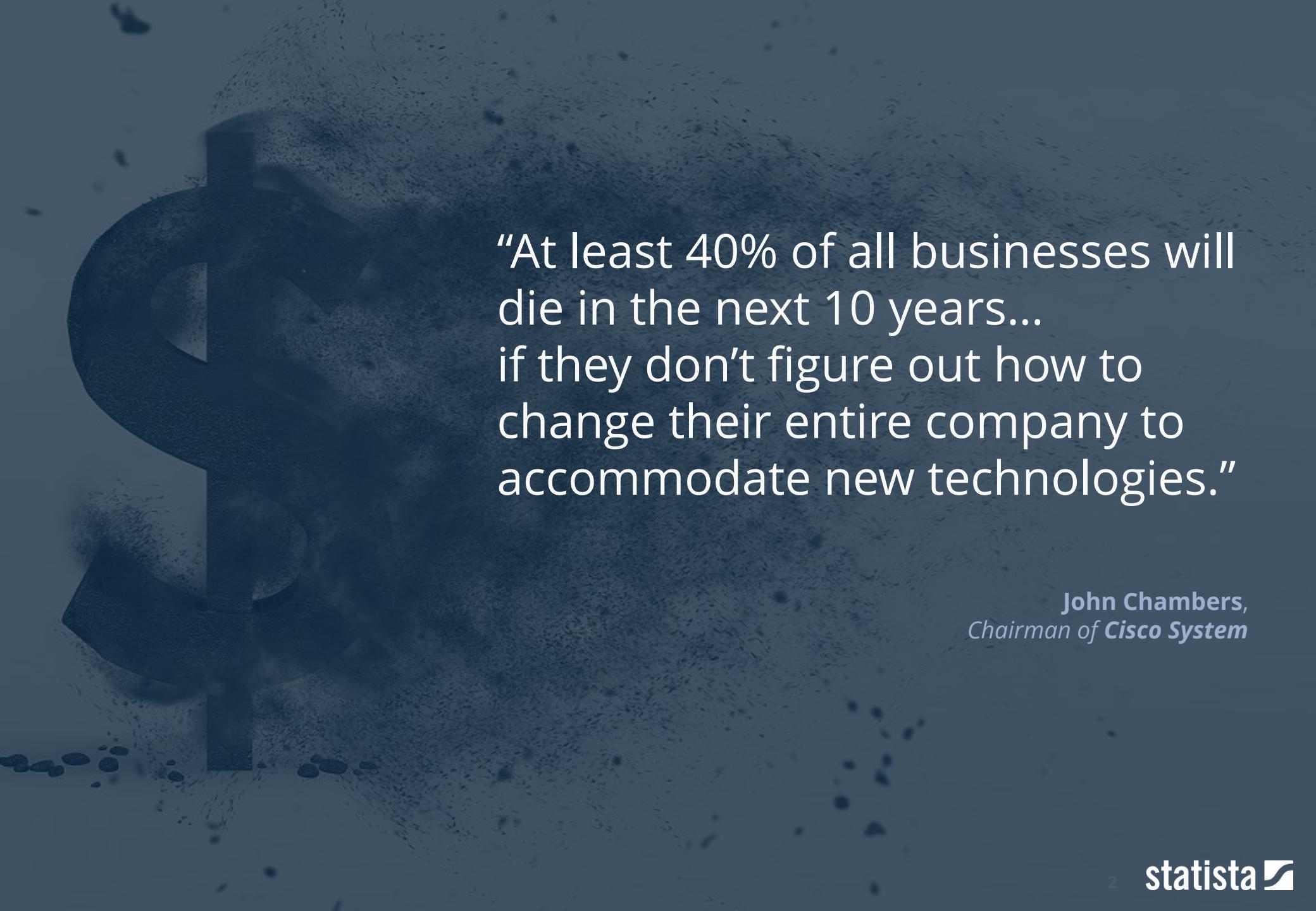




Digital Economy Compass

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

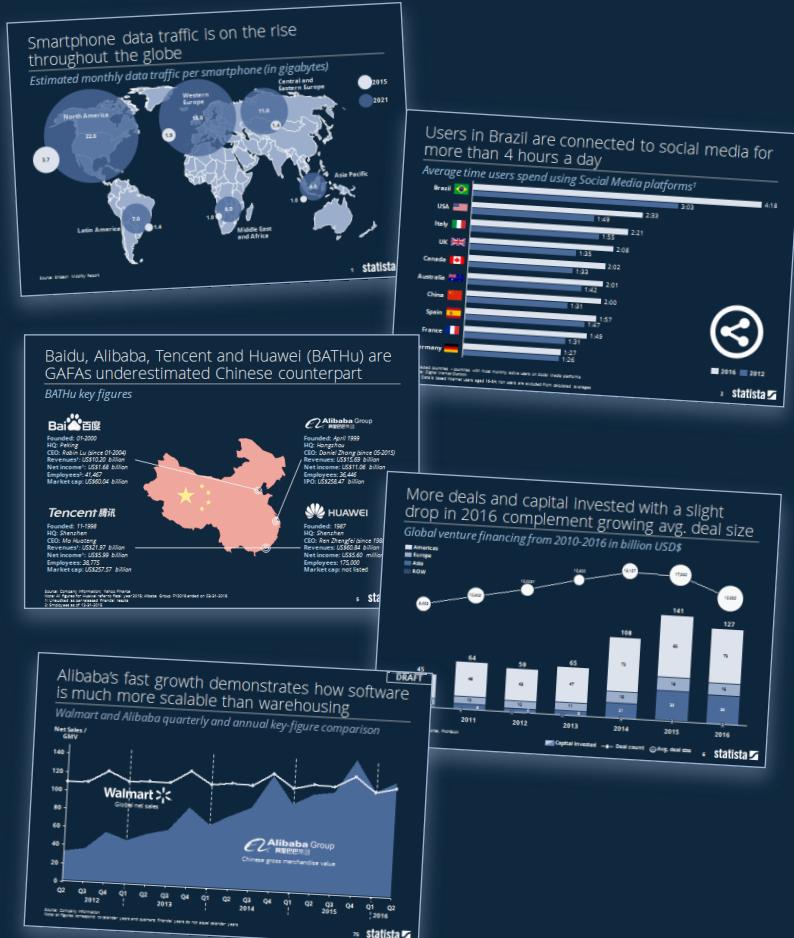


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Statista's Digital Market Outlook

