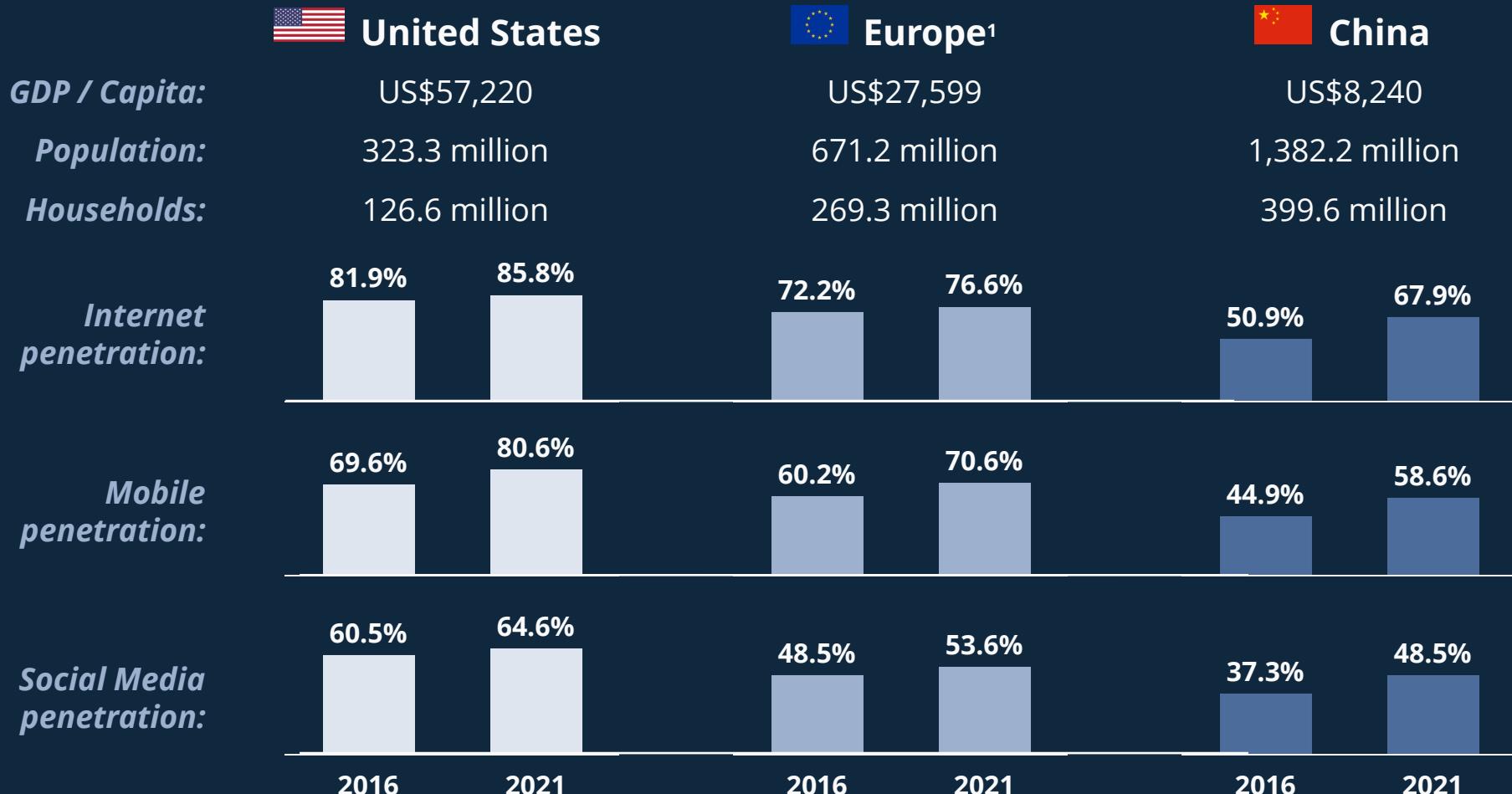
covering **7 years**, from '15 to '21.

1: B2B and C2C markets are excluded

2: Resale of used goods is not included

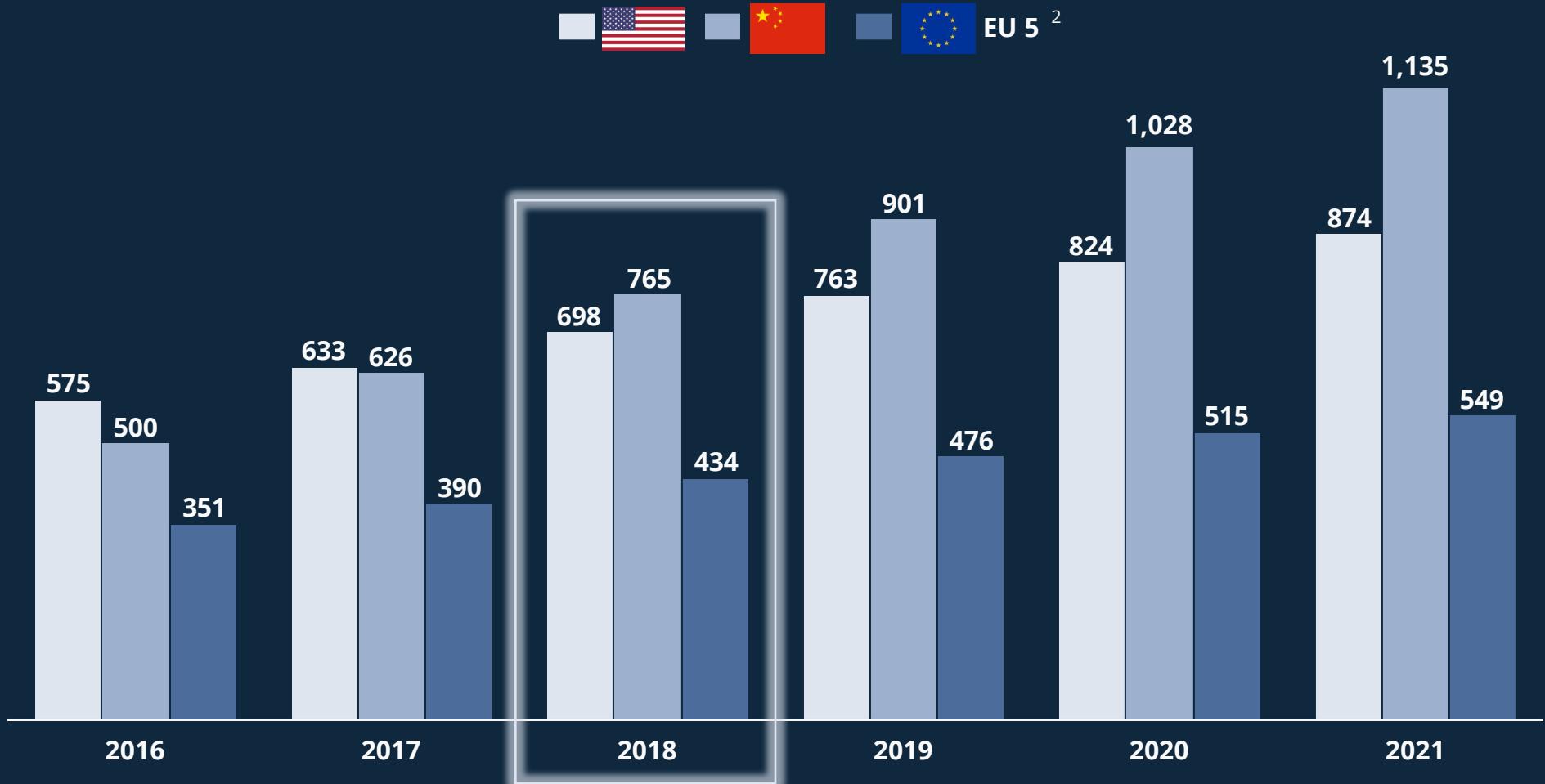
Forecasts based on market-specific knowledge,  
enriched with macroeconomic developments

## *Macroeconomic overview 2016*



In 2018, China will overtake the U.S. and will become the biggest digital economy

*Digital market<sup>1</sup> development of the three major regions (in US\$bn)*



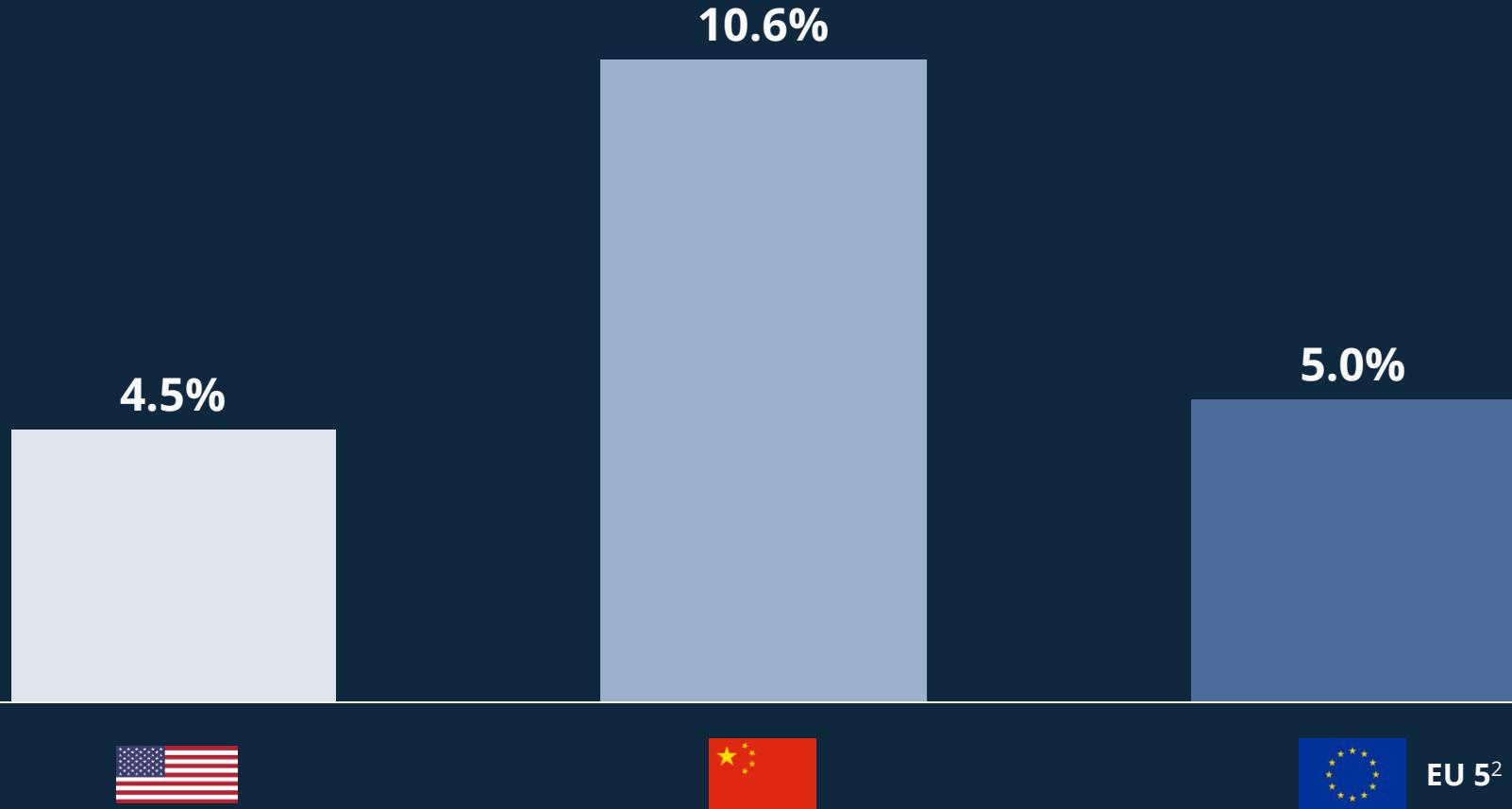
Source: [Statista Digital Market Outlook](#)

1: including all revenues generated within the e-Commerce, eTravel, eServices, Digital Media and Connected Car market

2: including France, Germany, Italy, Spain and the United Kingdom

In 2016, digital expenditure in % of household consumption per capita are the biggest in China

*Digital expenditure<sup>1</sup> as share of household consumption per capita in '16*



Source: **Statista Digital Market Outlook**

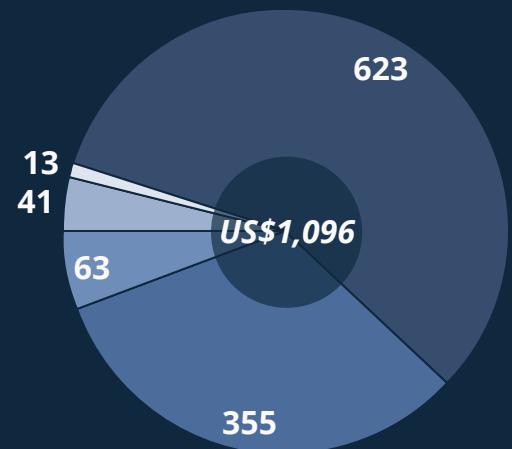
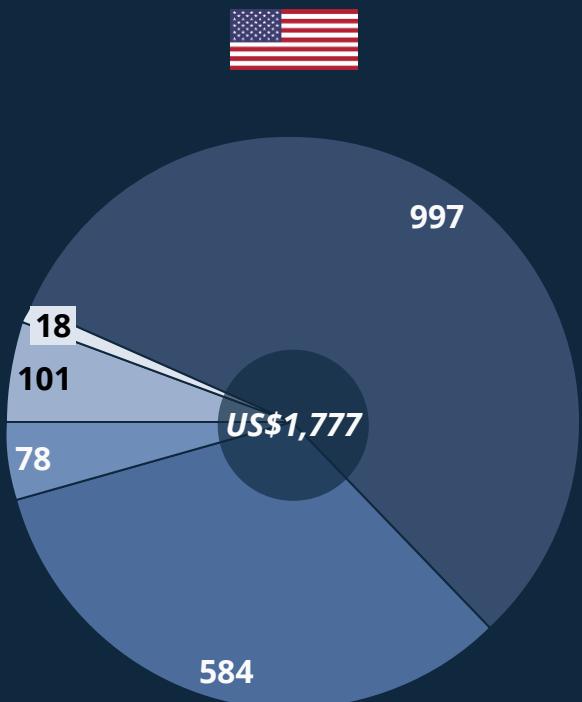
1: including all revenues generated within the e-Commerce, eTravel, eServices, Digital Media and Connected Car market

2: including France, Germany, Italy, Spain and the United Kingdom

# E-Commerce is by far the biggest digital market people spend their money on

*Digital expenditure per capita in the major regions per category in '16*

e-Commerce eTravel eServices Digital Media Connected Car



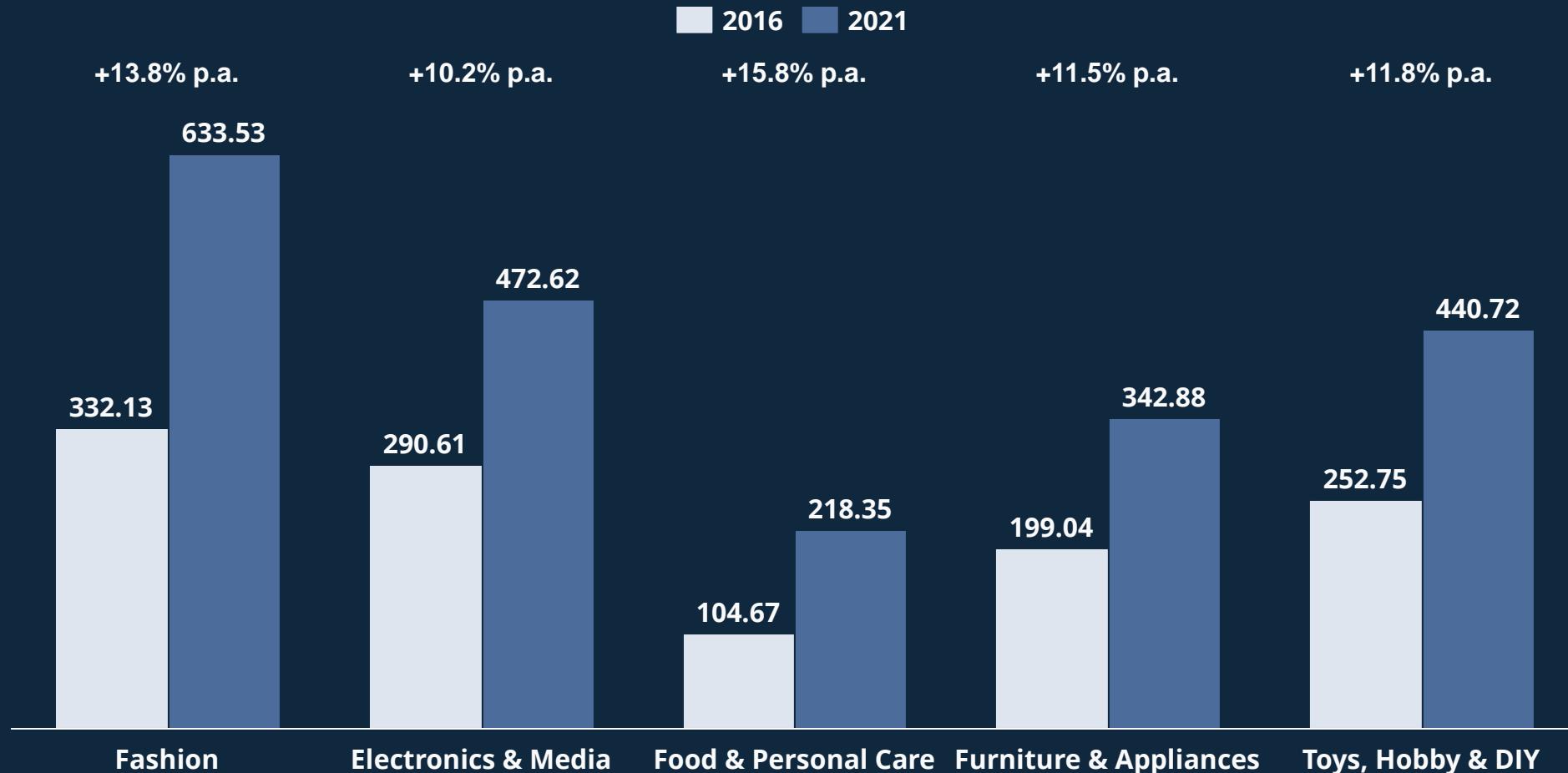
# E-Commerce

# 12,000,000

Chinese online retailer *Tmall* ships an incredible 12 million boxes per day

# Global e-Commerce revenue is expected to almost double to US\$2,108bn by 2021

*Global<sup>1</sup> e-commerce revenue (in US\$b) and CAGR<sup>2</sup> 16-21 by segment*



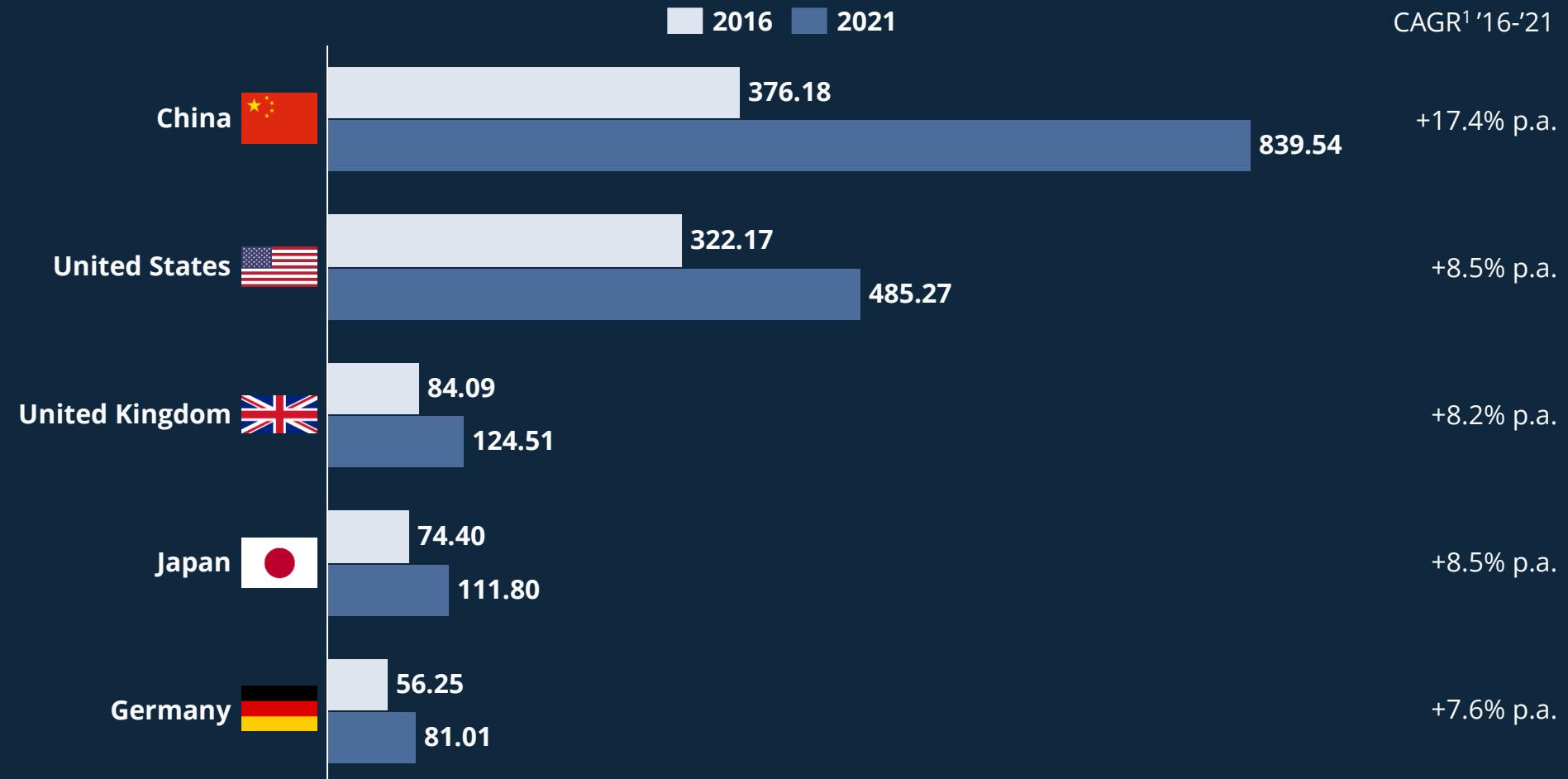
Source: [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

# The top e-Commerce markets exhibit growth and maintain their position in global ranking

*Total e-Commerce revenue by region (in US\$ billion)*



Source: **Statista Digital Market Outlook**

1: CAGR: Compound Annual Growth Rate

There are many product-specific big players in addition to large all-encompassing platforms

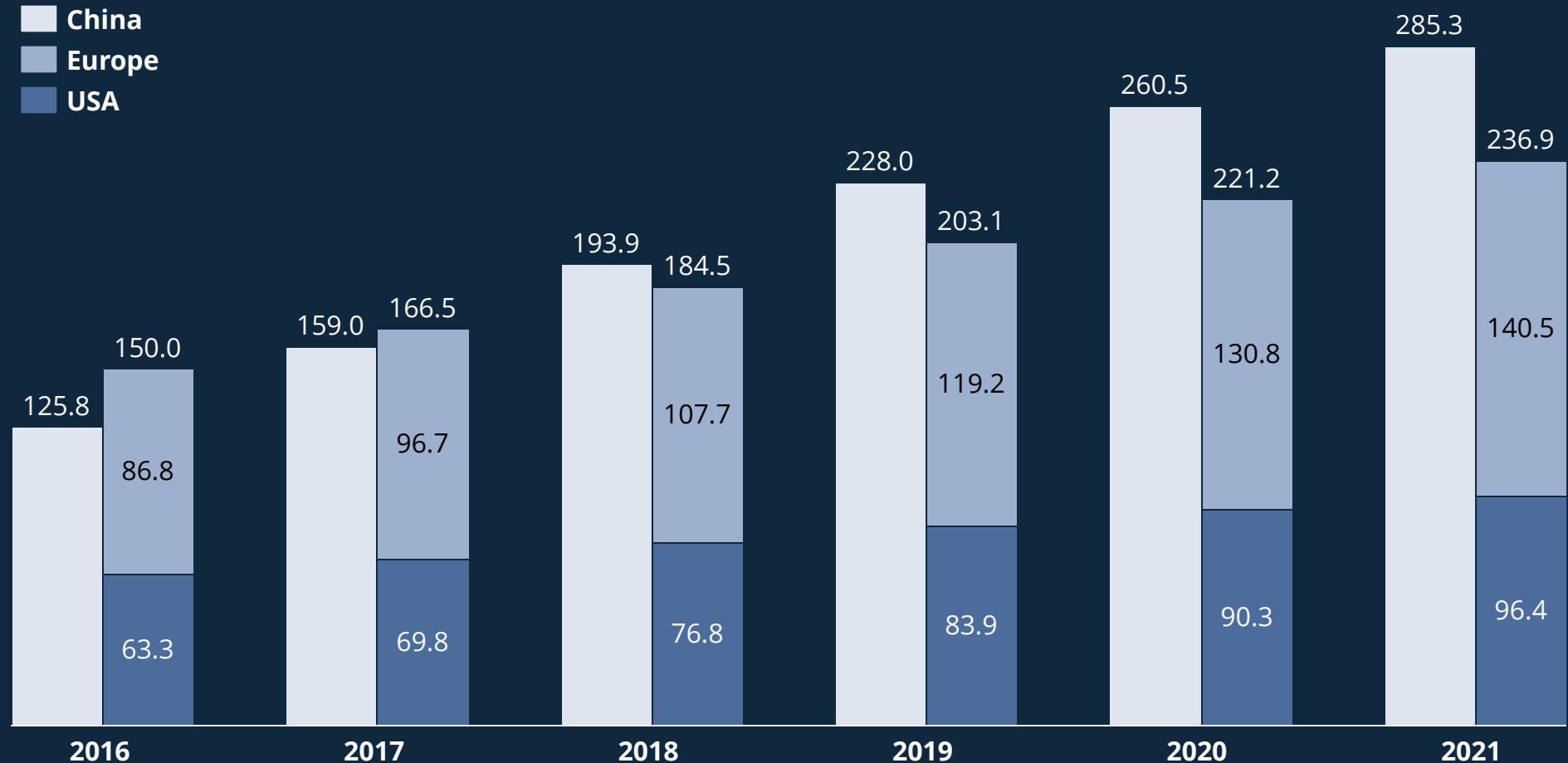
### *Key players by segment and business model*