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Connectivity

2,570,792

e-mails per second

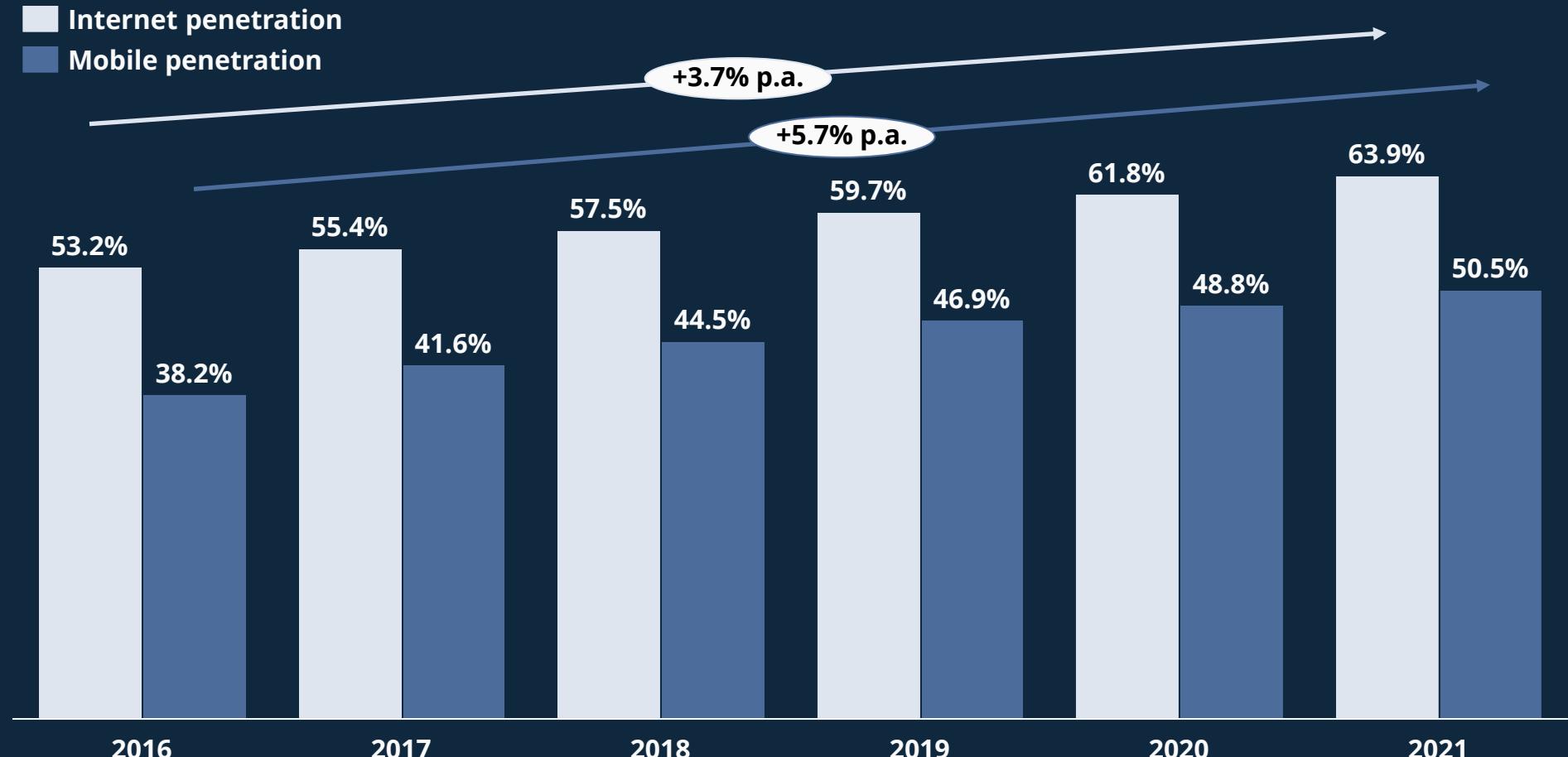
The global number of e-mails sent per second resulted in around **81 trillion** e-mails sent during 2016.