Key Player	Fashion	Electronics & Media	Food & Personal Care	Furniture & Appliances	Toys, Hobby & DIY
<b>Market Places</b>	vente-privee.com	newegg	Alibaba Group		
<b>Online Retailer</b>	zalando	amazon	TESCO Walmart	Crate&Barrel home24 houzz	STAPLES Office DEPOT ToysRus Argos SPORTS DIRECT.com
<b>Direct Seller</b>	ZARA VICTORIA'S SECRET H&M	DELL hp Lenovo	Hello FRESH WHOLE FOODS MARKET SAFEWAY	wayfair IKEA POTTERY BARN	asics LEGO NIKE

Source: [Statista Digital Market Outlook](#)

China will dominate the online fashion world with a turnover of more than US\$285bn in 2021

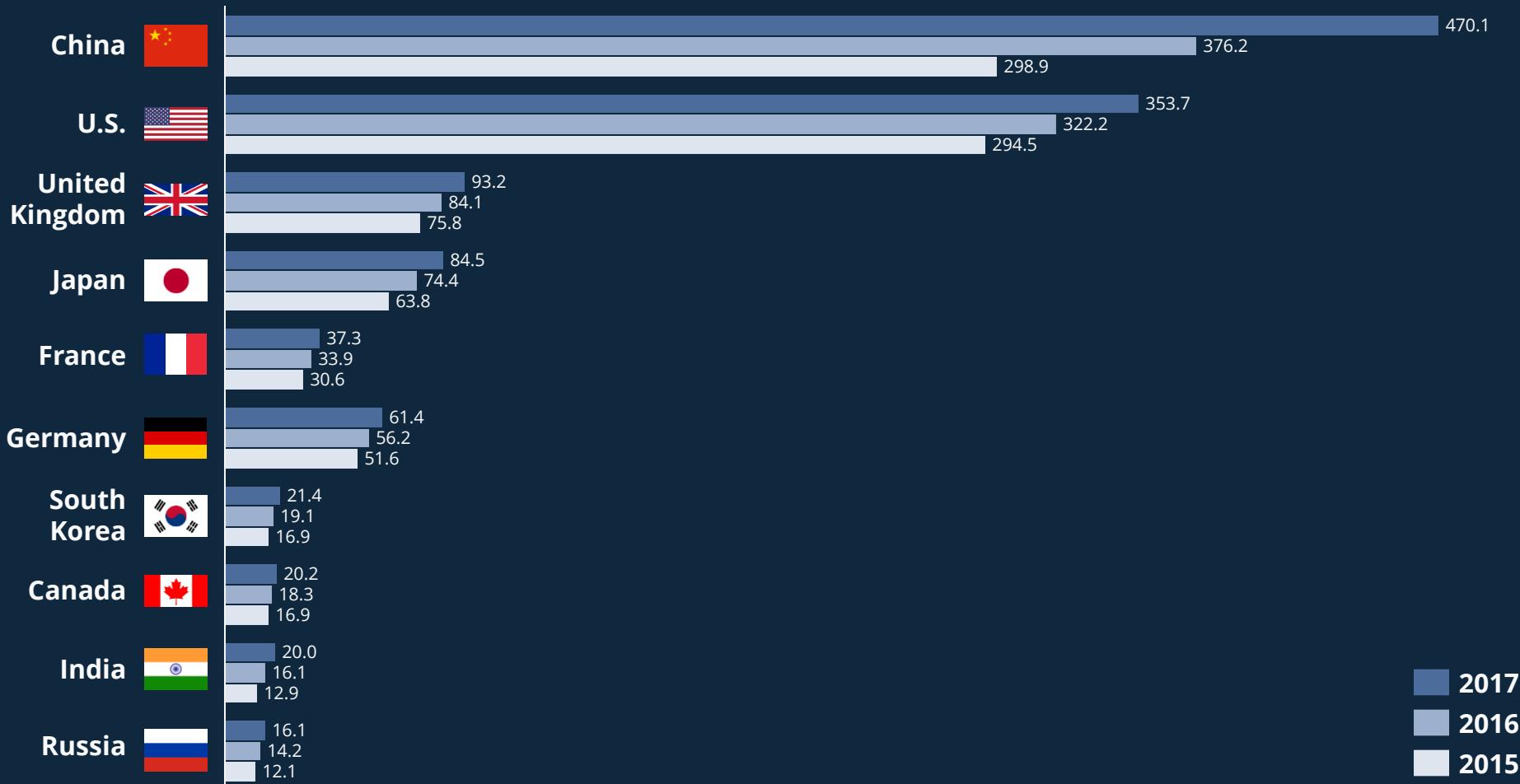
*Projected online turnover from fashion (in US\$ billion)*



Source: [Statista Digital Market Outlook](#)

# The Chinese B2C e-Commerce market outperformed the U.S. both in size as well as in growth

*B2C e-Commerce turnover from 2015 to 2017<sup>1</sup> in US\$ billion*



Source: [Statista Digital Market Outlook](#)

1: Prediction

# Transparency and simple processes are most important for online shopping delivery

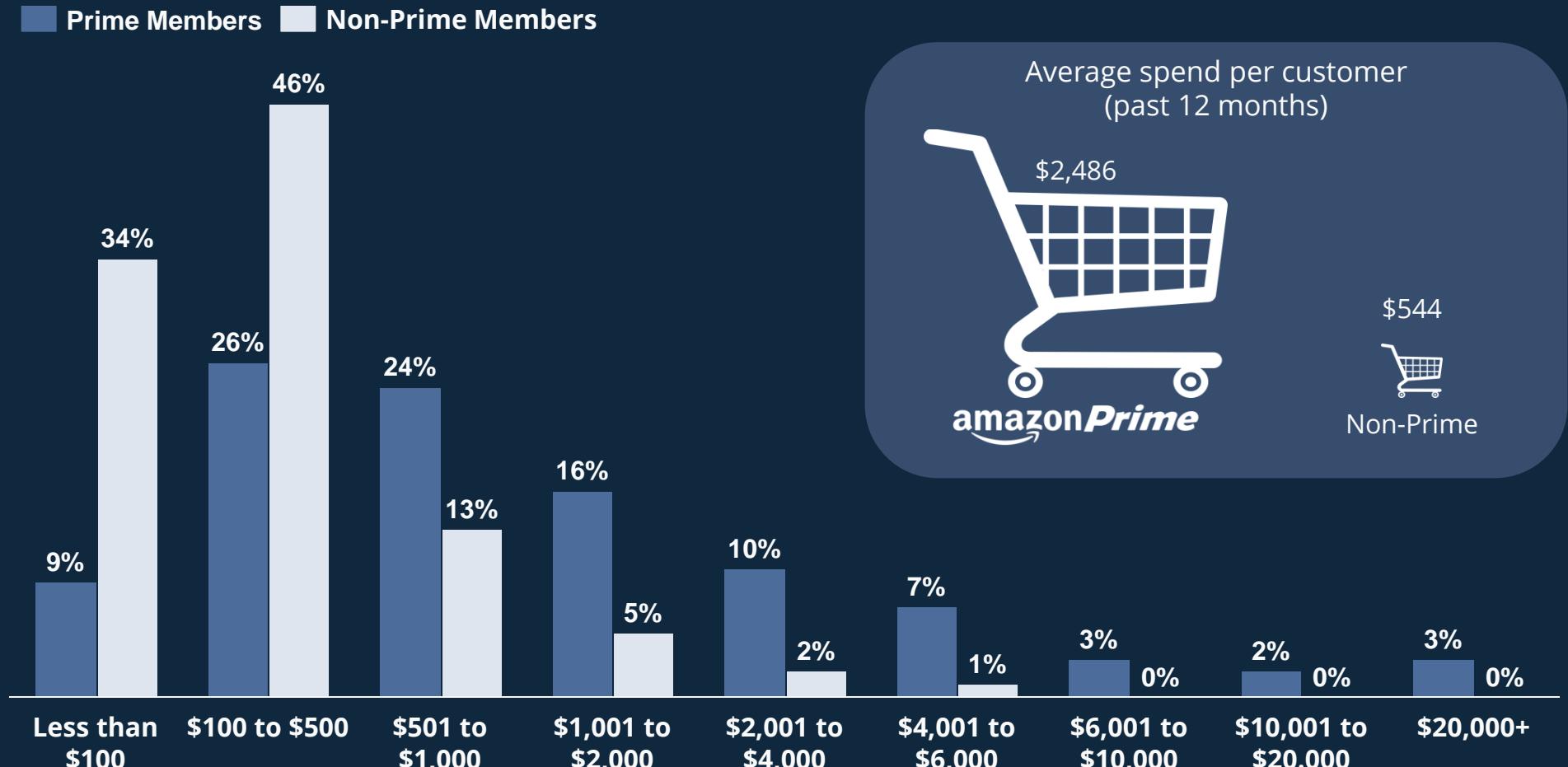
## *Most important aspects of online shopping delivery for customers*



**source:** IPC online survey with 23,331 respondents (Sept. to Oct. 2016)

Amazon leverages loyalty from Prime members; thus, incentivizing them is an important strategy

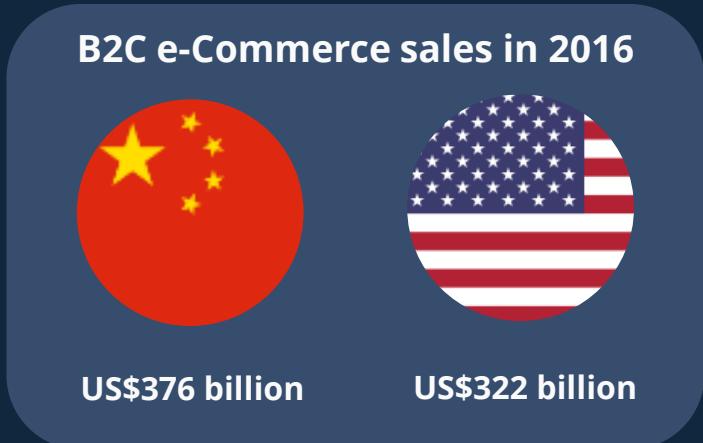
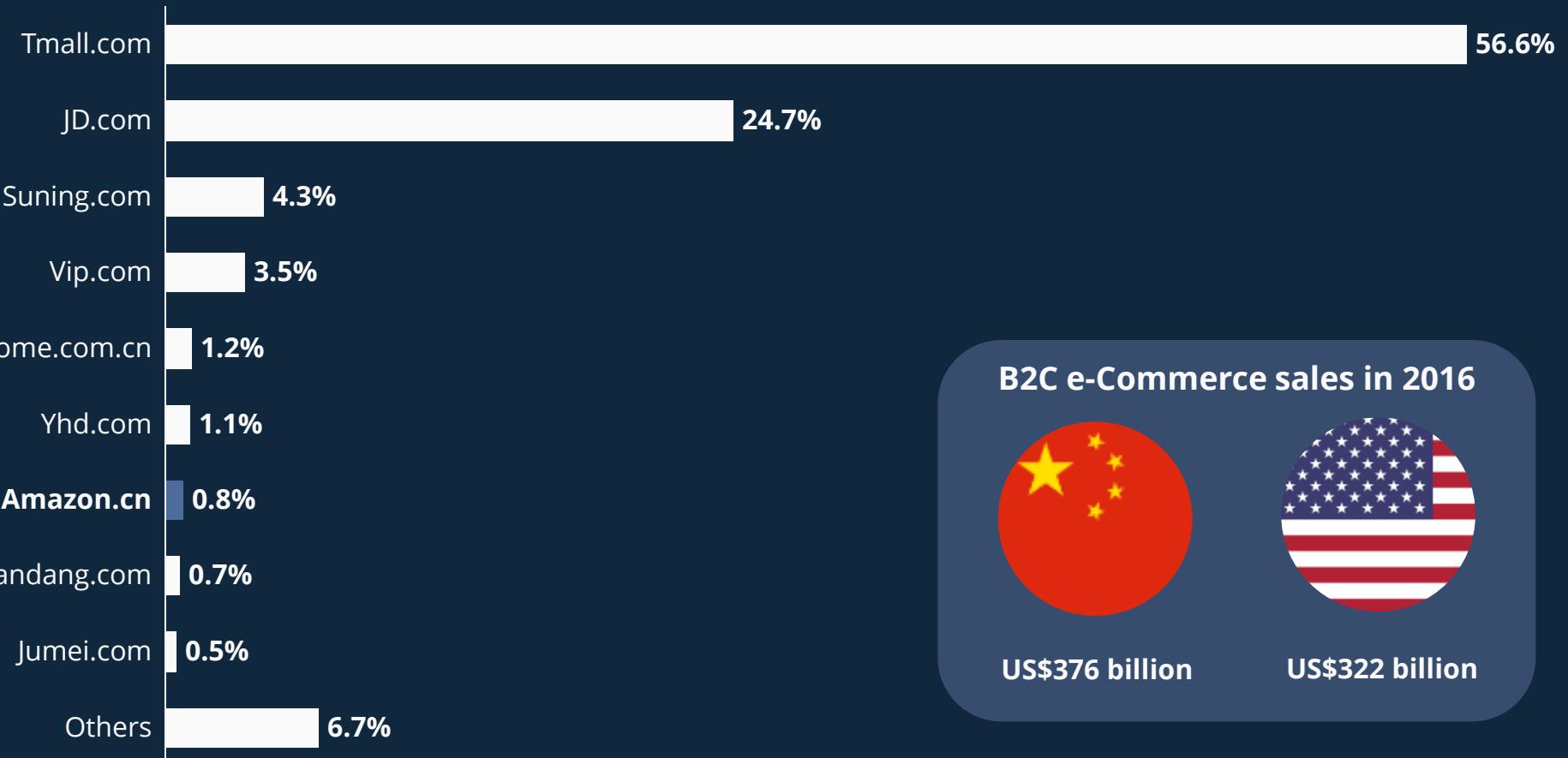
*Amount spent by U.S. Amazon customers in the past 12 months*



**sources:** Morgan Stanley Research, AlphaWise

Despite being #1 in the U.S. and Europe,  
Amazon has not yet cracked the Chinese market

*Market share of e-Commerce websites in China (in % of B2C sales)*



source: iResearch China, U.S. Department of Commerce, Statista Digital Market Outlook

# Online Shopping is not as profitable as you think

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- › Furniture & Appliances
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# eServices

# 1,400,000,000

Online dating app **Tinder** registers a daily average of 1.4 billion swipes on its platform

Food delivery is the most dynamic eServices market, with revenues expected to triple by 2021

*Global<sup>1</sup> eServices revenue (in US\$ billion) and CAGR<sup>2</sup> 16-21 by segment*



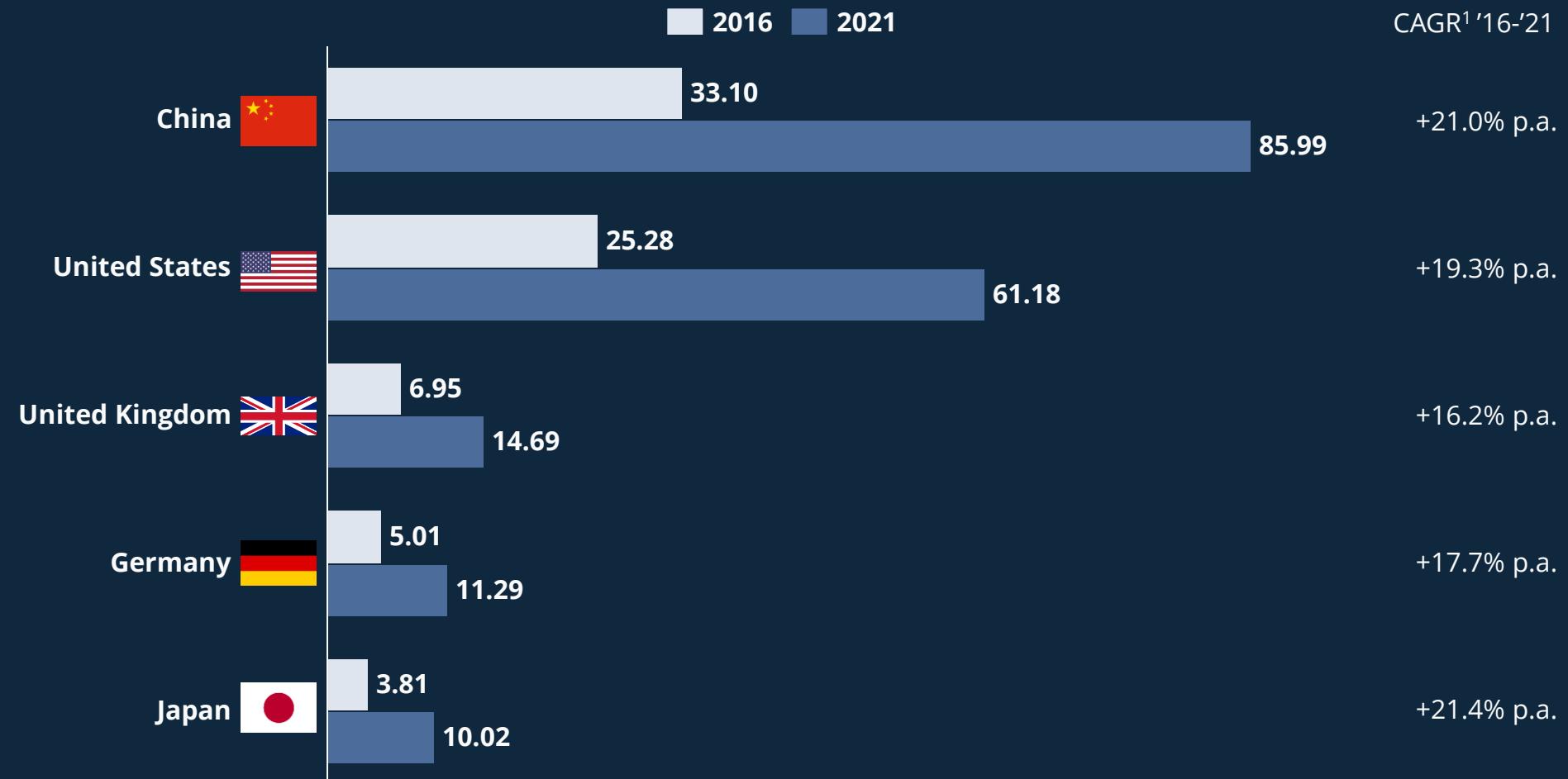
Source: **Statista Digital Market Outlook**

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

An estimated eServices market value of US\$86bn by 2021 will increase China's lead over the U.S.

*Total eServices revenue by region (in US\$ billion)*



Source: **Statista Digital Market Outlook**

1: CAGR: Compound Annual Growth Rate

# New market entrants create competitive pressures in the eServices market

*Selected key players by segment and market complexity*

	<i>Event Tickets</i>	<i>Fitness</i>	<i>Dating Services</i>	<i>Food Delivery</i>
<i>Startups<sup>1</sup></i>	     	        	         	     
<i>Established players</i>	        	      	        	      
<i>Market complexity<sup>2</sup></i>				

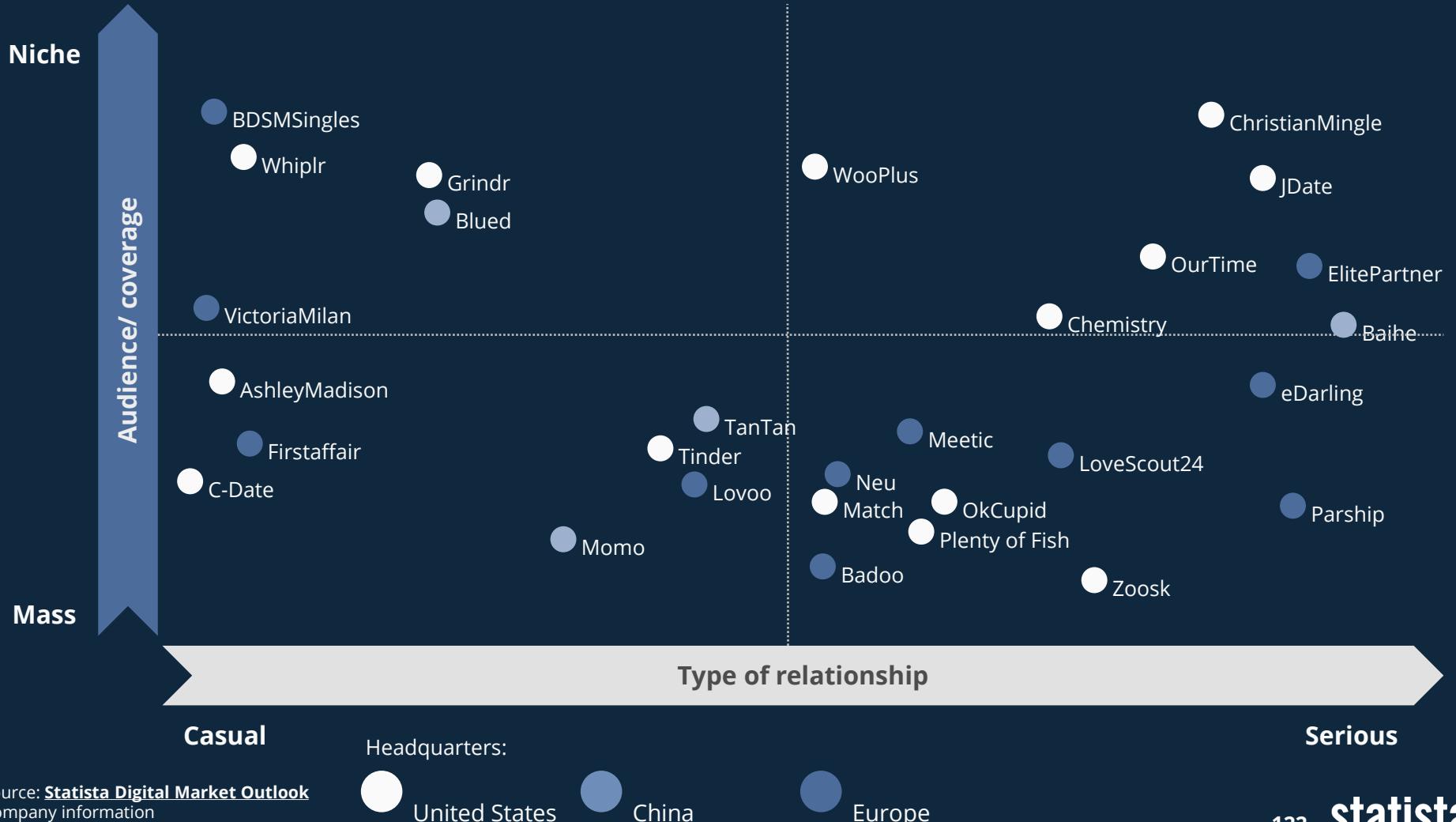
Source: [Statista Digital Market Outlook](#)

1: Founded after or in 2007

2: Estimate; considers value chain complexity and competitor landscape

In Dating Services, different offerings are targeted at various audiences and types of relationship

*Dating portals/apps segmentation of selected players*



# Sportswear giants are acquiring fitness apps; Under Armour is the most active player

## *Sportswear companies' fitness app acquisitions*

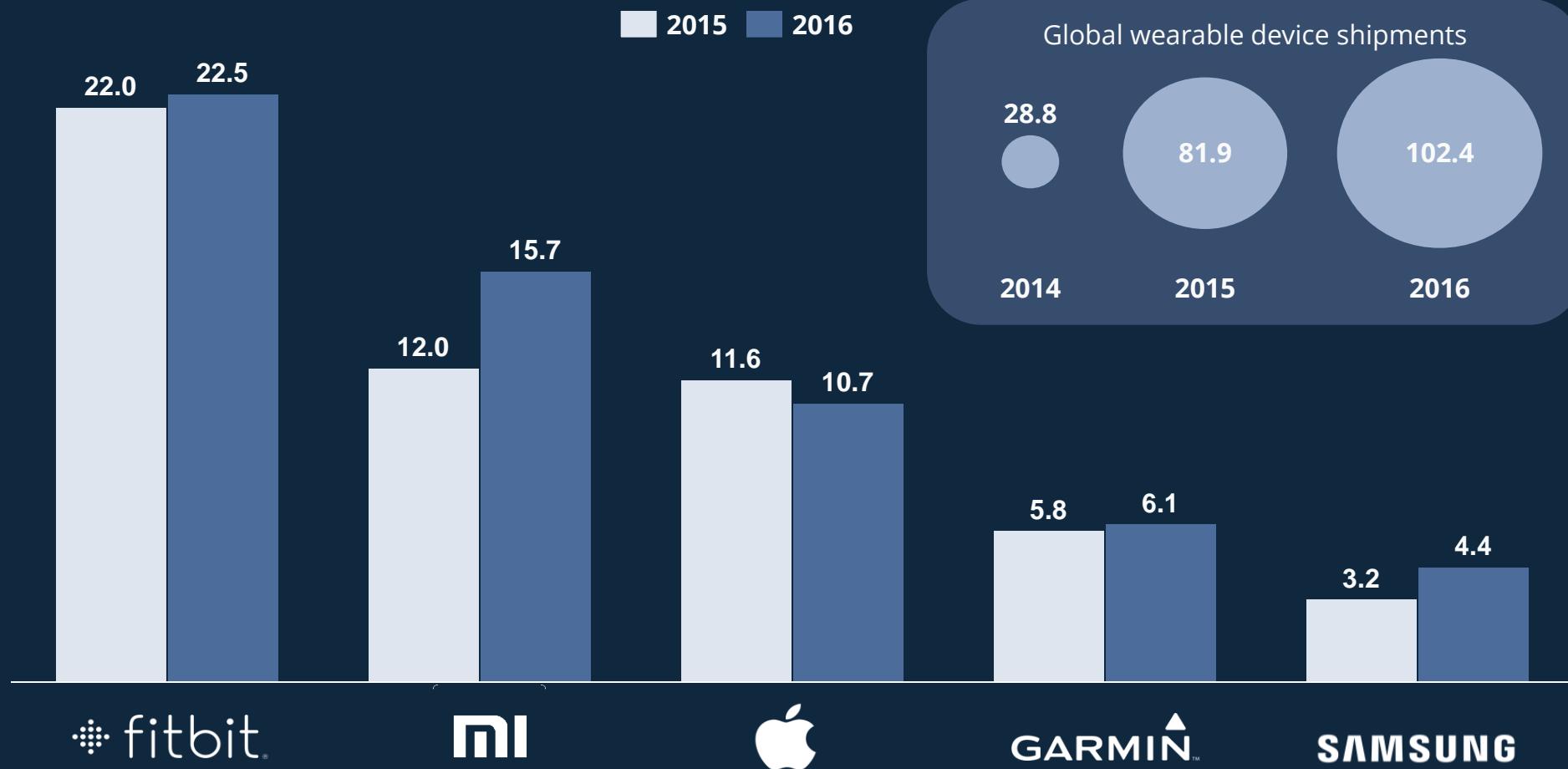


**Sources:** DC Reinmaker, Fortune, Runnersworld, **Statista Digital Market Outlook**

1: Under Armour also acquired Gritness in July 2015 for an unknown amount.

# Fitbit leads the global wearables market; what can be expected from the Apple Watch?

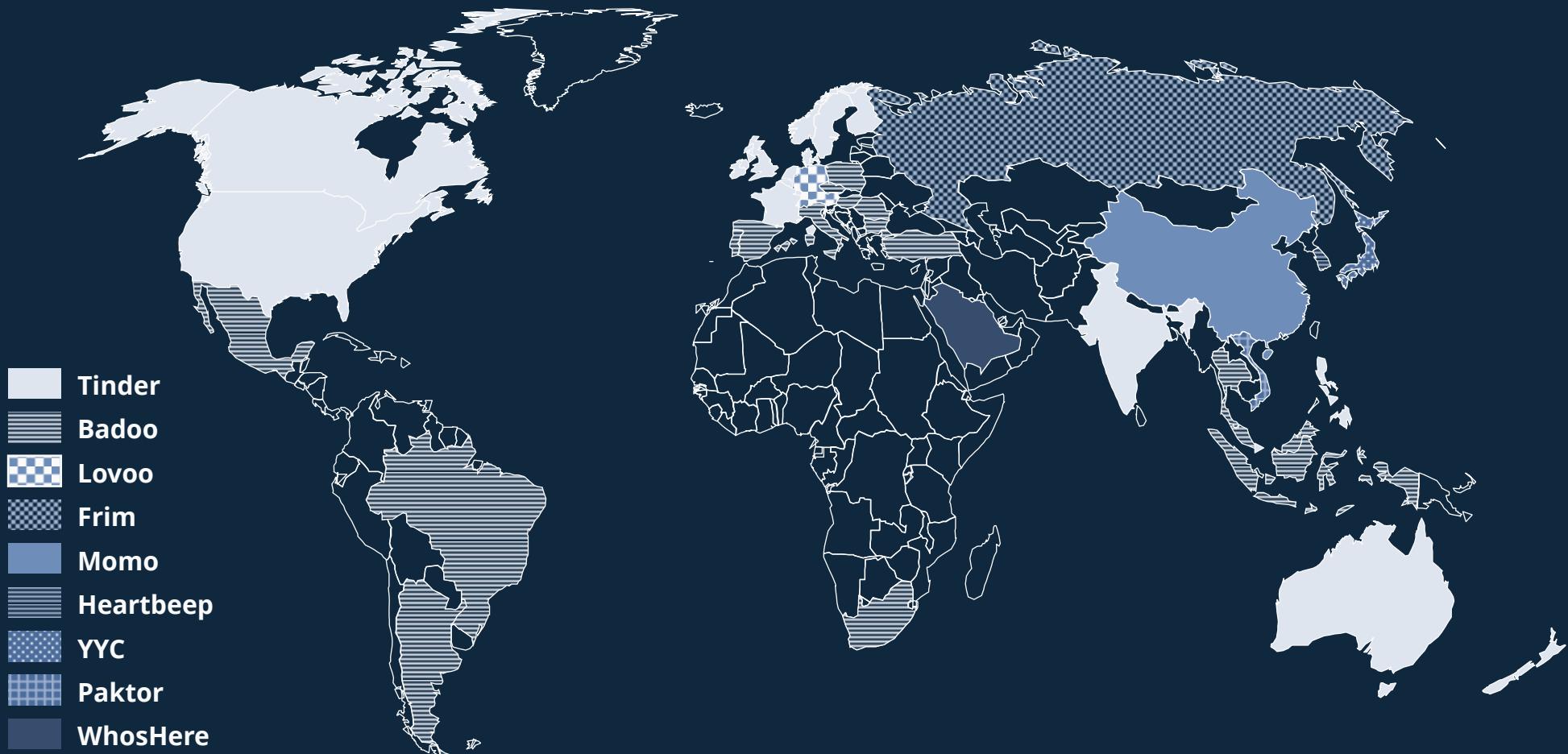
*Worldwide wearable device shipments by the Top 5 vendors in million*



source: IDC

# Tinder and Badoo are the top 2 dating apps in terms of global<sup>1</sup> downloads

*The most downloaded dating app by country 2015*



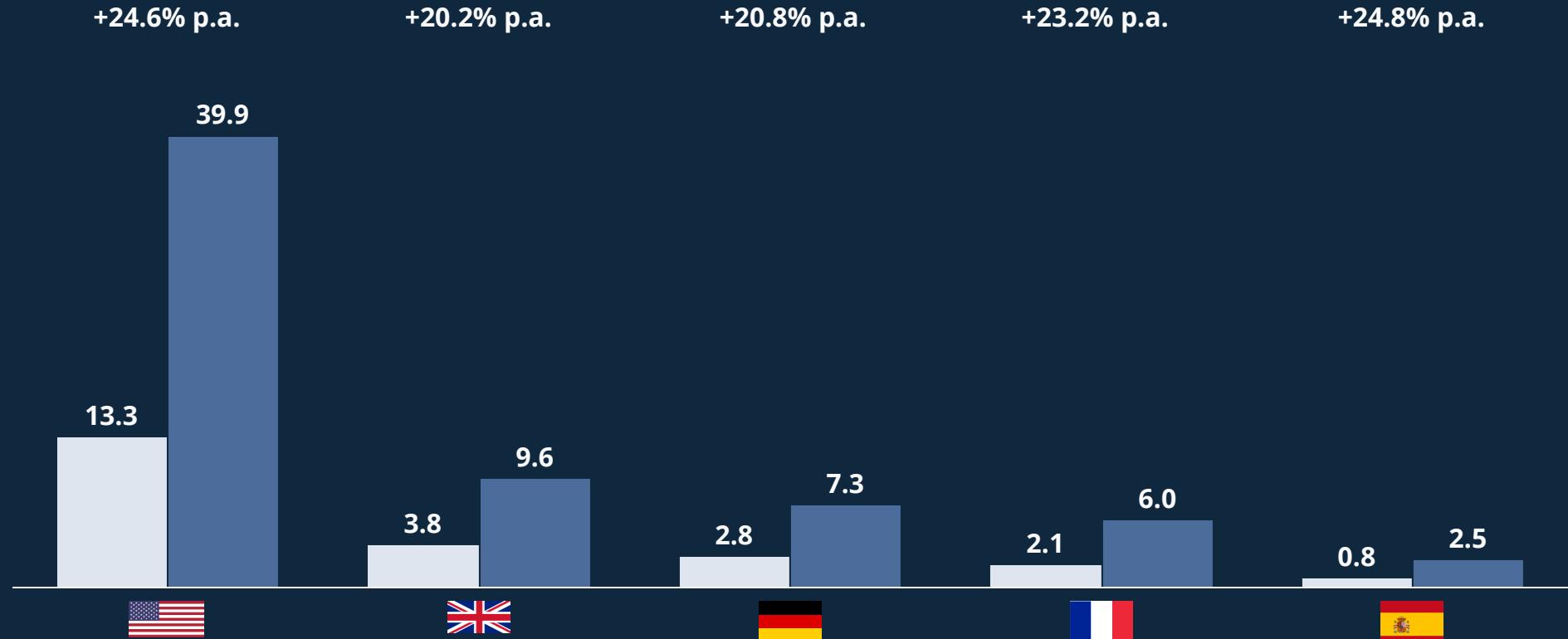
**Sources:** BBC News, App Annie, [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

# Selling food online is a promising business – especially in the U.S.

*Online food delivery<sup>1</sup> revenue forecast (in US\$ billion)*

■ 2016 ■ 2021

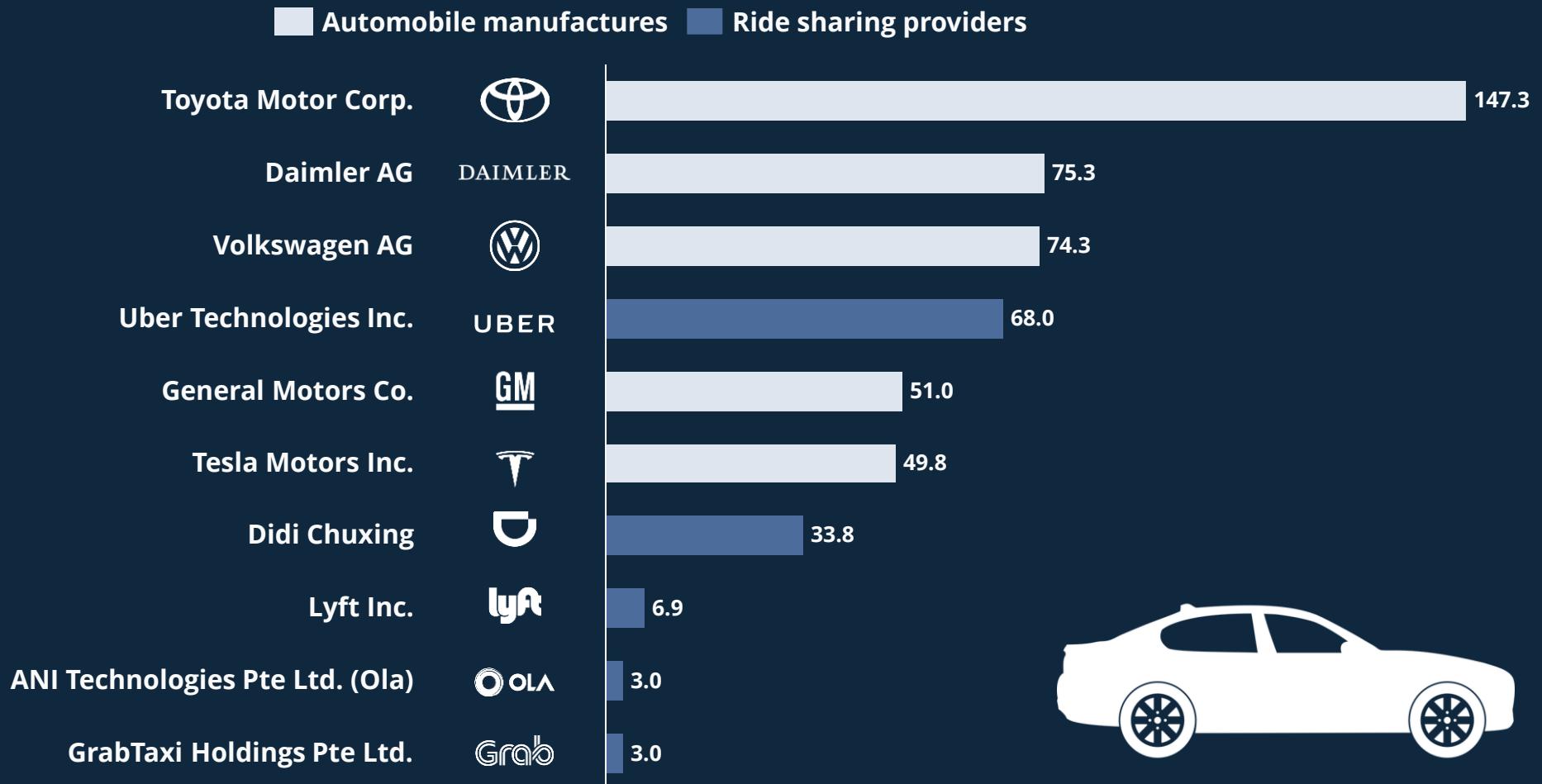


Source: **Statista Digital Market Outlook**

1: includes meals ordered online and delivered by restaurants, delivery services and online orders collected by the customer; does not include phone orders and grocery deliveries

# Despite not owning a single car, Uber's market valuation is closing in on the big OEMs

*Market cap/valuation of selected companies in 2017 (in US\$ billion)*

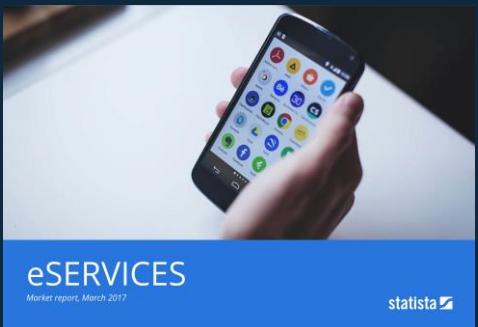


**source:** Yahoo! Finance, CB Insights, livemint

Note: Market cap as of 04-20-2017

# Everyone is taking a stab at online food delivery

*Discover more of our topic-related research for eServices*

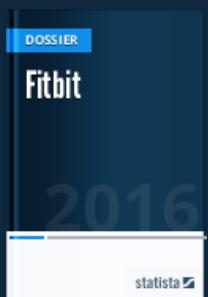


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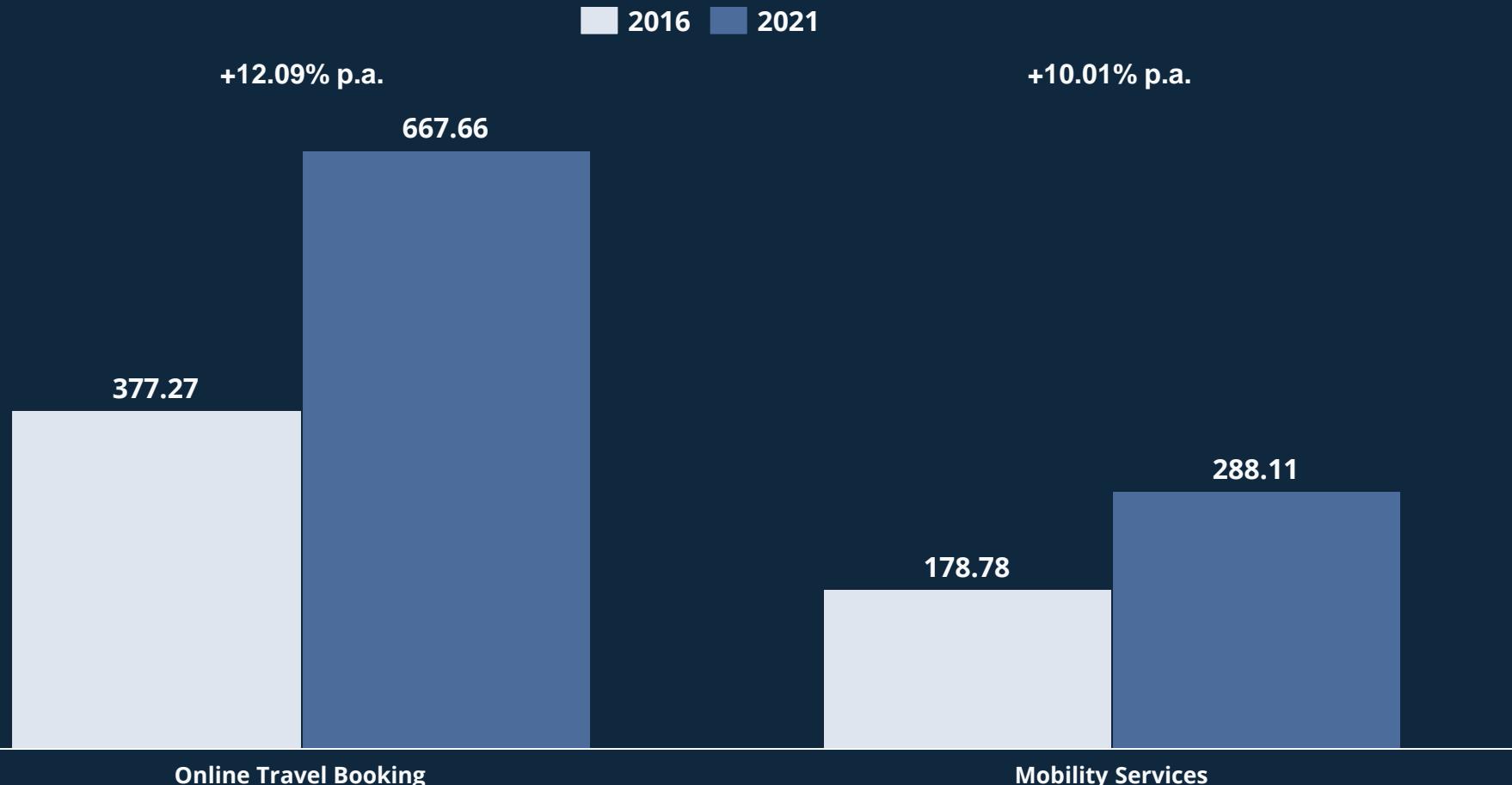
# eTravel

# 06-18-2016

The day online ride sharing company *Uber* reached a record breaking 2 billion users

The global eTravel market will almost double to around US\$1 trillion by 2021

*Global<sup>1</sup> e-commerce Revenue in US\$ billion and CAGR<sup>2</sup> 16-21 by segment*



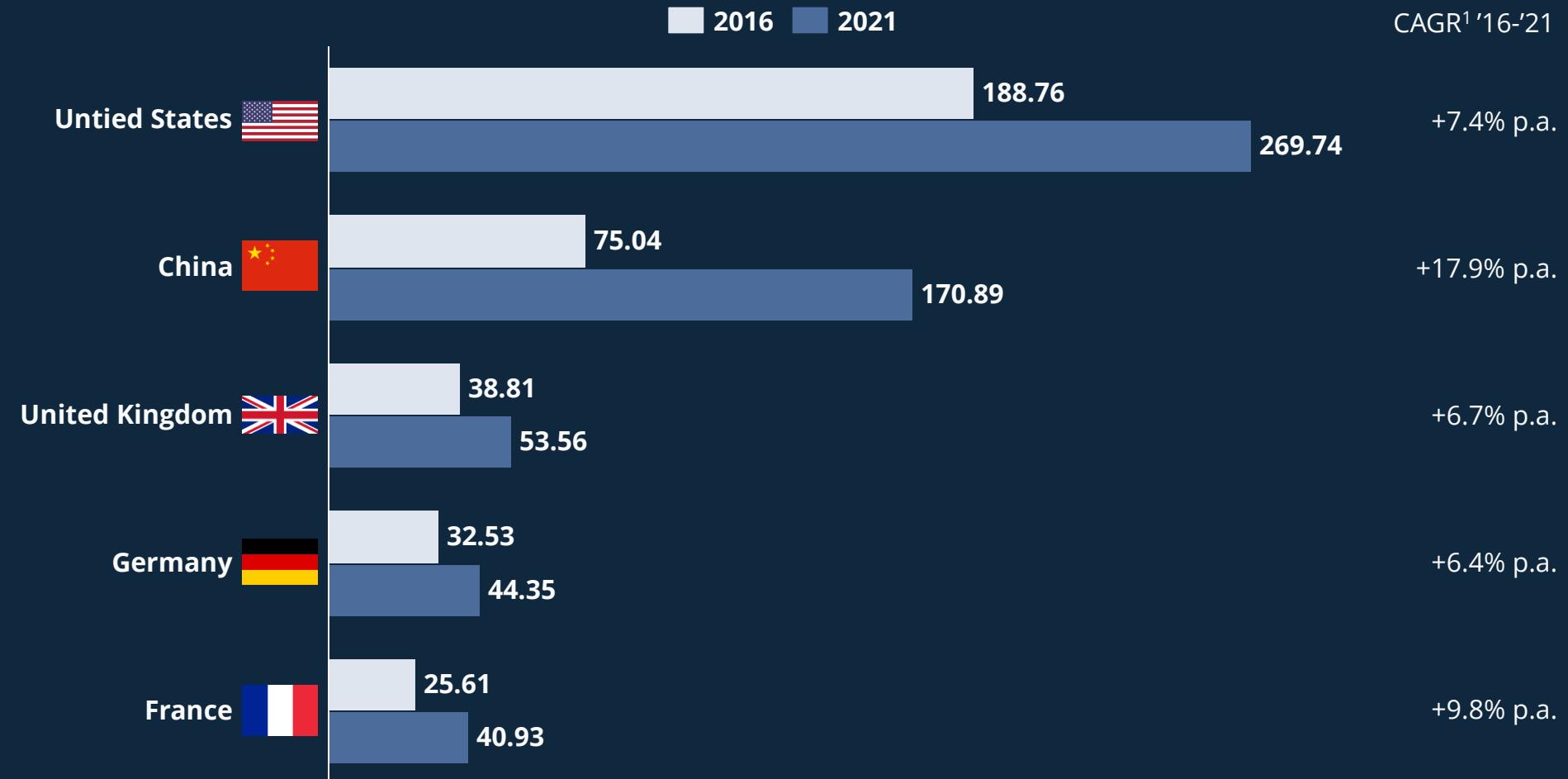
Source: **Statista Digital Market Outlook**

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

# China displays the fastest growth in terms of eTravel revenues

*Total eTravel revenue by region (in US\$ billion)*



Source: **Statista Digital Market Outlook**

1: CAGR: Compound Annual Growth Rate

# Companies in the eTravel market can be grouped into startups and established players

*Key players by segment and market complexity*

	Online Travel Booking	Mobility Services
Startups <sup>1</sup>	 <b>airbnb</b>  <b>lola</b>  <b>Hotel Tonight</b>   <b>OYO</b>  <b>VOSSY.</b>   	  <b>OLA</b>  <b>FLIXBUS</b>  <b>Bla Bla Car</b>    <b>zimride</b>   
Established players	 <b>HomeAway</b> <sup>®</sup>  <b>eDreams</b>  <b>ODIGEO</b>  <b>Expedia</b> <sup>®</sup>  <b>Hotels.com</b>     <b>Ctrip</b>    	           
Market complexity <sup>2</sup>		

Source: [Statista Digital Market Outlook](#)

1: Companies founded in or after 2007

2: Estimate; considers value chain complexity and competitor landscape

# Four big players account for the major M&A activity within the Online Travel Booking industry

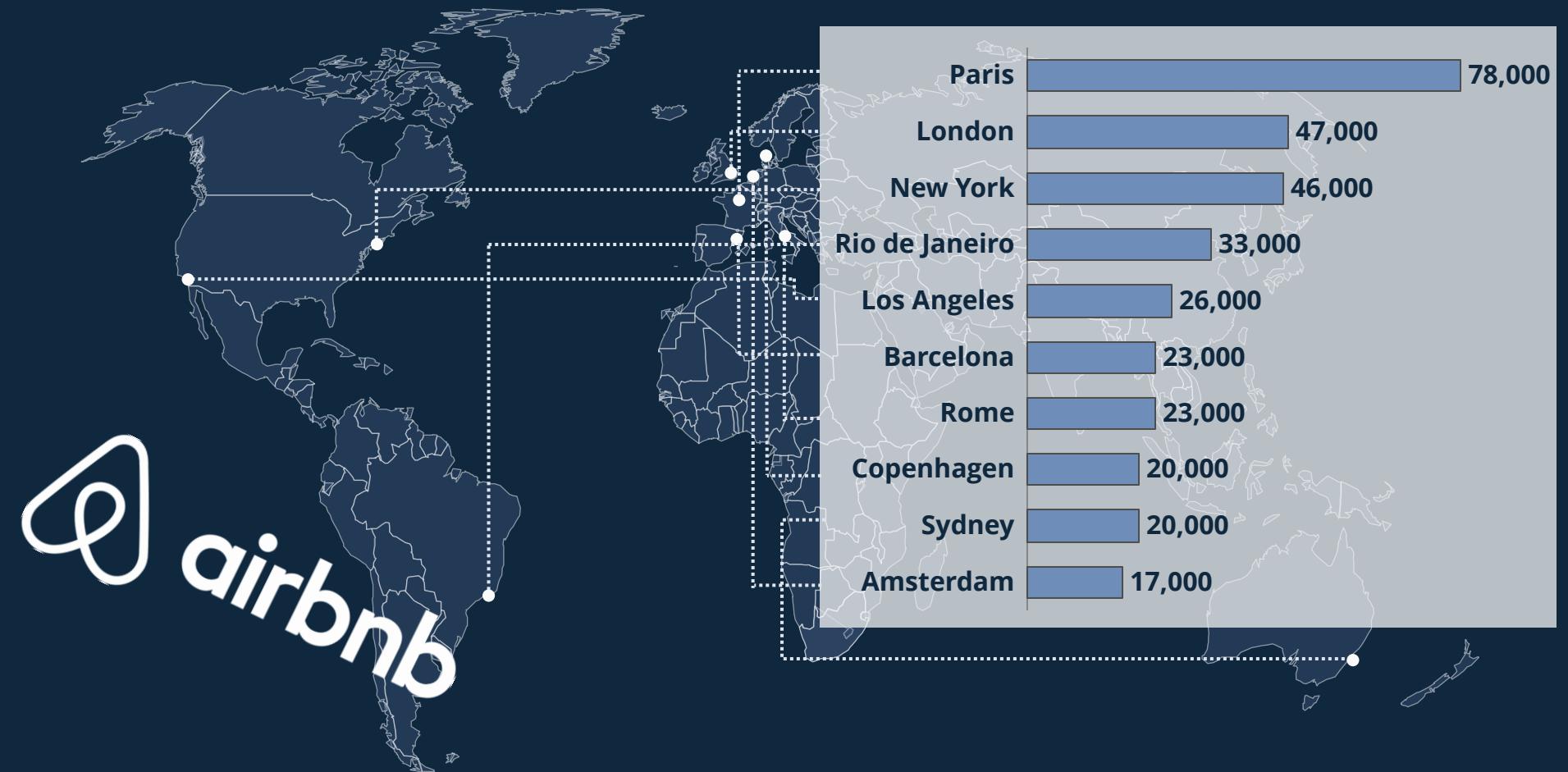
## *Selected players and selected acquisitions/ investments*