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

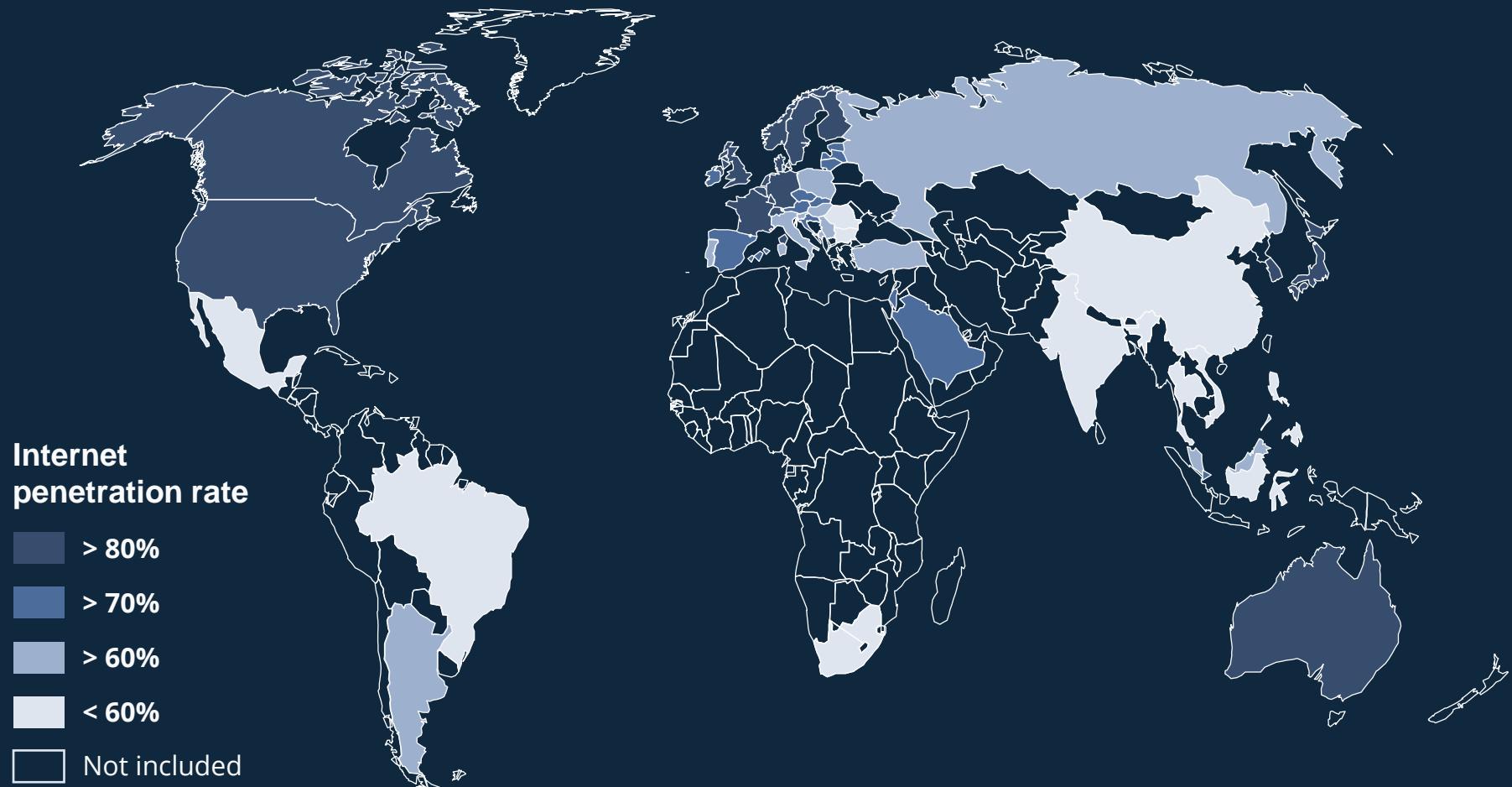


Source: [Statista Digital Market Outlook](#)