Ctrip			eDreams ODIGEO			Expedia			Priceline		
2016	Skyscanner	US\$1700m	2013	Liligo.com	N/A	2015	Homeaway	US\$3900m	2015	PriceMatch	N/A
2016	MakeMyTrip	US\$180m (27% stake)	2011	Opodo	N/A	2015	Orbitz, eBookers	US\$1600m	2014	Hotel Ninjas	N/A
2015	Tuniu	US\$500m	2011	eDreams	Merger	2015	Travelocity	US\$280m	2014	Buuteeq	N/A
2015	eLong	US\$400m (38% stake)	2011	GoVoyages	Merger	2014	Wotif	US\$658m	2014	OpenTable	US\$2600m
2015	Travelfusion	US\$160m				2014	Auto Escape	US\$85m	2012	Kayak	US\$1800m
2015	Qunar	45% stake				2012	Trivago	US\$632m (62% stake)	2010	Rentalcars	N/A
2015	Suanya	US\$16m				2008	CarRentals.com	N/A	2010	Swoodoo	N/A
2014	ToursForFun	US\$100m				2008	Venere	N/A	2007	Agoda	N/A
2014	Tujia	US\$100m				2001	Hotels.com	N/A	2005	Booking.com	US\$135m
2013	Yongche	US\$60m									

Source: [Statista Digital Market Outlook](#), Dealroom

# Airbnb has reshaped the way we book accommodations

*Number of Airbnb listings in cities worldwide in 2016<sup>1</sup>*



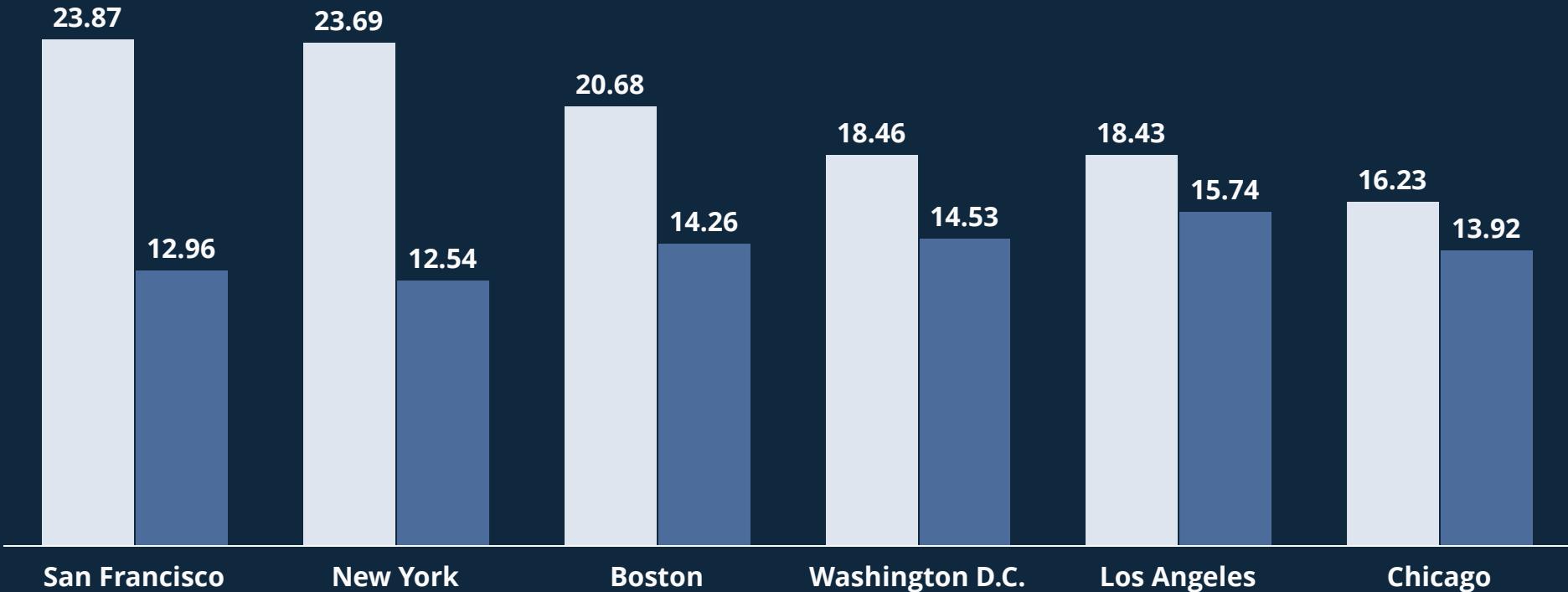
**source:** Airbnb Data & Analytics

1: Listings refer to entire flats, private rooms and shared rooms

# Fair deal? In major cities, taxi drivers earn significantly less than Uber drivers

*Estimated hourly earnings of driver services in major U.S. cities*

■ Uber Drivers (Net Earnings Per Hour)  
■ Taxi Drivers & Chauffeurs (Hourly Wages)



source: Uber

# Rethinking travel: Airbnb is just the beginning

*Discover more of our topic-related research for eTravel*

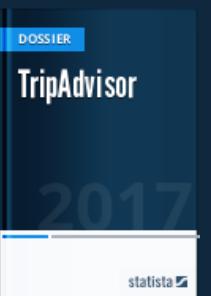


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# Digital Media

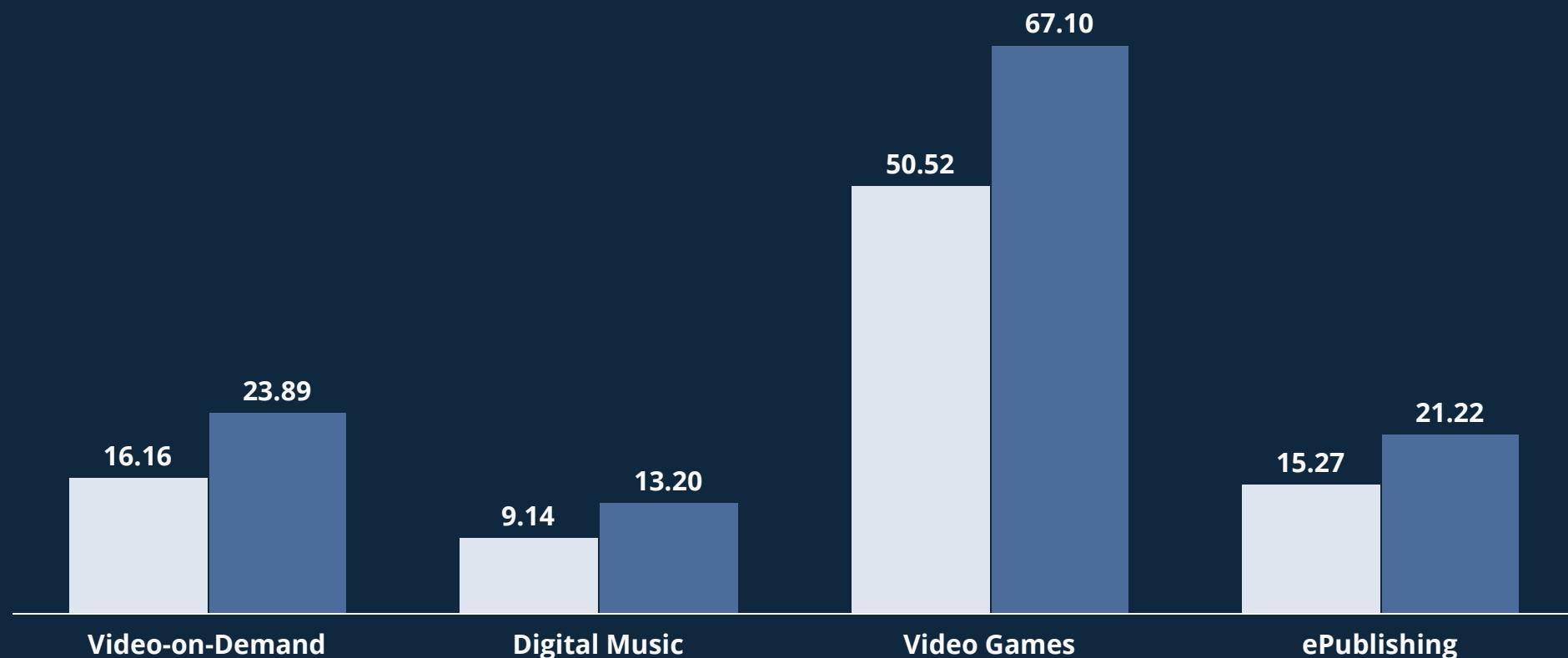
# 88,400,000

Virtual Reality is trending in Digital Media. In 2016 88.4 million **Google Cardboards** (Google's budget VR solution) were shipped, demonstrating how big a trend it really is.

# Revenues generated by Video Games overshadow other Digital Media

*Global<sup>1</sup> Digital Media revenue (in US\$ billion) and CAGR<sup>2</sup> 16-21 by segment*

+8.1% p.a.                    +7.6% p.a.                    +5.8% p.a.                    +6.8% p.a.



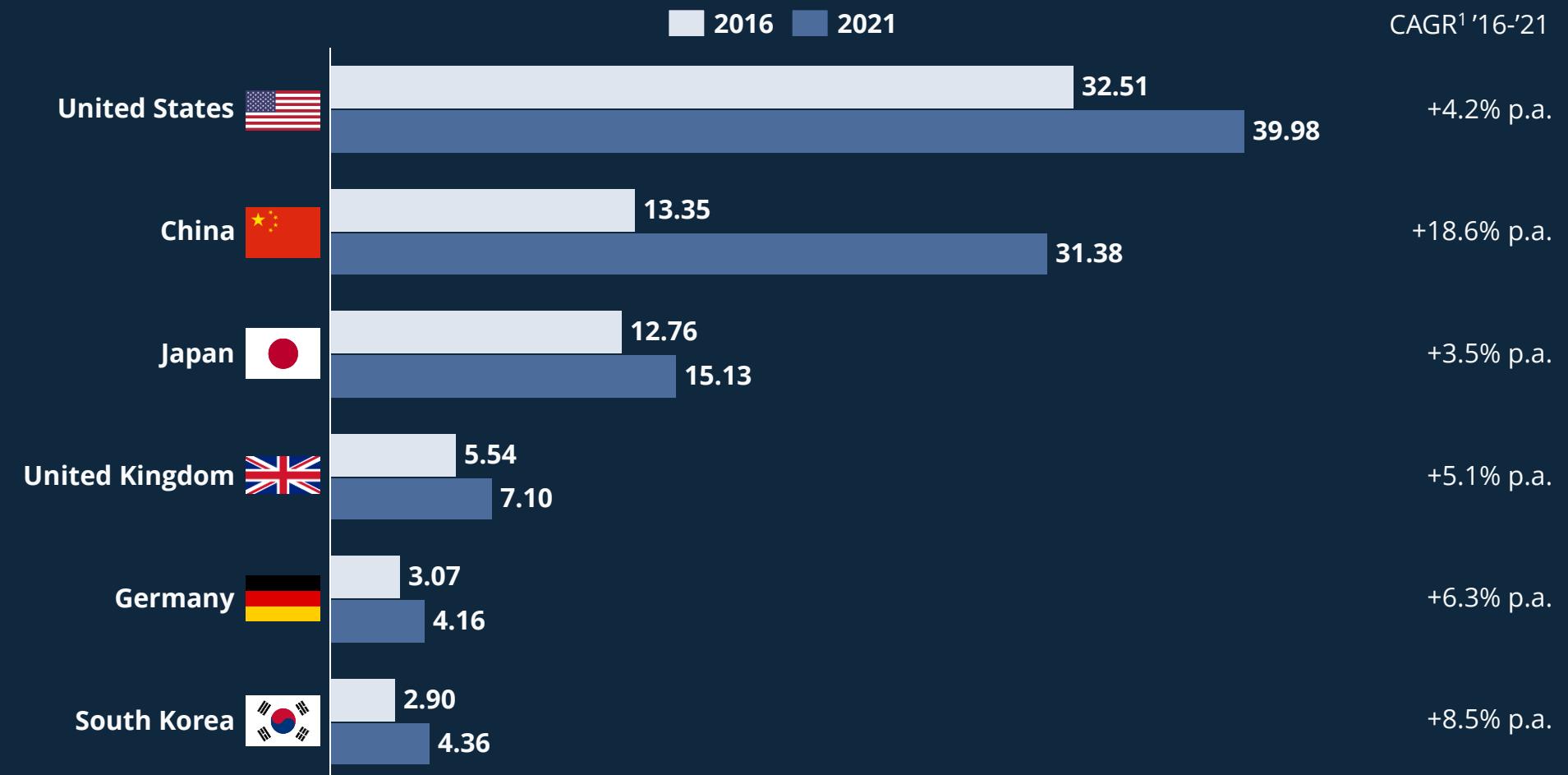
Source: **Statista Digital Market Outlook**

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

# The U.S. has the largest Digital Media revenues, while China shows promising development

*Total Digital Media revenue by region (in US\$ billion)*



Source: **Statista Digital Market Outlook**

1: CAGR: Compound Annual Growth Rate

In most Digital Media segments, very few players dominate the market

*Selection of key players in Digital Media*

Digital Music	Video-on-Demand	Video Games	ePublishing
 <b>napster</b>  <b>DEEZER</b>  <b>GUVERA</b>  <b>YouTube</b>  <b>Groove</b>  <b>TIDAL</b>  <b>Spotify</b>  <b>pandora</b>  <b>MUSIC</b>	 <b>ESPN</b>  <b>HBO NOW</b>  <b>NETFLIX</b>  <b>amazon</b>  <b>iQIYI 爱奇艺</b>  <b>hulu</b> 	 <b>amazon.com</b>  <b>STEAM</b>  <b>BATTLE.NET</b>  <b>GamePoint</b>  <b>FOG</b>  <b>CrazyMonkey Games</b>  <b>Origin</b>  <b>ARMOR GAMES</b>  <b>XBOX LIVE</b>  <b>msn games</b>  <b>ADDICTING GAMES</b>  <b>Humble Bundle</b>  <b>Nintendo eShop</b>  <b>GAMERSGATE</b>  <b>imvu</b>  <b>Google play</b>	 <b>PlayStation Store</b>  <b>nook</b>  <b>tolino</b>  <b>amazon kindle</b>  <b>kobo</b>  <b>dangdang.com</b>

Source: [Statista Digital Market Outlook](#)

# Youtube is the world's largest music streaming service and at no charge to users

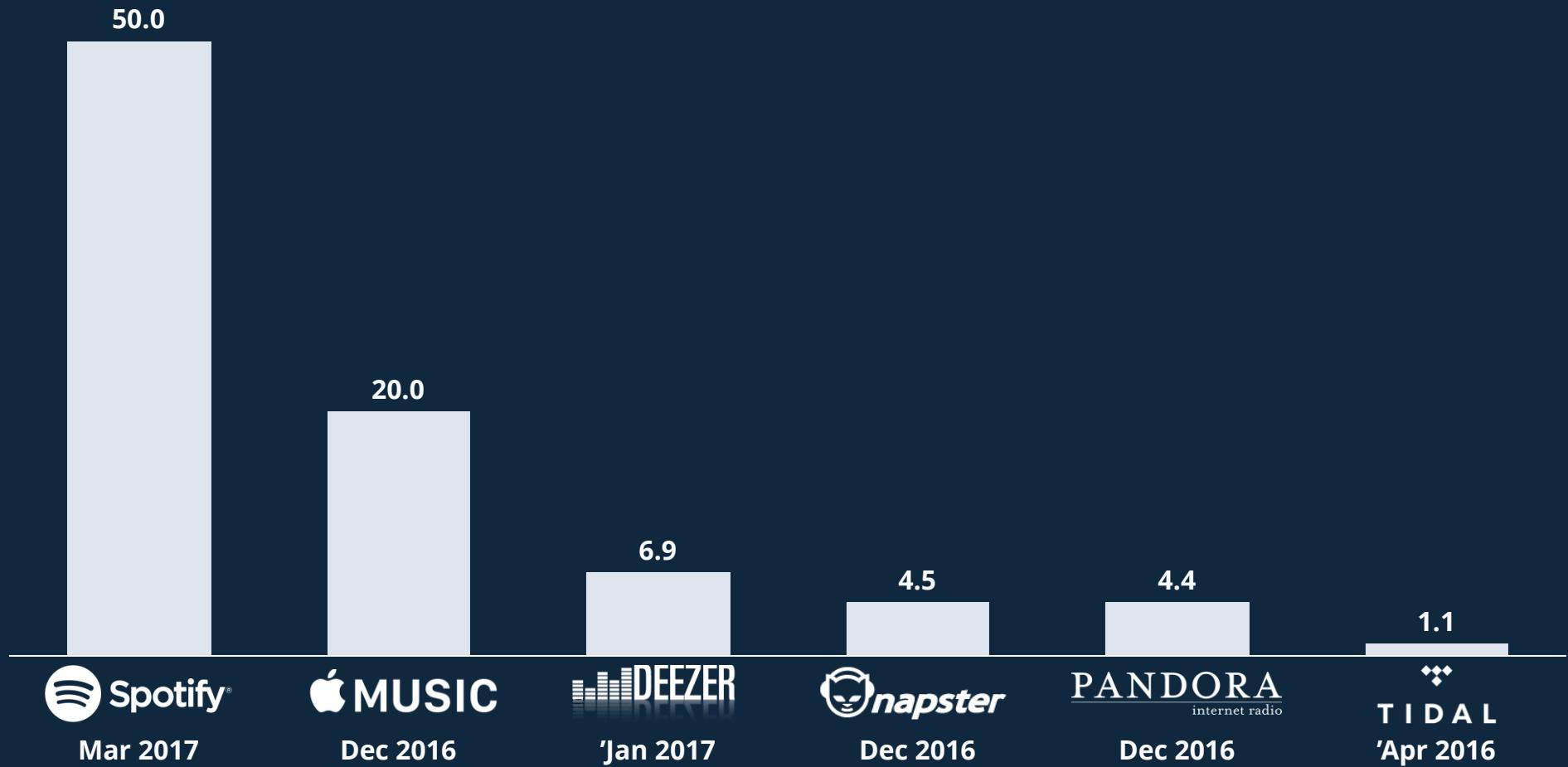
*Largest services for online music consumption and their number of users*



**source:** YouTube, IFPI, Ipsos, Spotify, Apple, Pandora, Apple Music  
Youtube has 1+ billion users. According to a survey among 10,552 YouTube users from 13 countries, 82 percent use it to listen to music

# Spotify is the leading streaming service with the largest number of paying subscribers

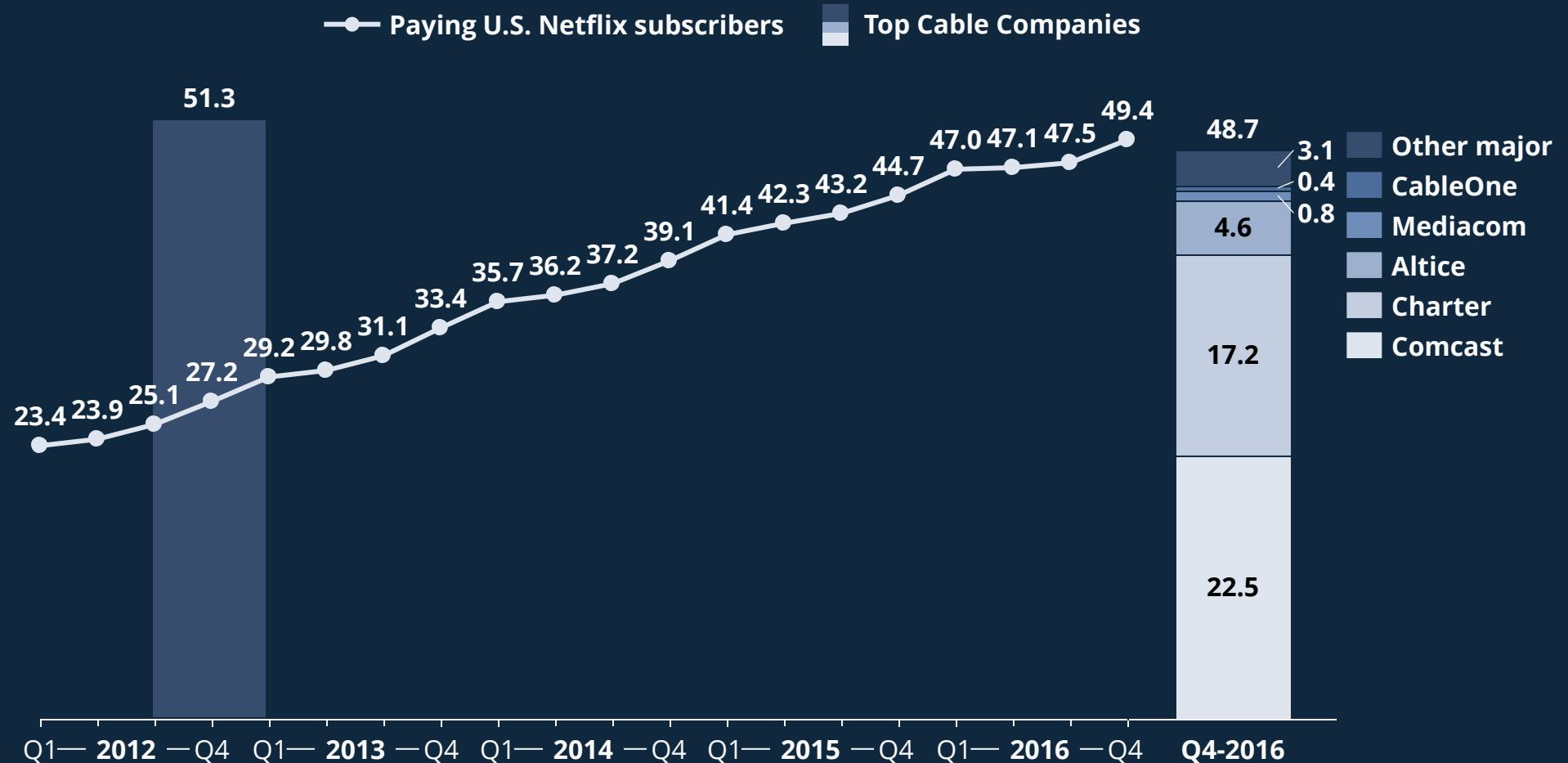
*Worldwide paid subscribers of music streaming services (in million)*



source: Company Announcements, MIDIA

In Q4-'16, Netflix had more paying subscribers in the U.S. than the top cable companies combined

*Netflix subscribers vs. top cable companies customers in the U.S. (in m)*



Source: Company Information, MarketingCharts, Leichtman Research Group

# eBooks and hardcovers are most expensive in Germany

*Avg. price of the Top 10 bestsellers on Amazon (in US\$)*



Source: [Statista Digital Market Outlook](#)  
As of April 5, 2017

# What comes after subscription in digital media?

*Discover more of our topic-related research for Digital Media*

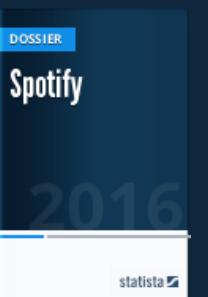


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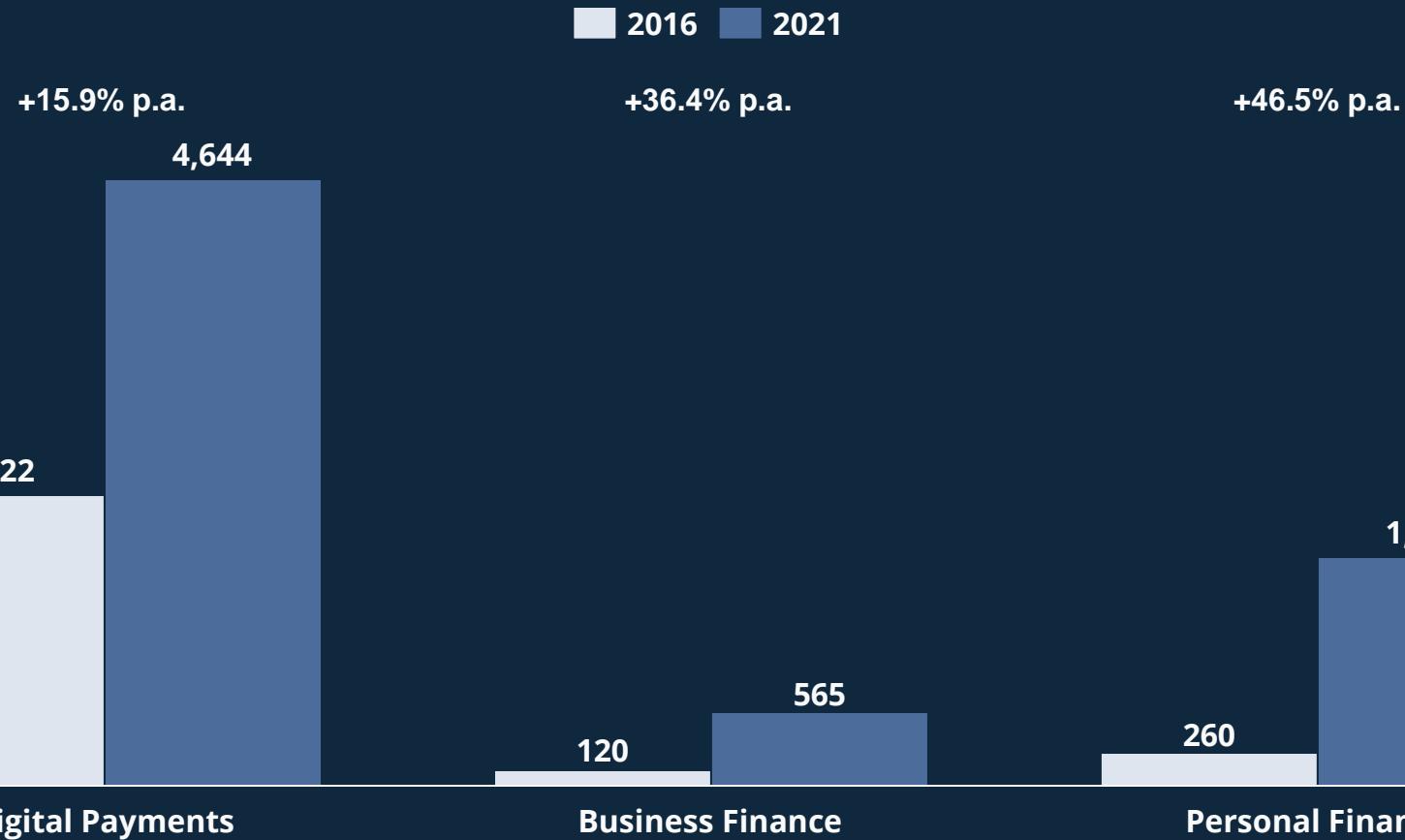
# FinTech

“If banks cannot truly be customer intimate, they are doomed to be just dumb commodities, acting behind the scenes, like utilities.”

**JP Nicols,**  
Bank innovation consulting expert

# Global<sup>1</sup> Digital Payments are expected to more than double by 2021

*Global<sup>1</sup> FinTech transaction value and Assets under Management (in US\$ billion) and CAGR<sup>2</sup> 16-21 by segment*



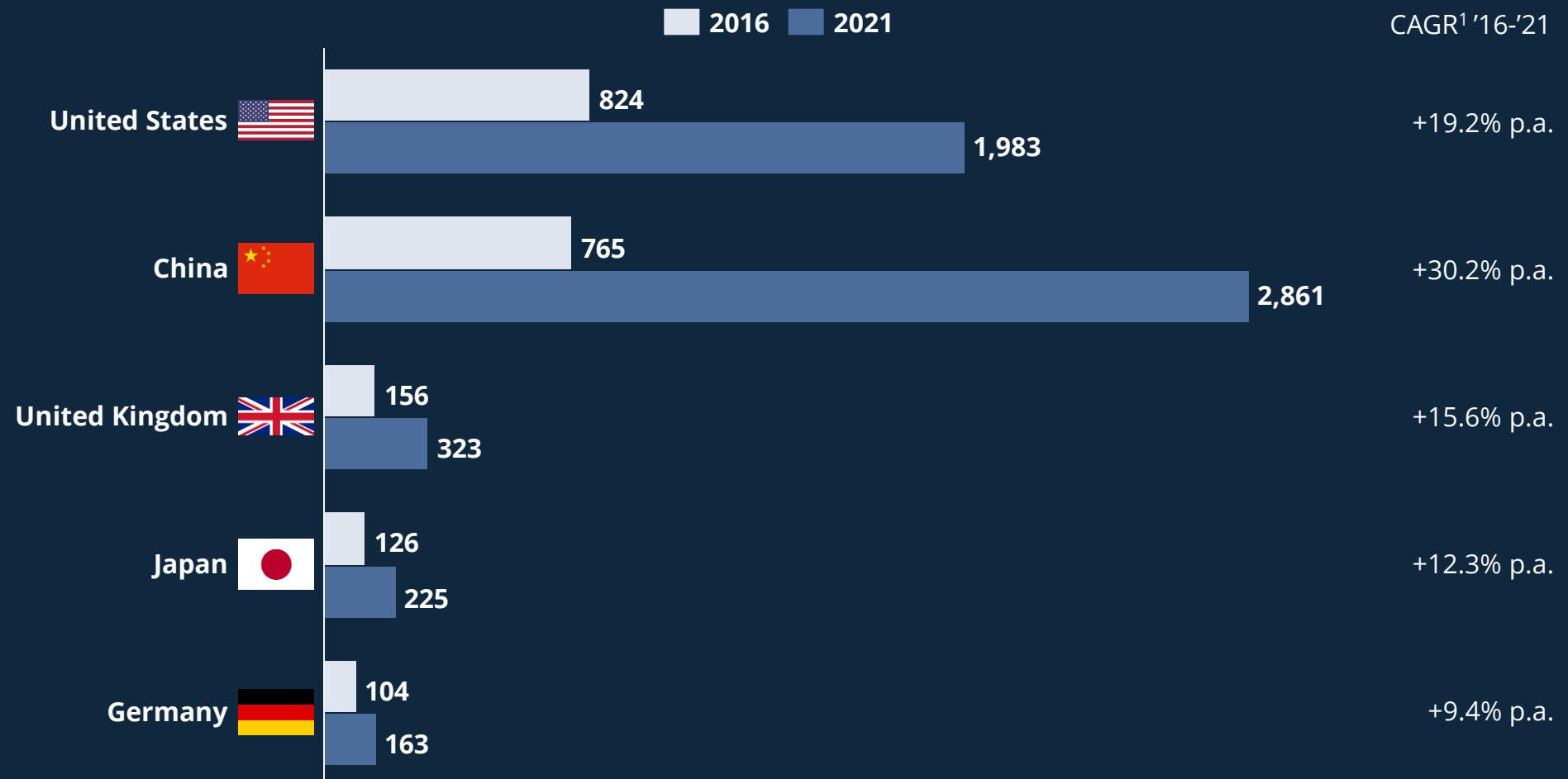
Source: [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

It's early days for FinTech markets; however, the U.S. and China have promising prospects

*Total FinTech transaction value by region (in US\$ billion)*



Source: [Statista Digital Market Outlook](#)

1: CAGR: Compound Annual Growth Rate

# Most prominent FinTech players can be found in the Digital Payment segment

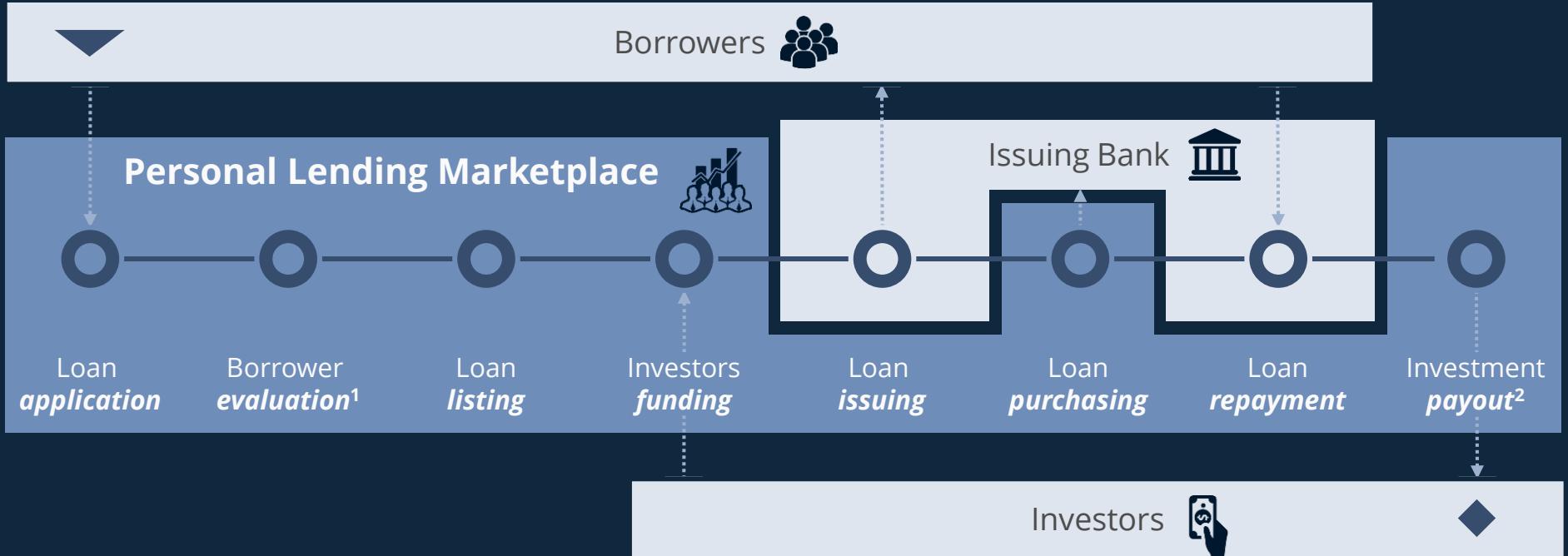
*Representative FinTech key player by segment*

Digital Payment	Business Finance	Personal Finance
 <b>amazonpayments</b> <i>Digital Commerce</i>                 	 <b>Kabbage</b> <small>LENDINGKART Think Cash, Think Lendingkart!</small>  <b>ondeck</b> <i>Crowd-lending</i>  <b>拍拍贷</b>                	                  

Source: [Statista Digital Market Outlook](#)

# Profiteers in Marketplace Lending are Borrowers, Marketplaces, Banks and Investors alike

*Generic process overview and revenue streams*



Financial Benefits for parties involved

**Borrower:**  
Loan granted

**Lending Market Place:**  
Transaction fee from Bank,  
service fee from Investors

**Issuing Bank:**  
Interest rate from  
loan issuance<sup>3</sup>

**Investor:**  
Return on investment  
from Marketplace

Source: [Statista Digital Market Outlook](#)

1: Includes determination of loan interest rates, based on a prior credit scoring

2: Including initially agreed interest rate

3: Interest rate is based on credit worthiness of marketplace and therefore lower than for individual borrowers

U.S. Mobile Payment transaction volume is expected to increase tenfold from '16 to '21

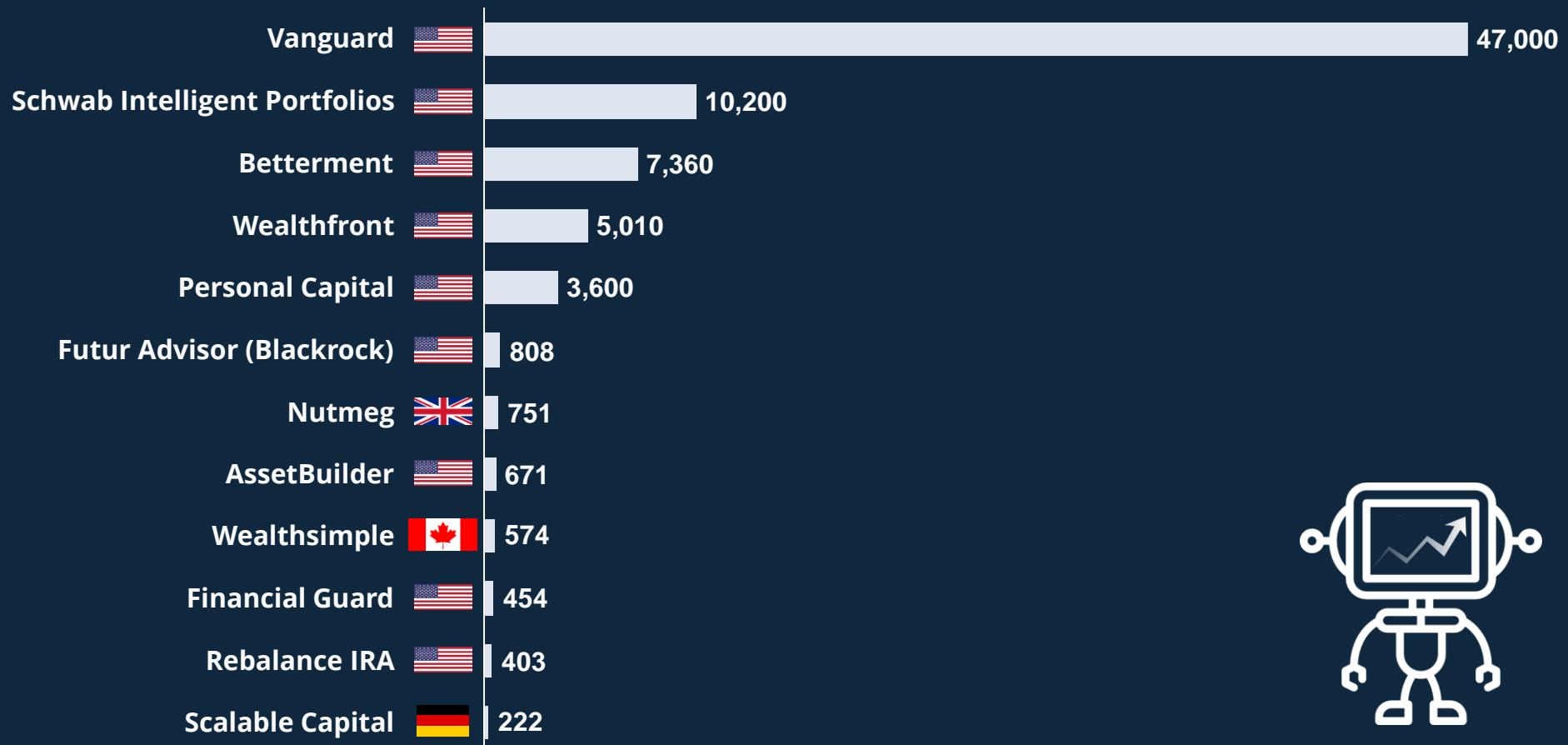
*Estimated U.S Mobile Payment transaction volume (in US\$ billion)*



Source: [Statista Digital Market Outlook](#)

Robo-Advisors are most prevalent in the U.S.; only two of the biggest advisors are from Europe

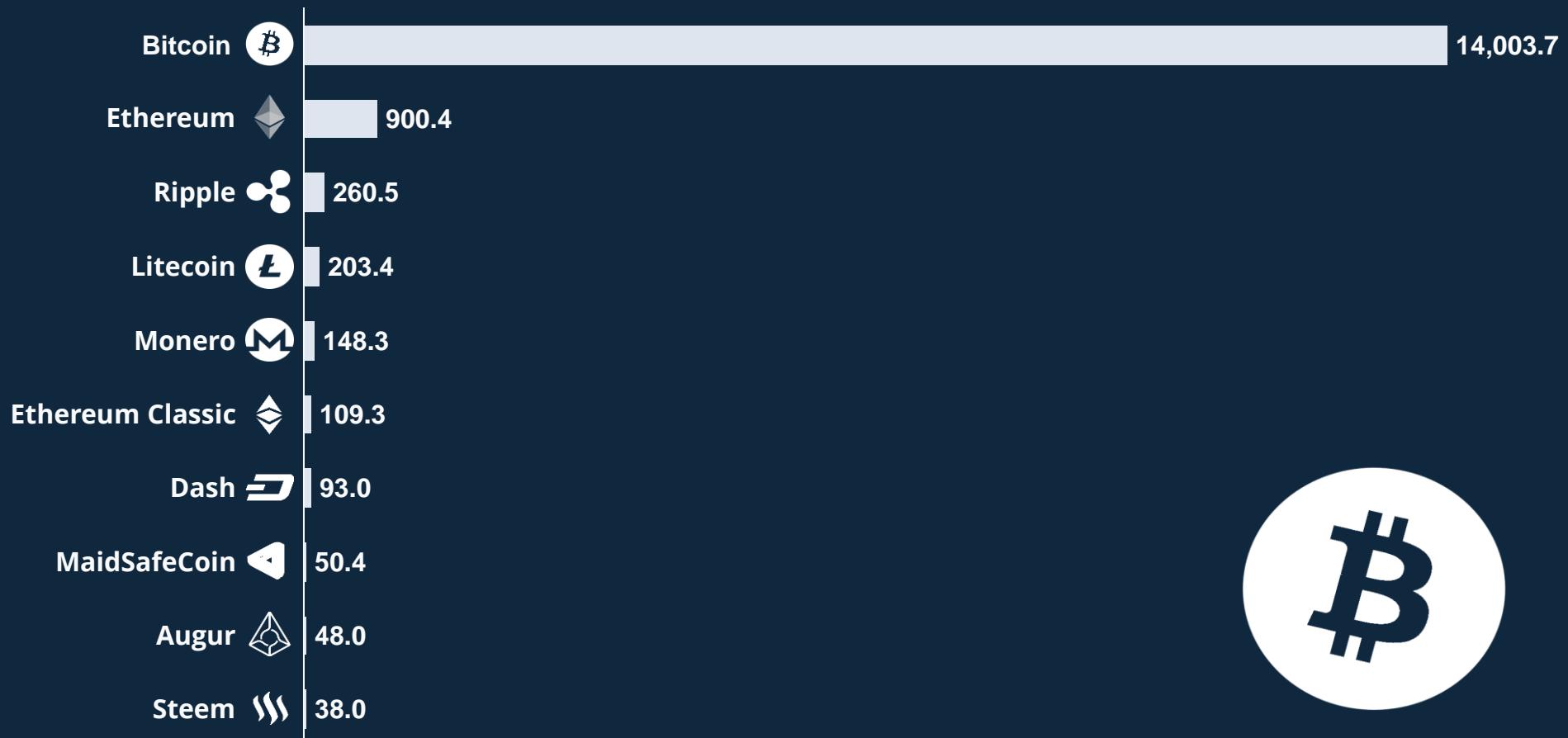
*Top Robo-Advisors by assets under management (in US\$ million)*



**Sources:** Statista estimates based on company information, Press Releases, Graphiq, Nerdwallet, CNBC, Business Insider  
Information based on latest available data, as of February 2017. We do not claim that the information provided is complete.

Bitcoin remains the largest crypto-currency with a market cap of more than US\$14 billion

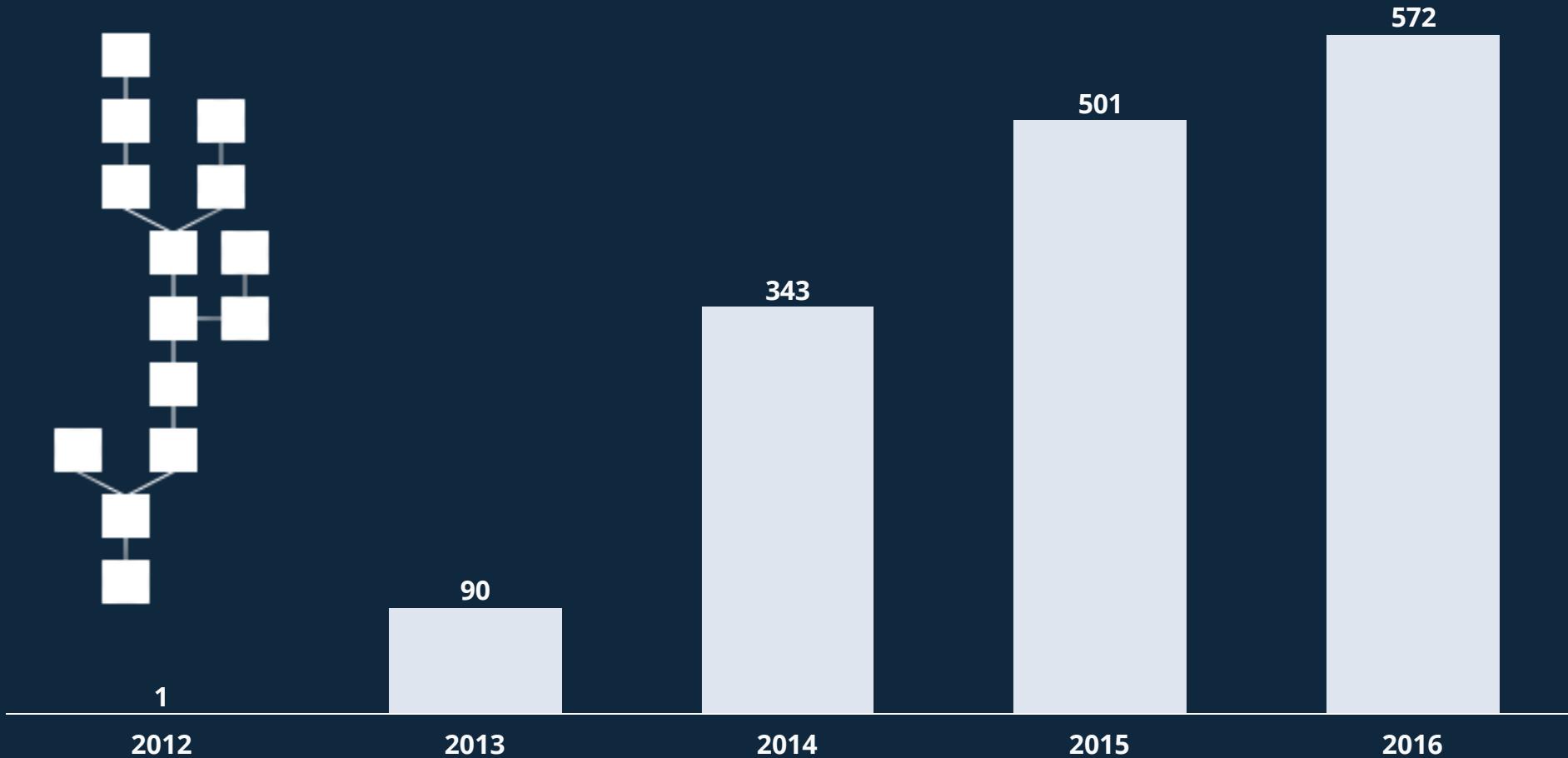
*Market caps of the ten largest crypto-currency markets (in US\$ million<sup>1</sup>)*



source: CoinMarketCap  
1: as of January 16th, 2017

In 5 years, Bitcoin & Blockchain start-up funding increased from US\$1m to over US\$570m

*Bitcoin & Blockchain funding and investment of start-ups (in US\$ million)*



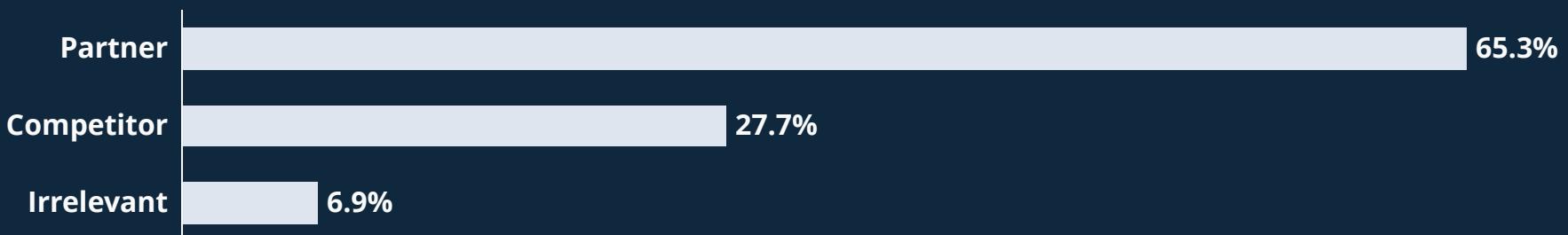
source: CB Insights

# If you can't beat the FinTechs, join them

## *No. of major bank investments in VC-backed FinTechs (Q3-'15 – Q3-'16)*



## *Competitor, partner or irrelevant? How banking executive view Fintech firms<sup>1</sup>*



**Sources:** KPMG, CB Insights, Capgemini

1: Worldwide survey; 2016

# How FinTech is reshaping the financial world

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# Digital Advertising

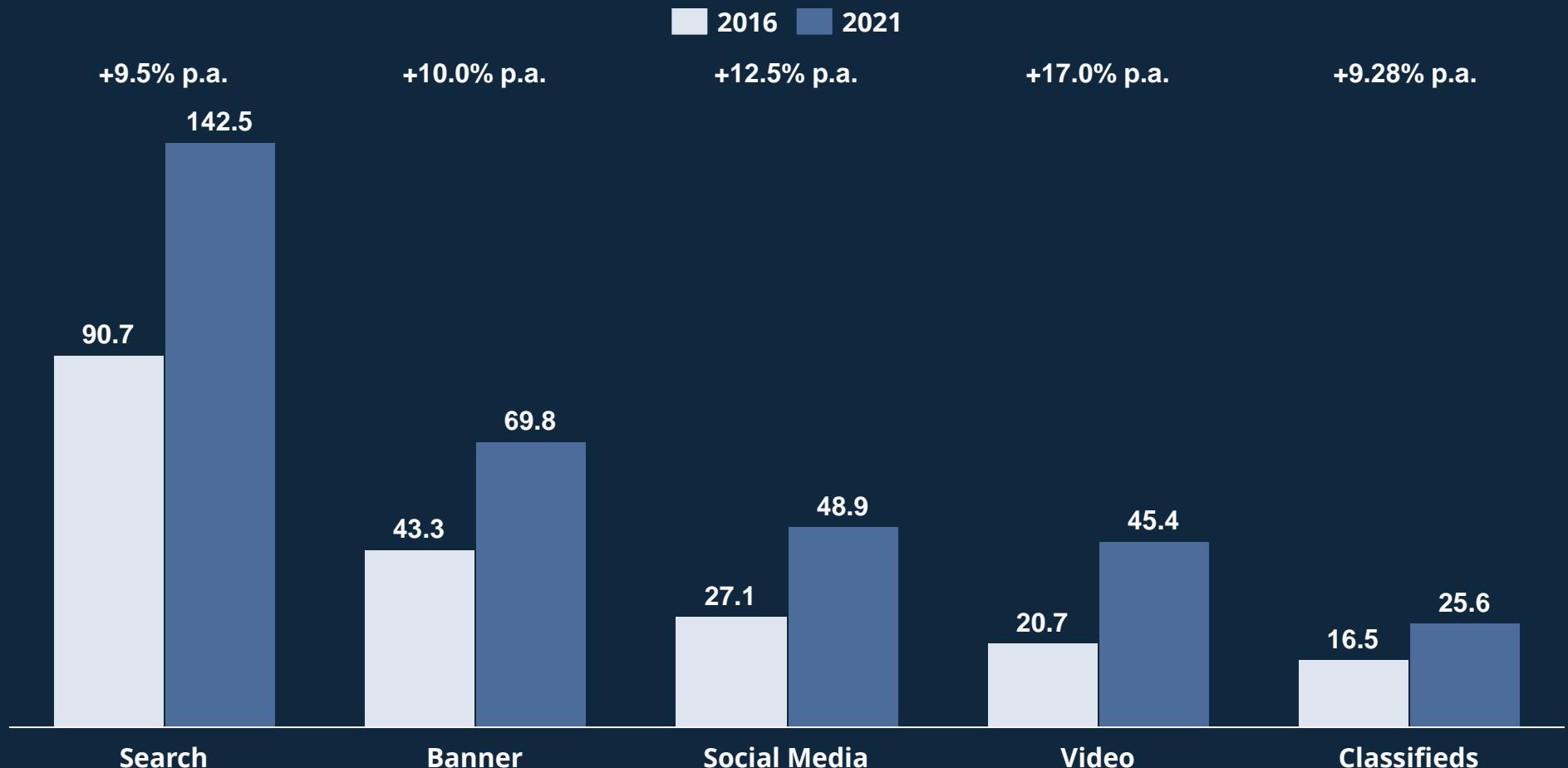
A black and white photograph of a man from the chest up. He is wearing a dark suit jacket over a light-colored dress shirt with a dark bow tie. He is looking down at a smartphone held in his hands. A silver-toned wristwatch is visible on his left wrist. The background is blurred.

US\$935.71

The most expensive keyword for **Google AdSense** (best mesothelioma lawyer) was closing in on a truly incredible cost of US\$1,000 per click in March 2016.

# Digital Ads are expected to grow across all categories, with Search Ads taking the top spot

*Global<sup>1</sup> digital advertising revenue forecast (in US\$ billion)*



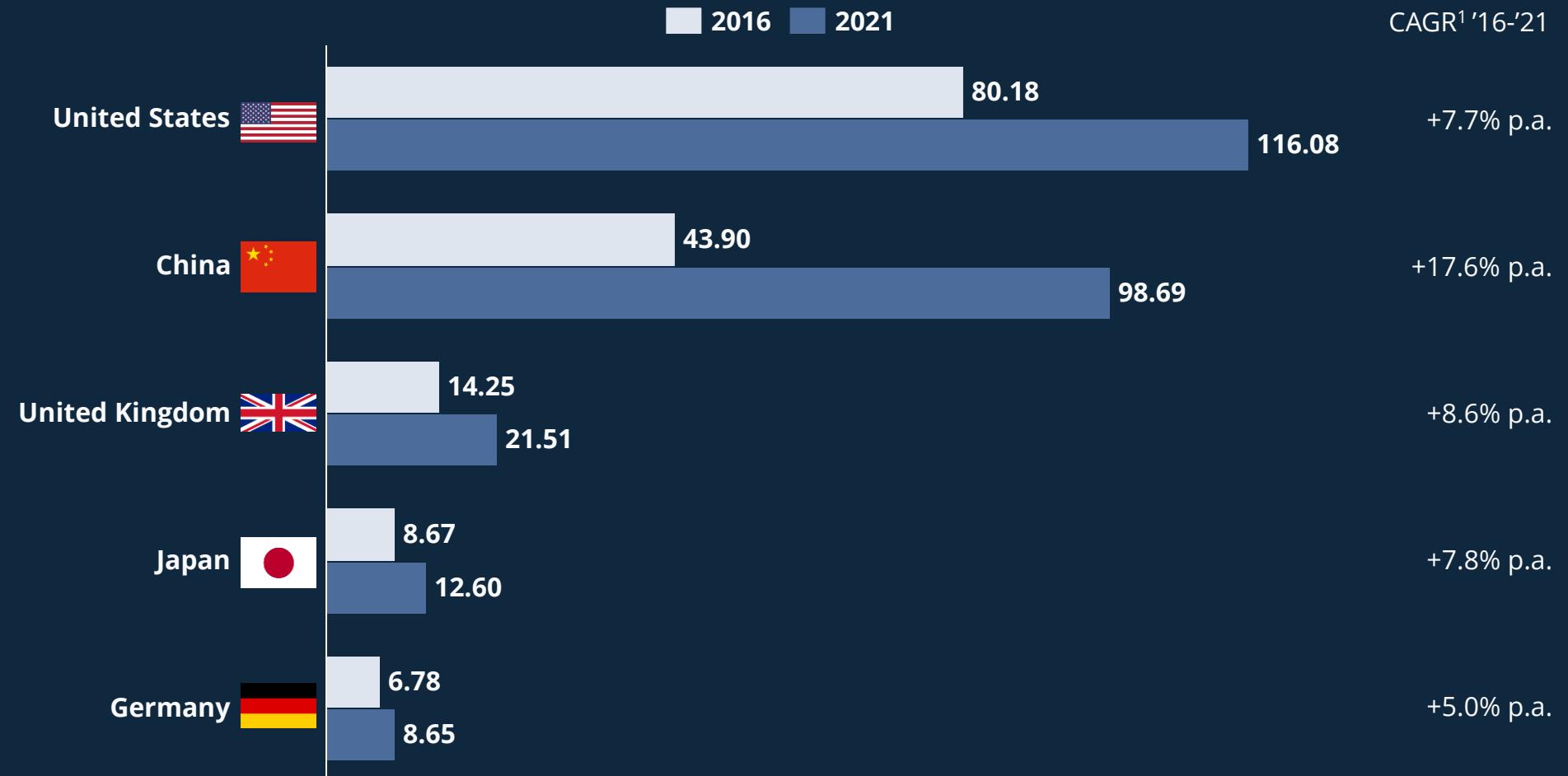
Source: [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

# Digital Advertising revenues in China are expected to more than double by 2021

*Total Advertising revenue by region (in US\$ billion)*

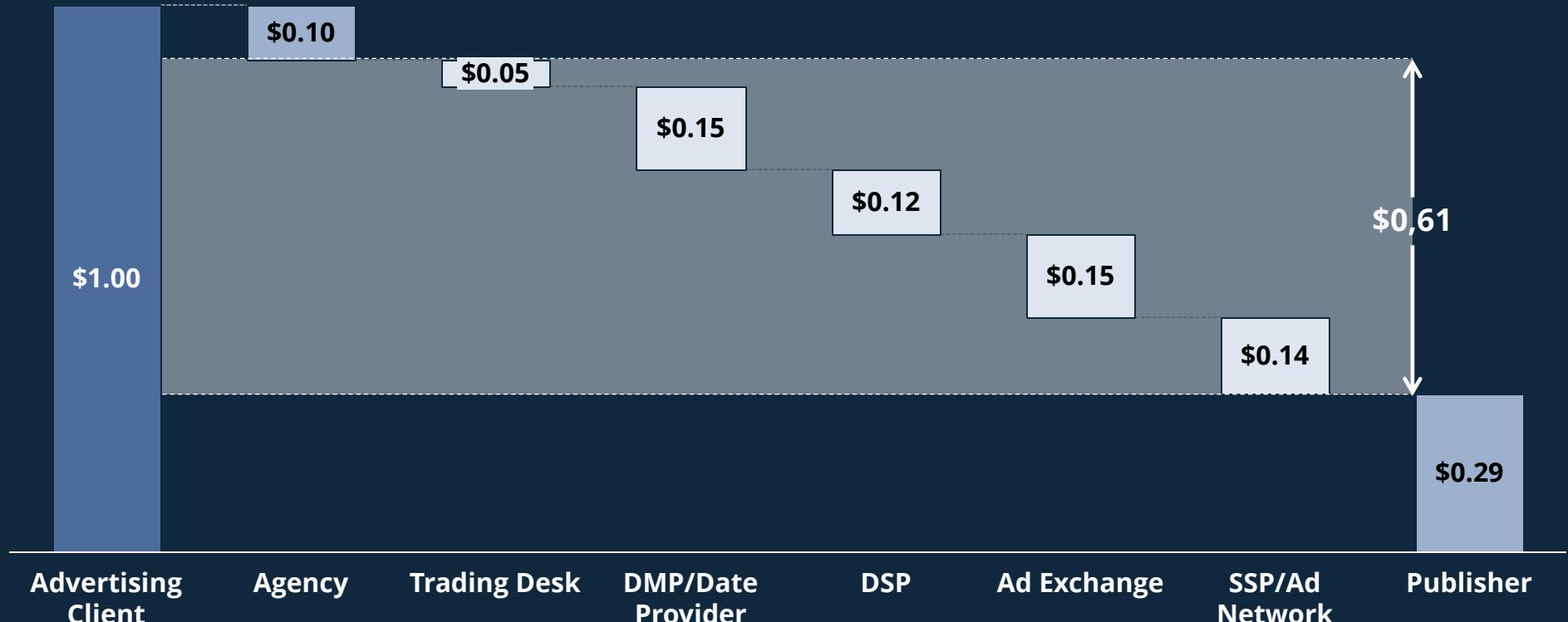


Source: Statista Digital Market Outlook

1: CAGR: Compound Annual Growth Rate

# In programmatic advertising 60% of the budget can be allocated to service contractors

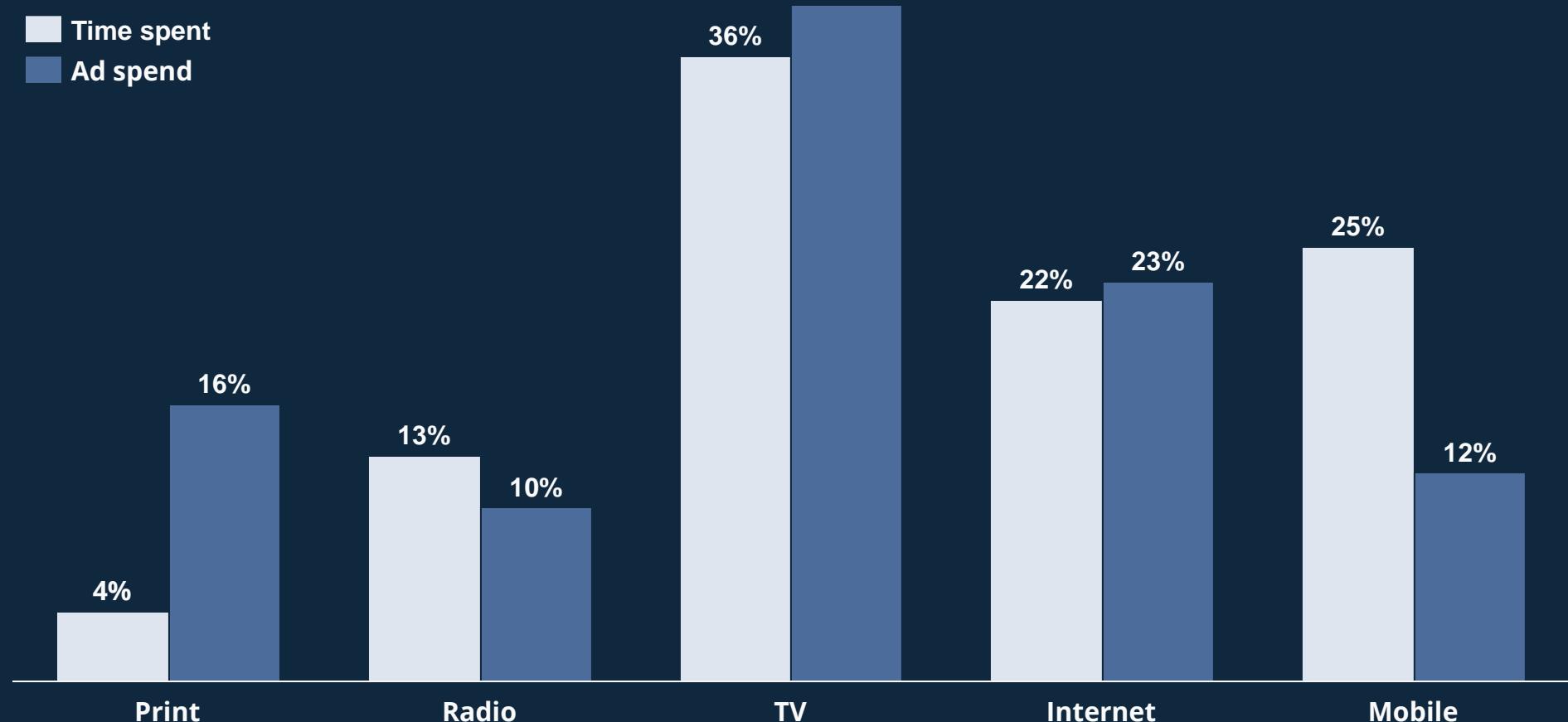
*Allocation of US\$1 in programmatic advertising*



Source: IHS Markit 2016, interviews with over 100 market players  
Note: share of DMP/Date Provider and DSP might be slightly higher

# There is a significant 'ad spend gap' for mobile

*Percent of time spent by consumers with media & percent of ad spend allocate to media in the U.S. 2015*

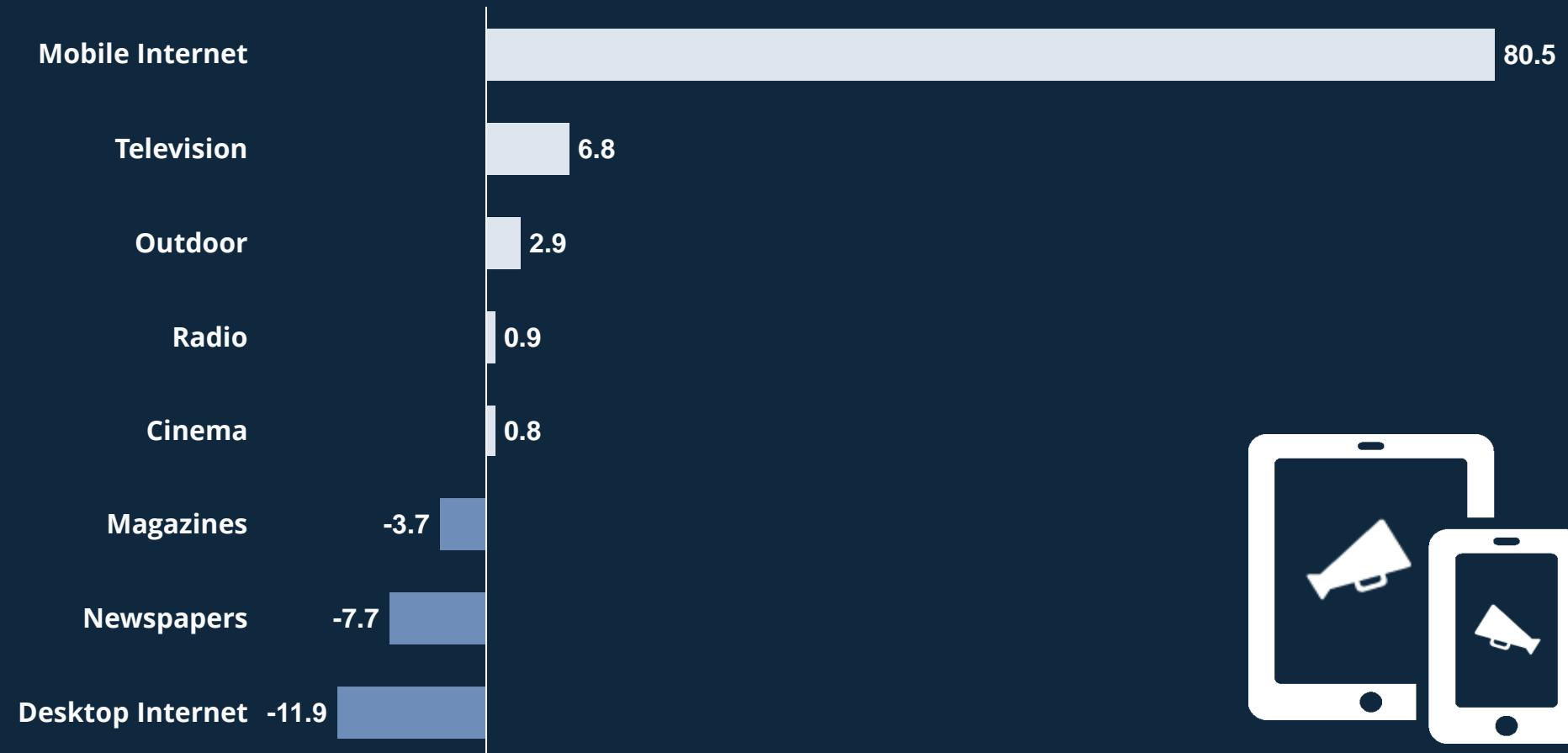


**source:** KPCB

Note: Print includes newspaper and magazine. Internet includes desk top, laptop & other connected devices;  
Excludes out of home, video games, and cinema advertising.

# Mobile Ad spending will continue to boom over the next three years

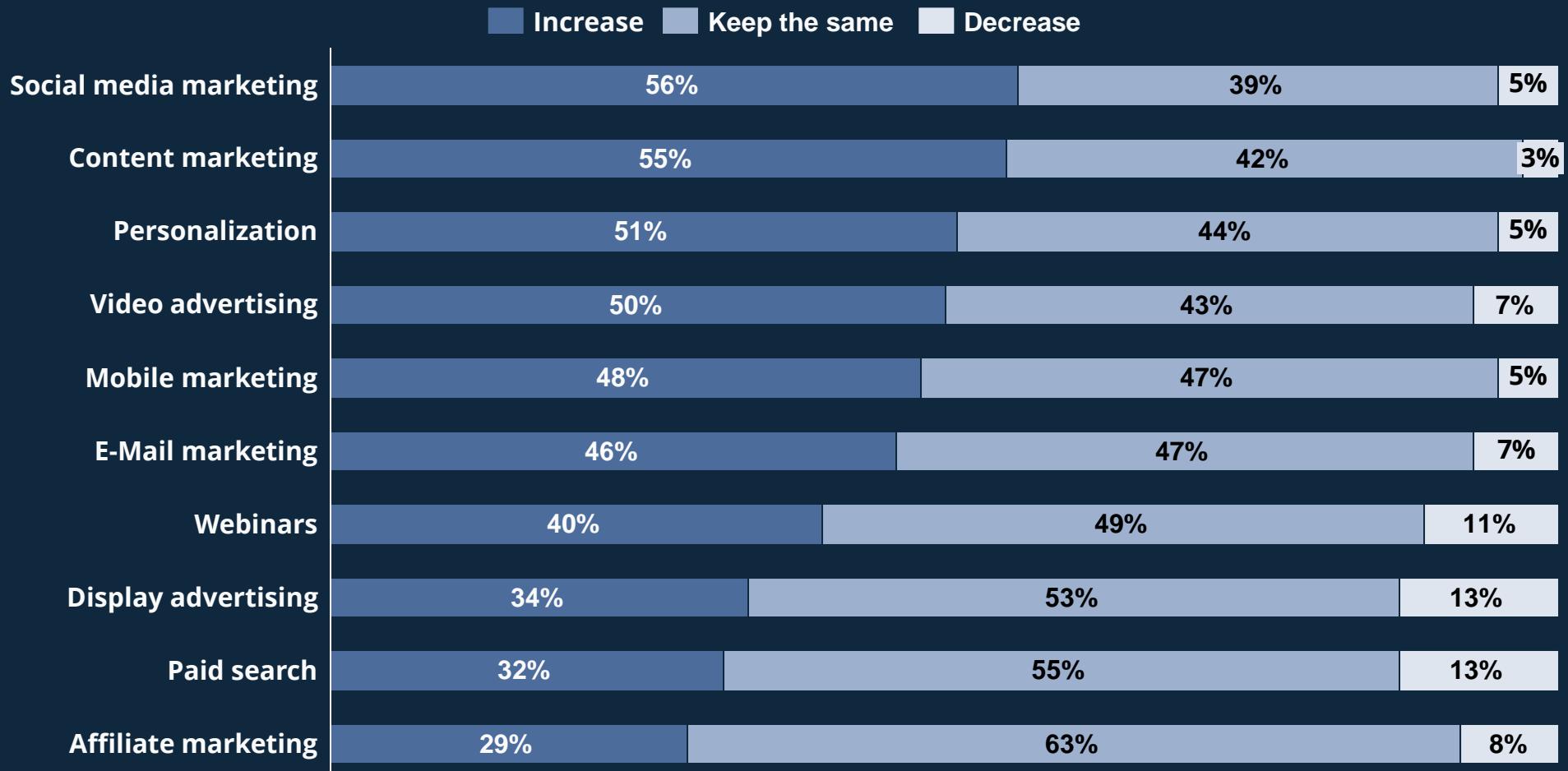
*Estimated change in advertising spending between '16 - '19 in US\$bn p.a.*



source: Zenith Optimedia

# Social media & content marketing are top priorities for marketers

*Digital marketing budget plans for 2017 (in % of respondents)<sup>1</sup>*

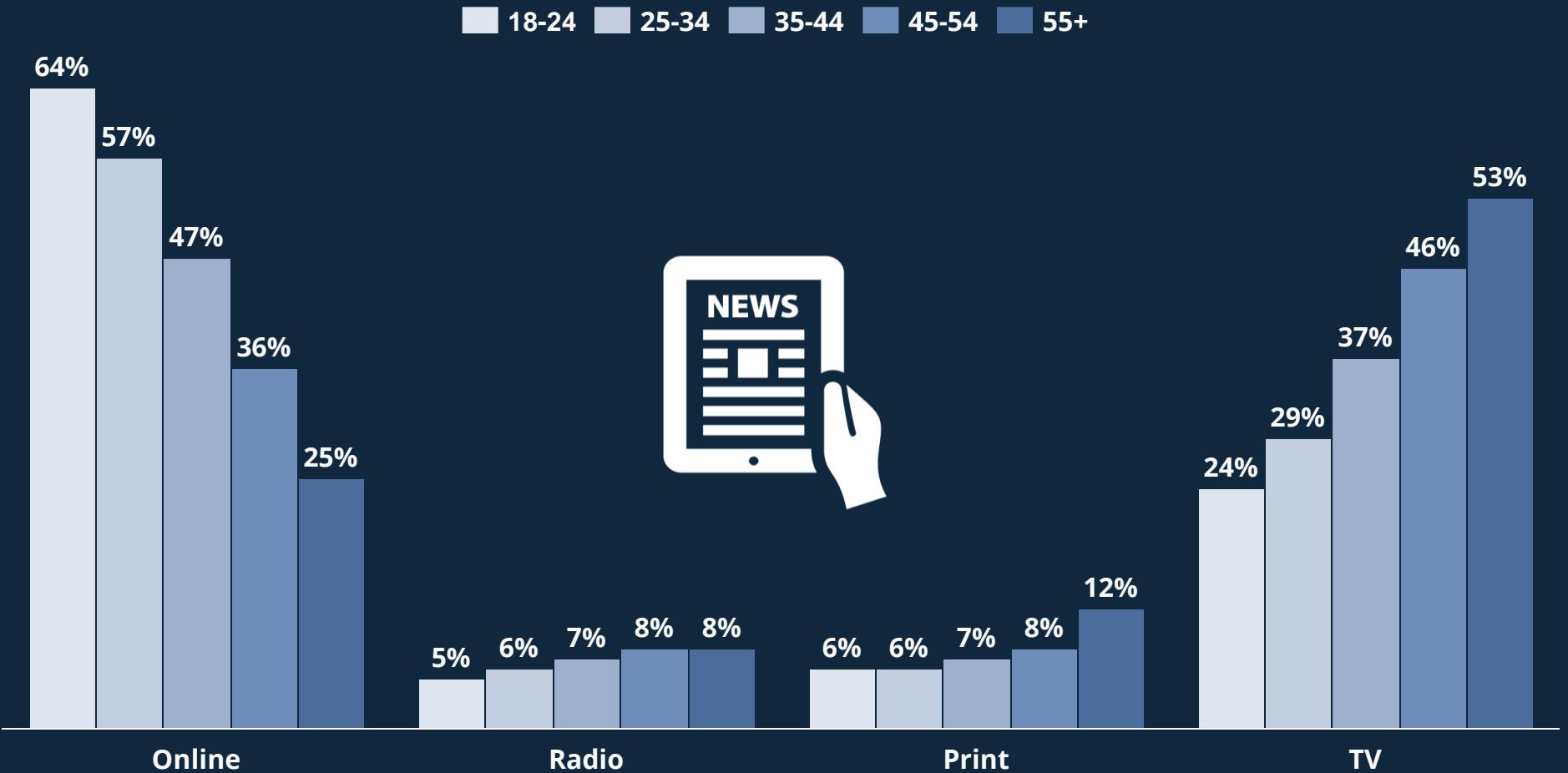


source: Econsultancy, Adobe

1: based on a survey of 3,347 marketing professionals around the world

# There is a clear generational divide in news consumption

*Main news source by age group*

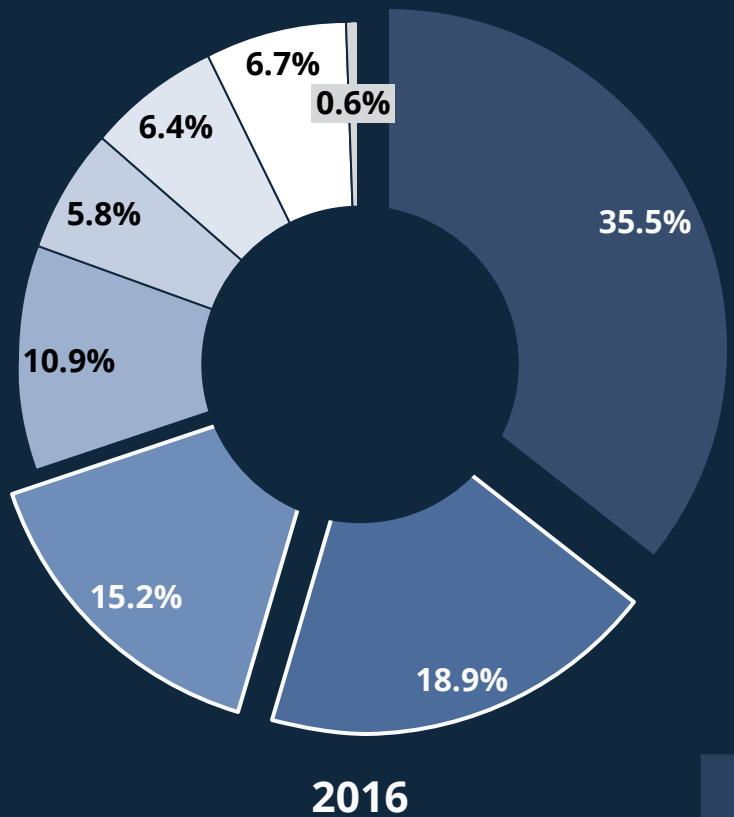


**source:** Reuters Institute for the Study of Journalism

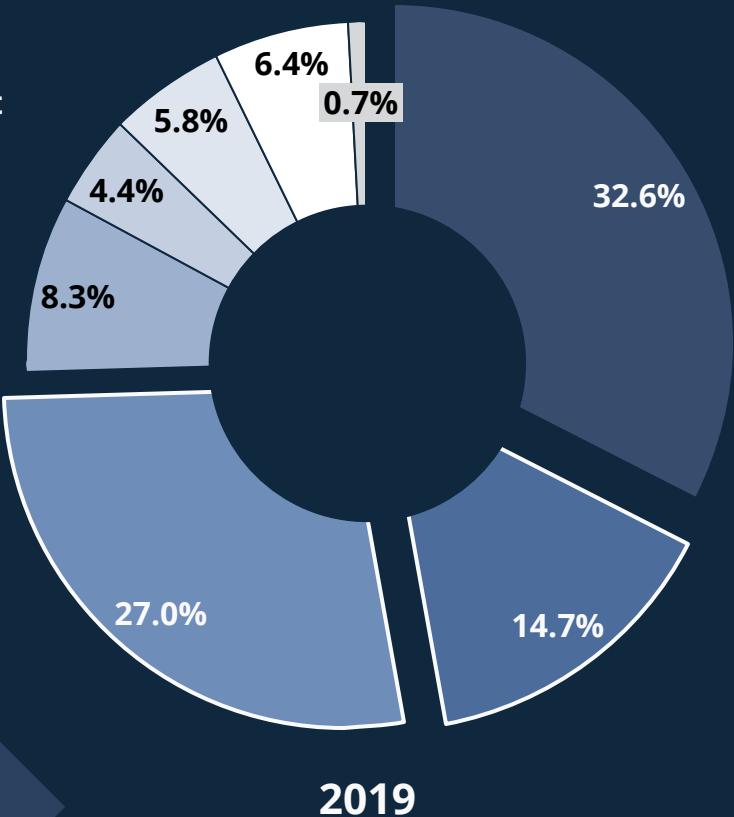
Note: Based on a survey of 52,225 news consumers across 26 countries; numbers may not add up to 100% due to rounding

2019 will be a paradigm change: mobile/desktop internet ad spend is expected to overtake TV

*Share of global ad spend by medium (in percentage)*



- Television
- Desktop Internet
- Mobile Internet
- Newspapers
- Magazines
- Radio
- Outdoor
- Cinema



Television:  
↓ - 2.9% points

Desktop Internet:  
↓ - 4.2% points

Mobile Internet:  
↑ +11.8% points

# The future of advertising is 'fewer, better ads'

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- › Video Advertising
- › Social Media Advertising
- › Search Advertising
- › Online Classifieds

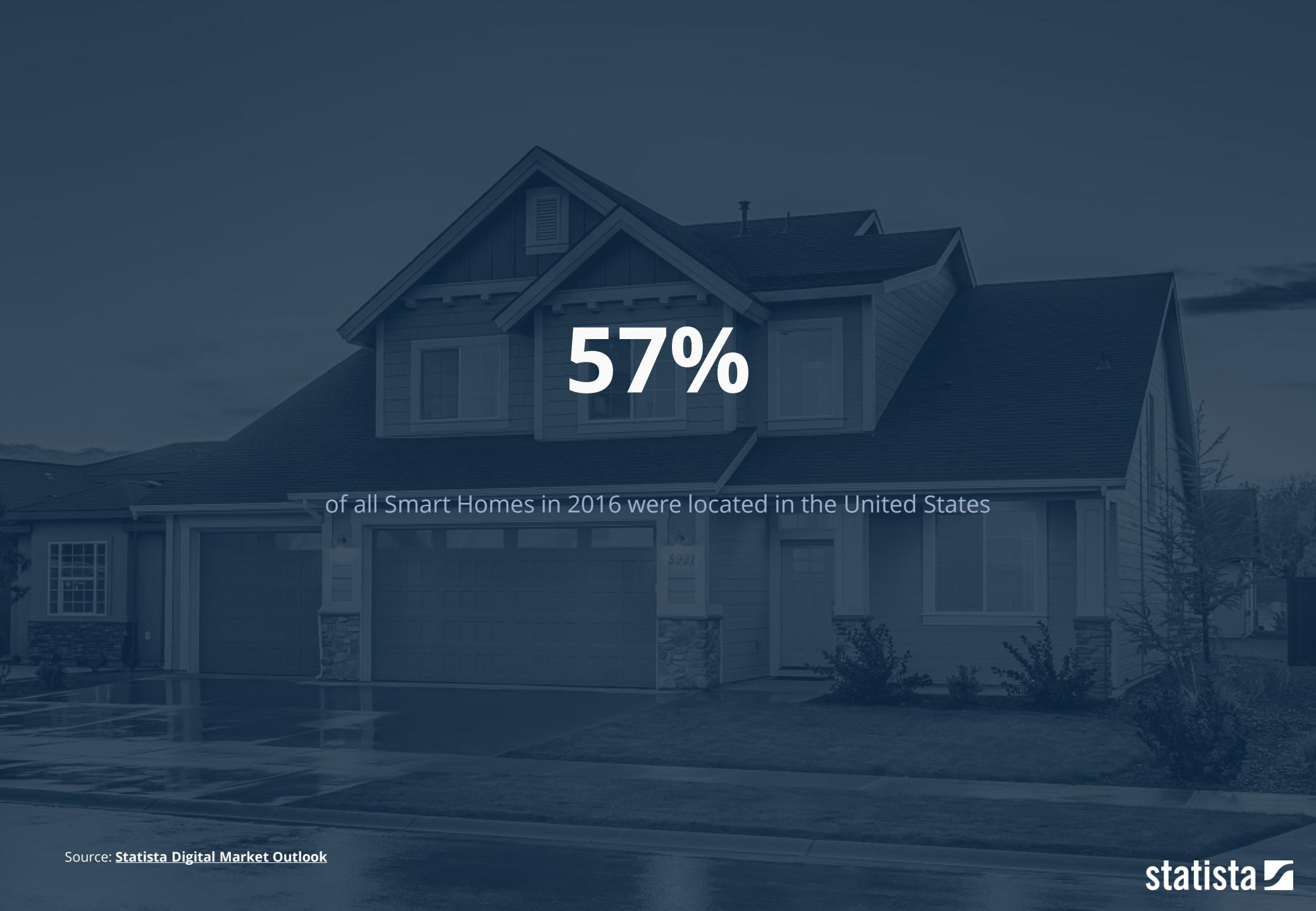
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# Smart Home

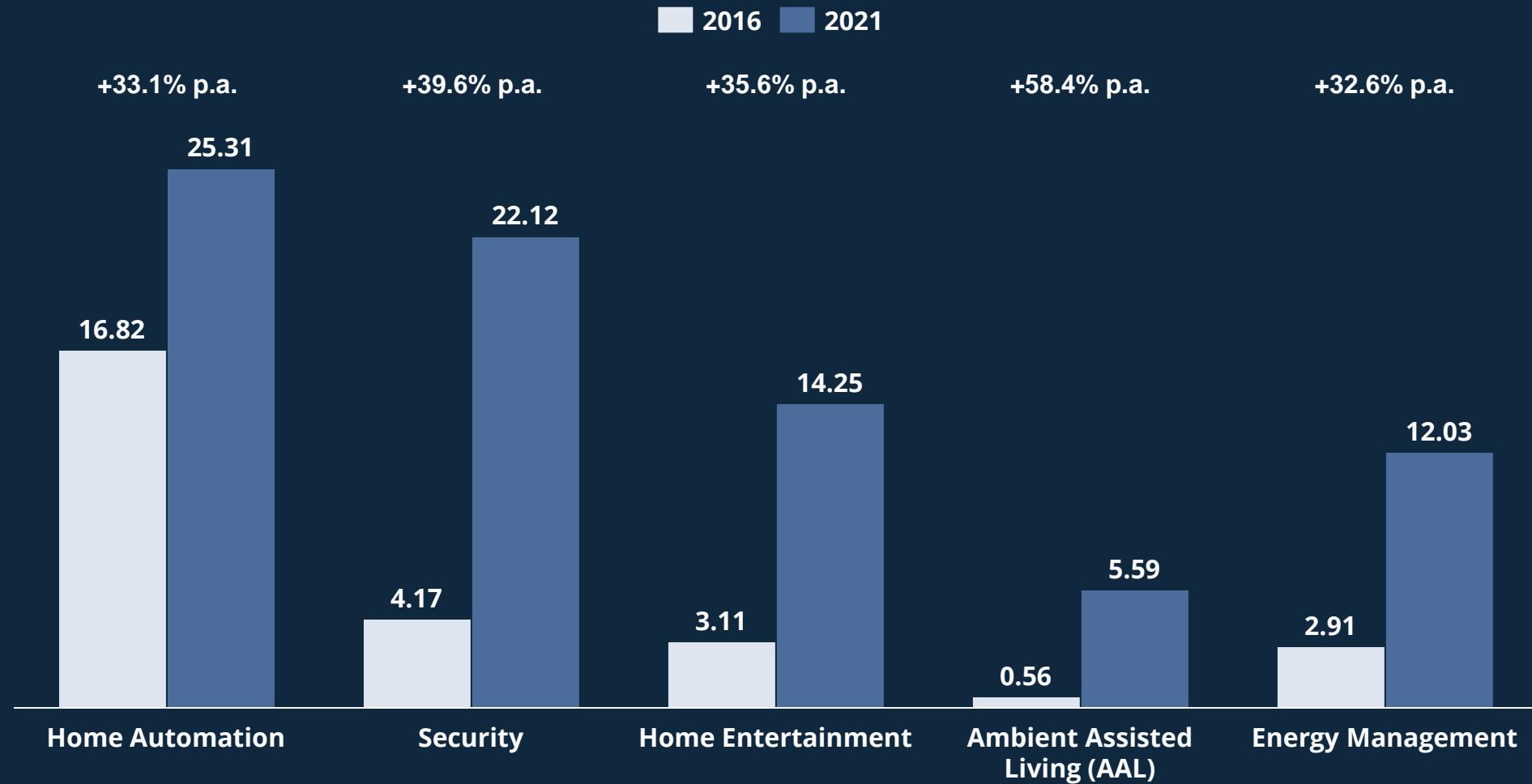
A black and white photograph of a row of modern, single-story houses. The houses have dark roofs, light-colored horizontal siding, and large windows. One house in the center has a garage door and a small stone pillar next to it. The houses are set back from a paved street with a sidewalk.

**57%**

of all Smart Homes in 2016 were located in the United States

# The global Smart Home market will more than quadruple by 2021

*Global<sup>1</sup> Smart Home Revenue (in US\$bn) and CAGR<sup>2</sup> 16-21 by segment*



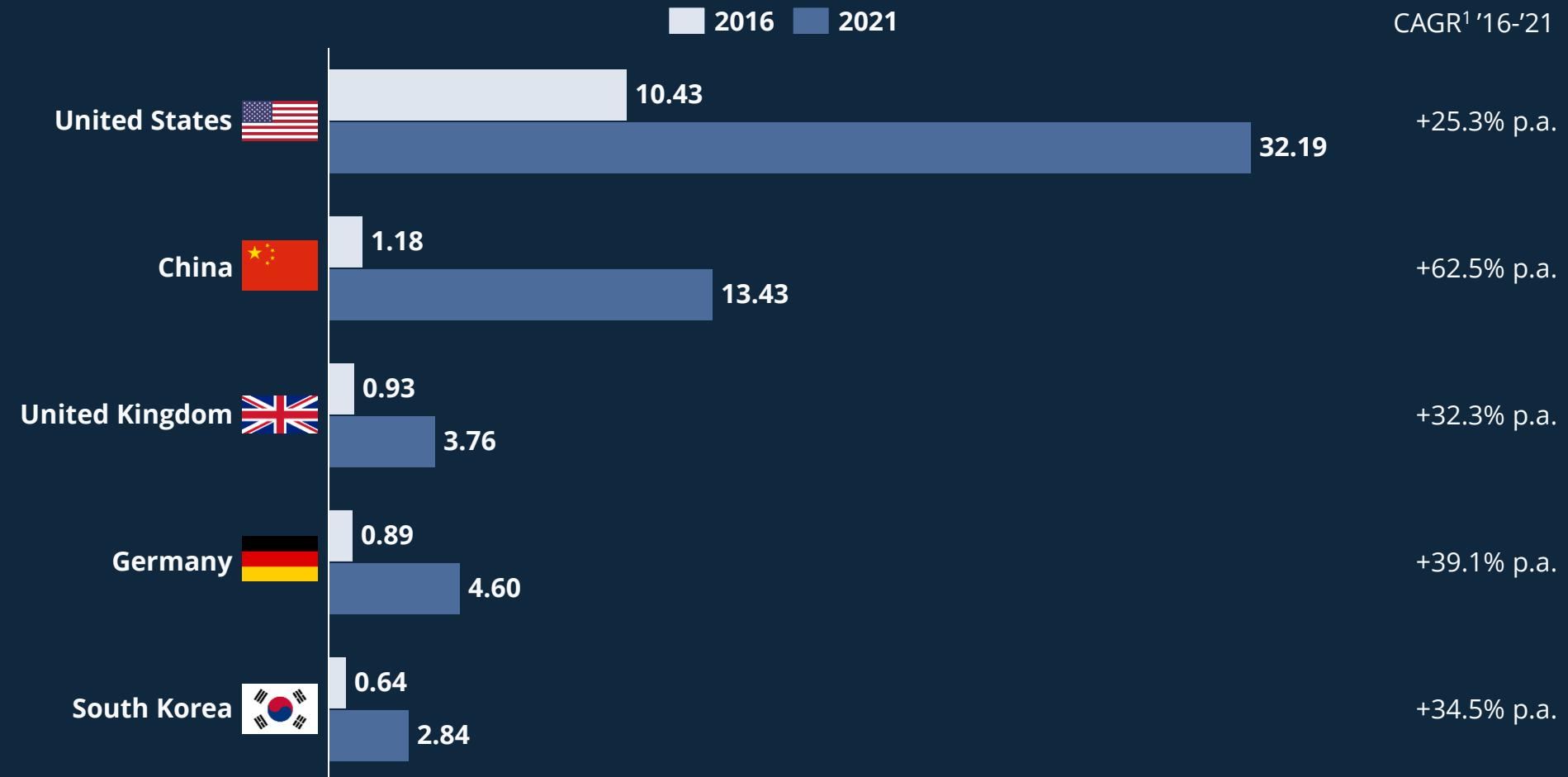
Source: [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

# Smart Home market development is most dynamic in China and Germany

*Total Smart Home revenue by region (in US\$ billion)*



Source: Statista Digital Market Outlook

1: CAGR: Compound Annual Growth Rate

# The Smart Home ecosystem consists of many intersections and entry points

## *Illustration of the Smart Home ecosystem and value chain*

*Supply side*



Manufacturer  
Offers devices



Service provider  
Offers control software/  
platform, connectivity,  
additional services

*Retail*



Websites  
Owned or third party



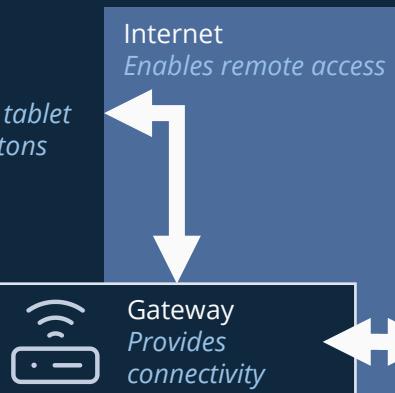
Stores  
Owned or third party



Technicians  
Sells, installs and  
maintains system

*Demand side/ Customer ecosystem*

Control devices  
e.g. Smartphone, tablet  
or connected buttons



Smart Home devices  
Sensors/ actuators to  
automate the home

Platform  
Software to  
control  
devices

↔: Data

*Devices and/ or services*

*data and/ or revenue*

# The Smart Home company landscape comprises all kinds of origins

*Key players by segment<sup>1</sup> and integration potential*

	Generalists and Home Automation	Security	Home Entertainment	Ambient Assisted Living (AAL)	Energy Management
<b>Dedicated Smart Home companies</b>	         	     	   	 	   
<b>Players entering the market from foreign industries</b>	       	  	   	  	  
<b>Integration potential<sup>2</sup></b>					

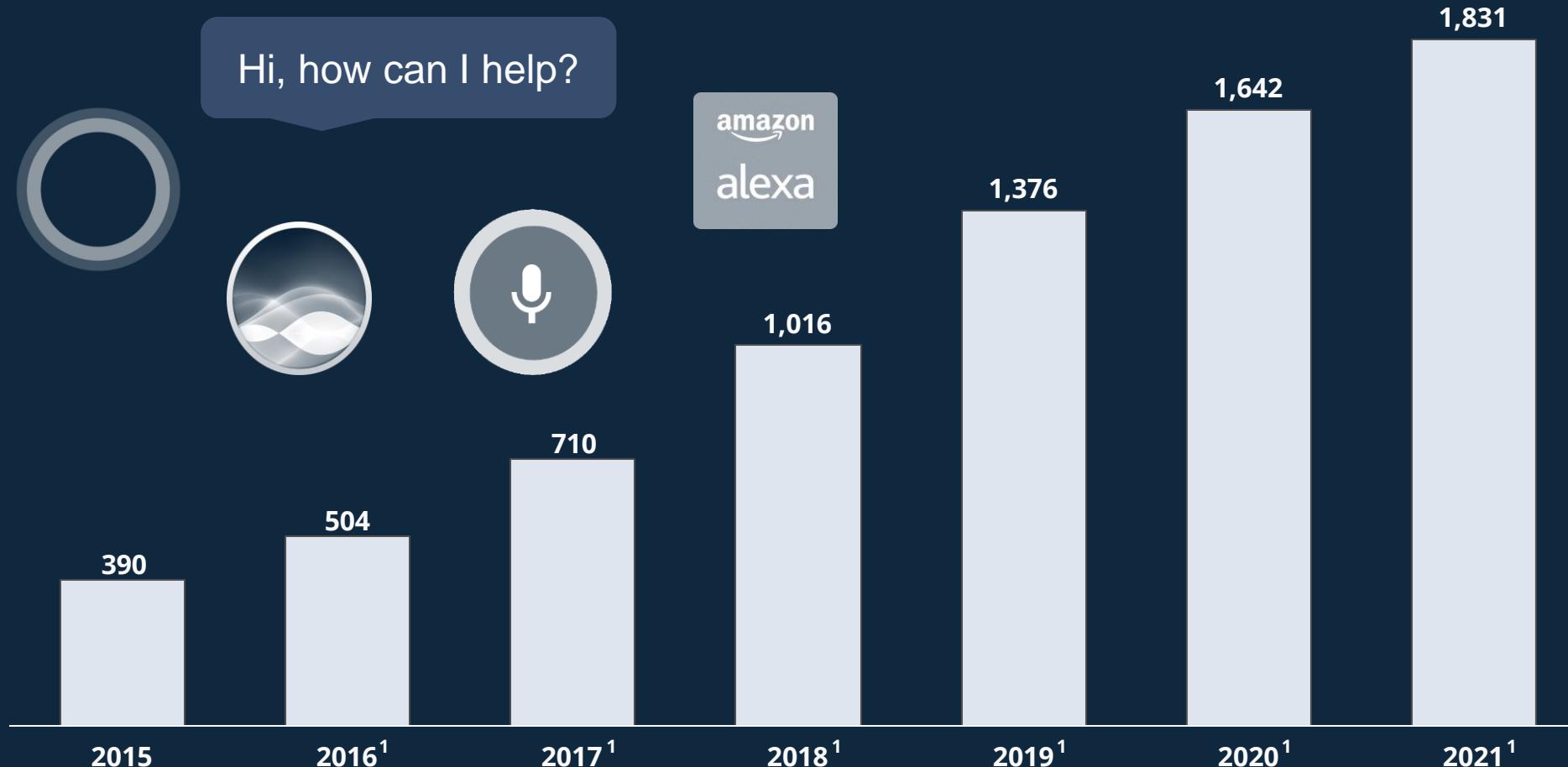
Source: Statista Digital Market Outlook

1: Using the most relevant segment as most companies are active in multiple product segments

2: Estimate; considers the potential for integration with devices from other segments

# Digital Assistants will become increasingly more common in people's homes

*Estimated global number of virtual digital assistant users (in mio)*

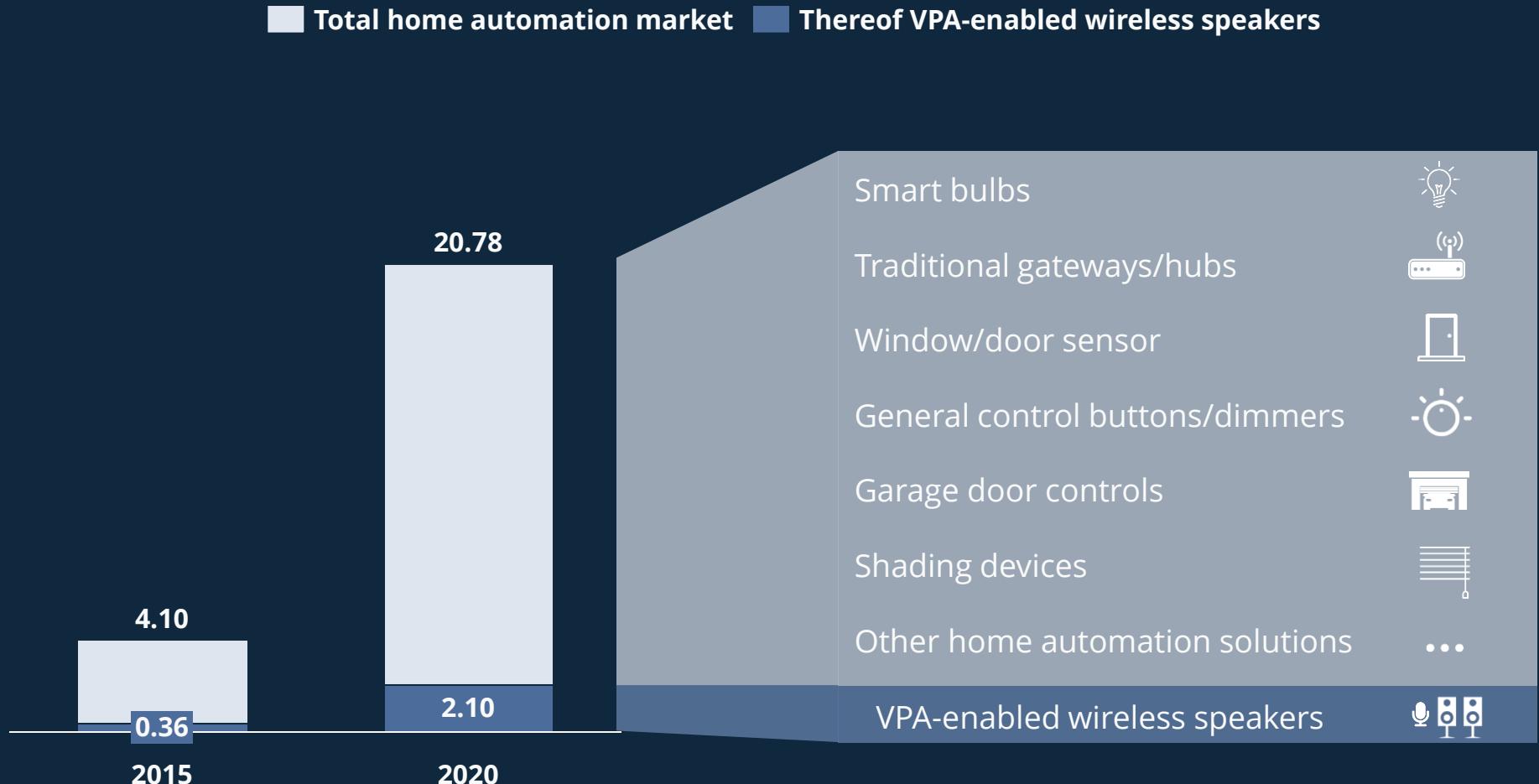


Source: **Statista Digital Market Outlook**; Tractica, 2015 to 3rd quarter 2016

1: Forecast, figures do not include business usage

# Echo & Co. will enter the Home Automation market and increase revenues fivefold by 2021

*Smart Home automation market revenue (in US\$ billion)*



Source: [Statista Digital Market Outlook](#), Gartner

# Americans are keen on Smart Home Security; could it be due to the high burglary rate?

*Domestic burglaries per 100,000 inhabitants*



290



282



196

*Smart Home security revenue per 100,000 inhabitants*



United States



United Kingdom



Germany

Source: [Statista Digital Market Outlook](#), UNODC

# Smart Home = Connected devices + integration

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- › Home Entertainment
- › Ambient Assisted Living
- › Energy Management

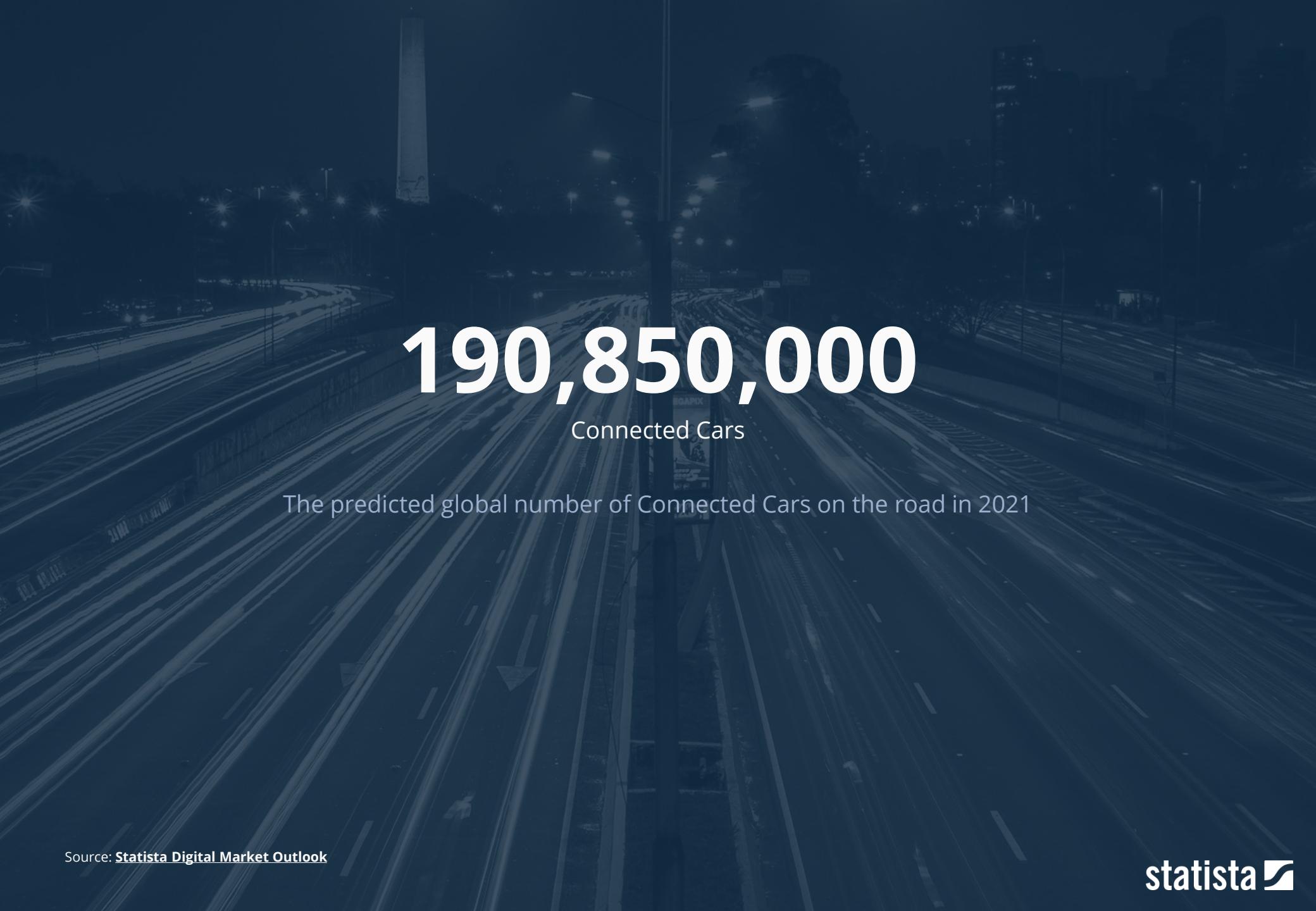
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# Connected Car



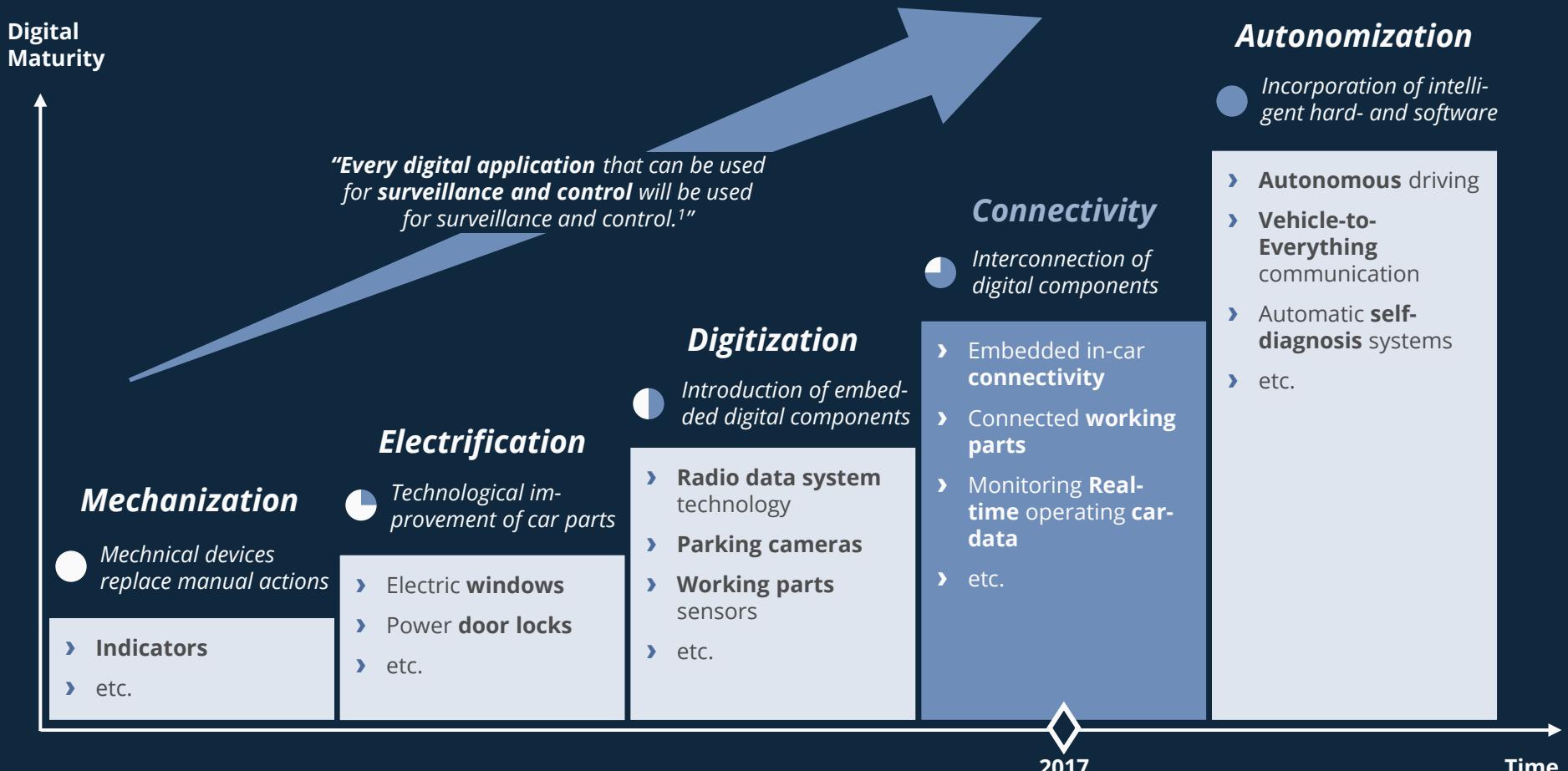
**190,850,000**

Connected Cars

The predicted global number of Connected Cars on the road in 2021

# Widespread connectivity is a prerequisite for the development of self-driving cars

*Gradual automotive development towards autonomous vehicles*



Source: [Statista Digital Market Outlook](#)

1: Following Zuboff's Laws about the implications of information technology  
Note: Width and height of bars does not correspond to the actual timeline or digital maturity

ABC Mass market focus  
Digital maturity level

# Connected Car service subscription revenues are still falling short of OEM's expectations

*Global<sup>1</sup> Connected Car revenue in US\$ billion and CAGR<sup>2</sup> by segment*

■ 2016 ■ 2021

+37.1% p.a.

71.82



+58.5.4% p.a.

14.83

+49.4% p.a.

7.91

Connected Hardware

Vehicel Services

Infotainment Services

0.19

1.92

1.06

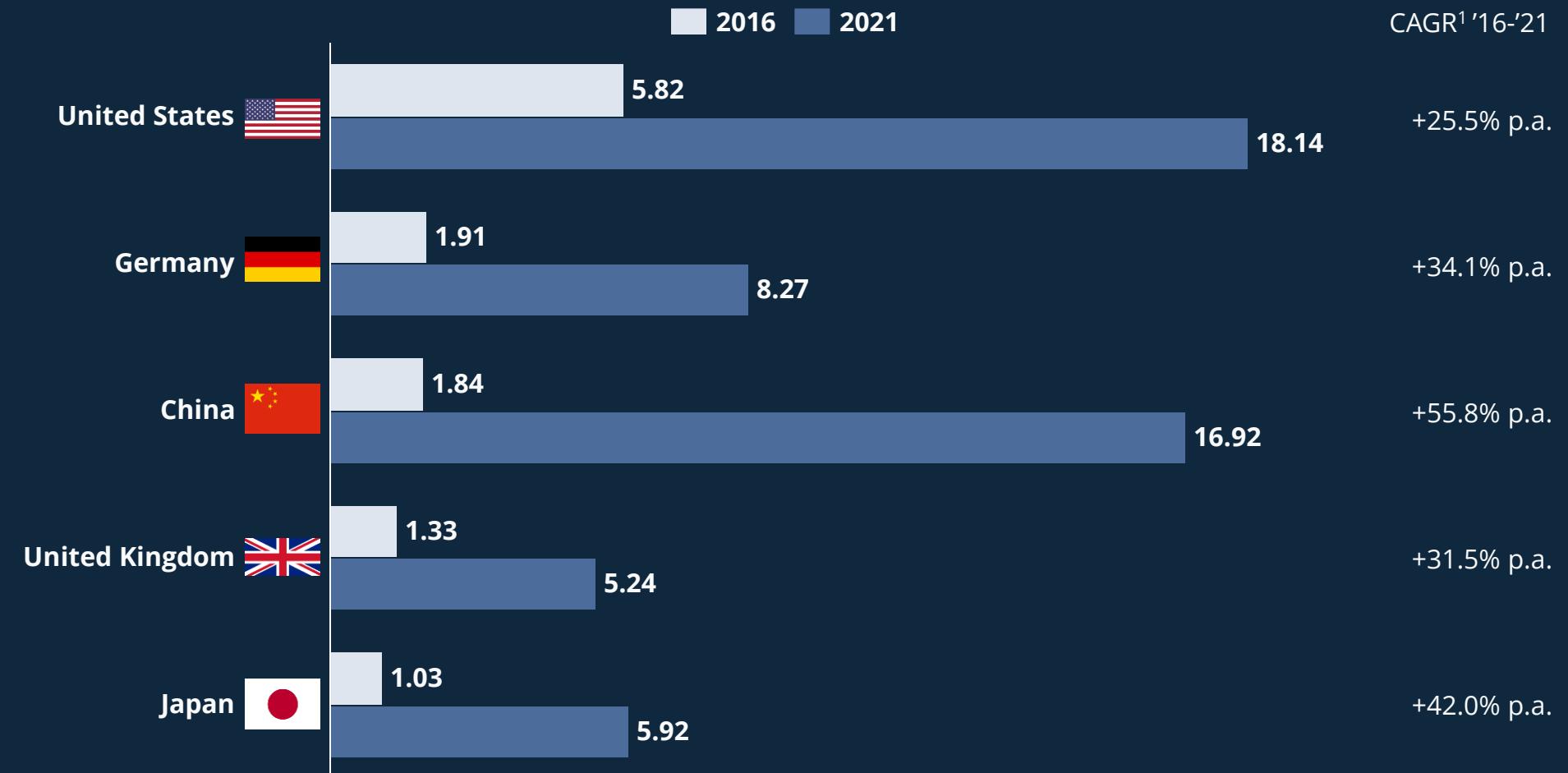
Source: **Statista Digital Market Outlook**

1: Only includes countries listed in the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate/ average growth rate per year

A pioneer in integrated connectivity, the U.S. will stay the biggest Connected Car market by 2021

*Total Connected Car revenue in US\$ billion by region*



Source: [Statista Digital Market Outlook](#)

1: CAGR: Compound Annual Growth Rate

# Connectivity-related service packages are now available from most OEMs

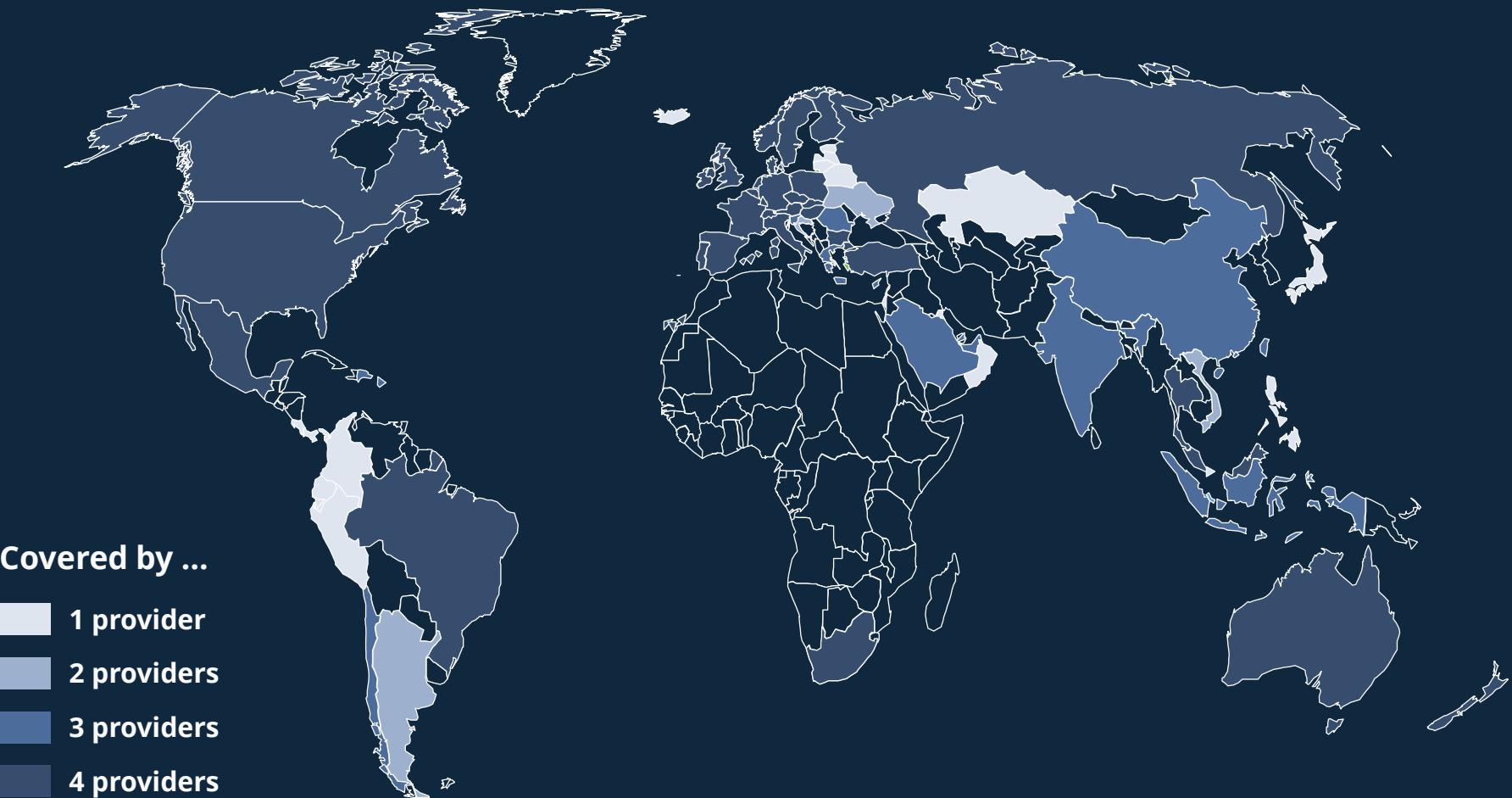
*Key players and their digital service programs<sup>1</sup>*

	Europe	North America	Asia	
Manufacturer	 <b>Audi Connect</b>  <b>ConnectedDrive</b>  <b>Porsche Connect</b>  <b>Sensus Connect</b>  <b>R-Link</b>	 <b>Škoda Connect</b>  <b>MyCitroën</b>  <b>Peugeot Connect</b>  <b>UConnect</b>  <b>MercedesMe</b>	 <b>OnStar</b>  <b>UConnect</b>  <b>OnStar</b>  <b>UConnect</b>  <b>OnStar</b>  <b>UConnect</b>  <b>SYNC3</b>  <b>EVE</b>	 <b>UVO</b>  <b>Nissan Connect</b>  <b>Honda Connect</b>  <b>STARLINK</b>  <b>MZD Connect</b>  <b>InTouch / Connection</b>  <b>Connect World</b>

Source: [Statista Digital Market Outlook](#)

# Real-time traffic information is already widespread across the Western world and Asia

*Availability of real-time traffic information by the four largest providers<sup>1</sup>*

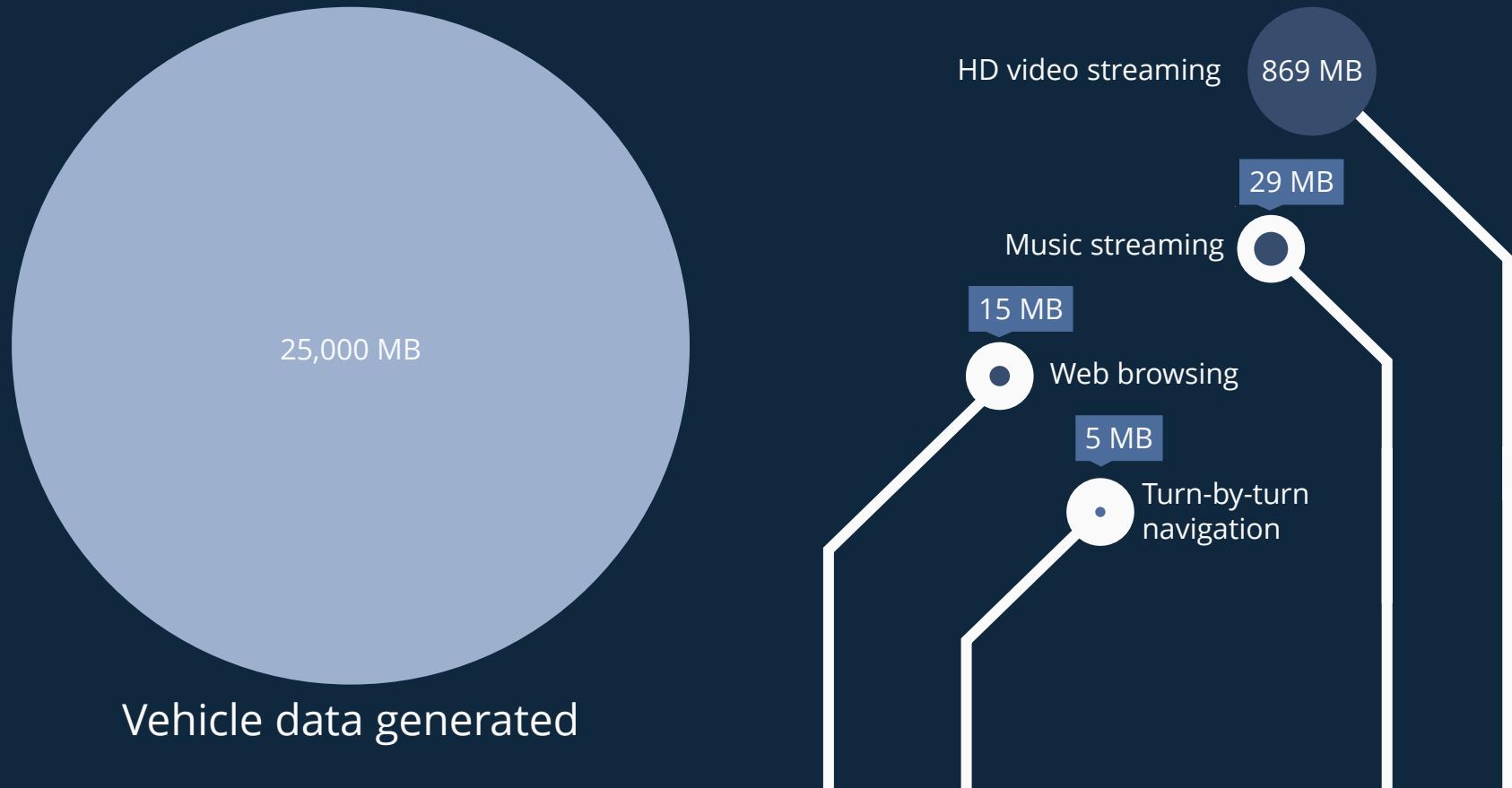


**source:** Company Information, [Statista Digital Market Outlook](#)

1: the four providers are Google (available in 61 countries), Here (52), TomTom (52) and Apple (46)

# Operating data collected from connected cars generates both potential and challenges

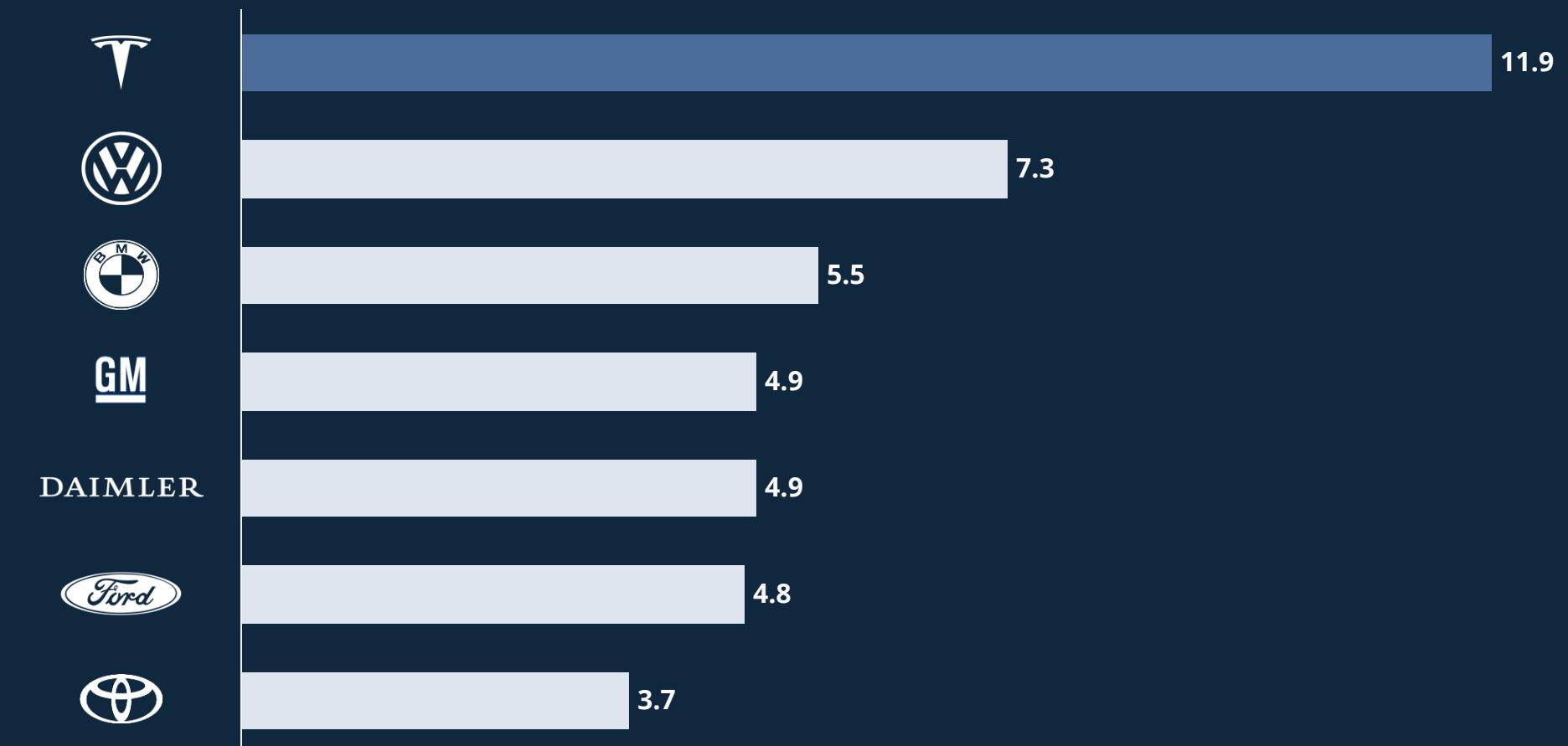
*Data generate per hour by Connected Cars compared to online activities*



Sources: AT&T, McKinsey, Verizon

# Tesla's investment intensity in R&D is much bigger than that of VW and BMW

*R&D intensity of Tesla and selected car manufacturers in 2016<sup>1</sup>*



**Sources:** Company Information, Statista

<sup>1</sup>: R&D intensity is defined as the ratio between a company's investment in research and development and its revenue

# Monetizing vehicle data – the future for OEMs?

*Discover more of our topic-related research for Connected Car*

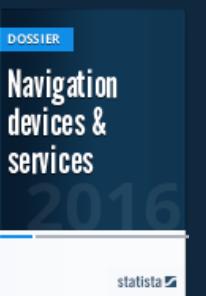


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# About the Digital Market Outlook

*9 Markets, 34 segments & 85 sub-segments*

*Details*



## e-Commerce

Fashion, Electronics & Media, Food & Personal Care, Furniture & Appliances, Toys, Hobby & DIY



## FinTech

Digital Payments, Business Finance, Personal Finance



## eServices

Event Tickets, Fitness, Dating Services, Food Delivery



## Connected Car

Connected Hardware, Vehicle Services, Infotainment Services



## eTravel

Online Travel Booking, Mobility Services



## Smart Home

Home Automation, Security, Home Entertainment, Ambient Assisted Living, Energy Management



## Digital Media

Video-on-Demand, Digital Music, Video Games, ePublishing



## Digital Advertising

Banner Ads, Video Ads, Search Ads, Social Media Ads, Classifieds

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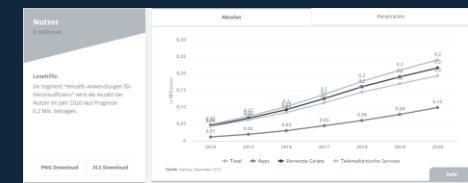
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