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)

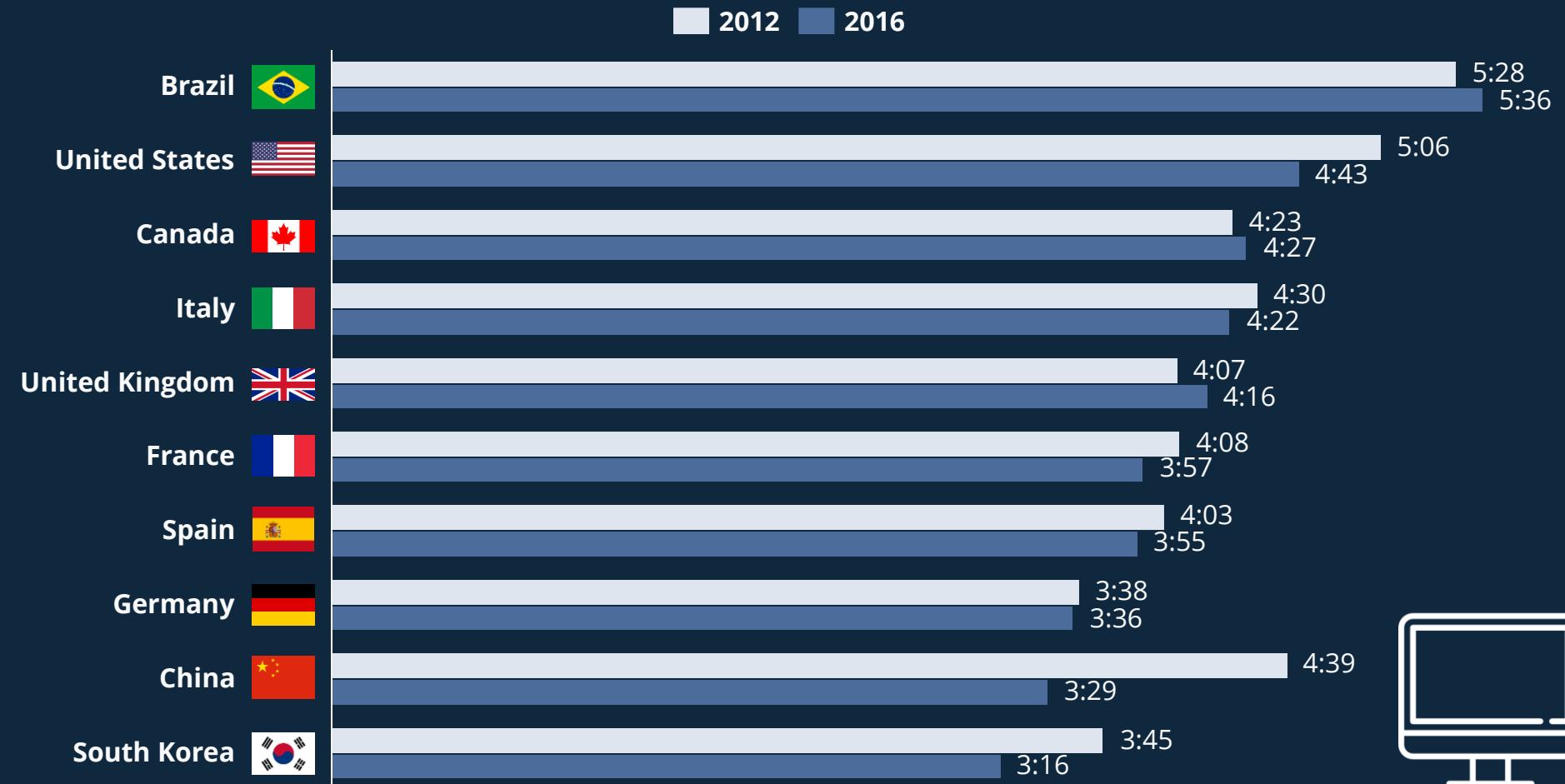


Source: [Statista Digital Market Outlook](#)

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)



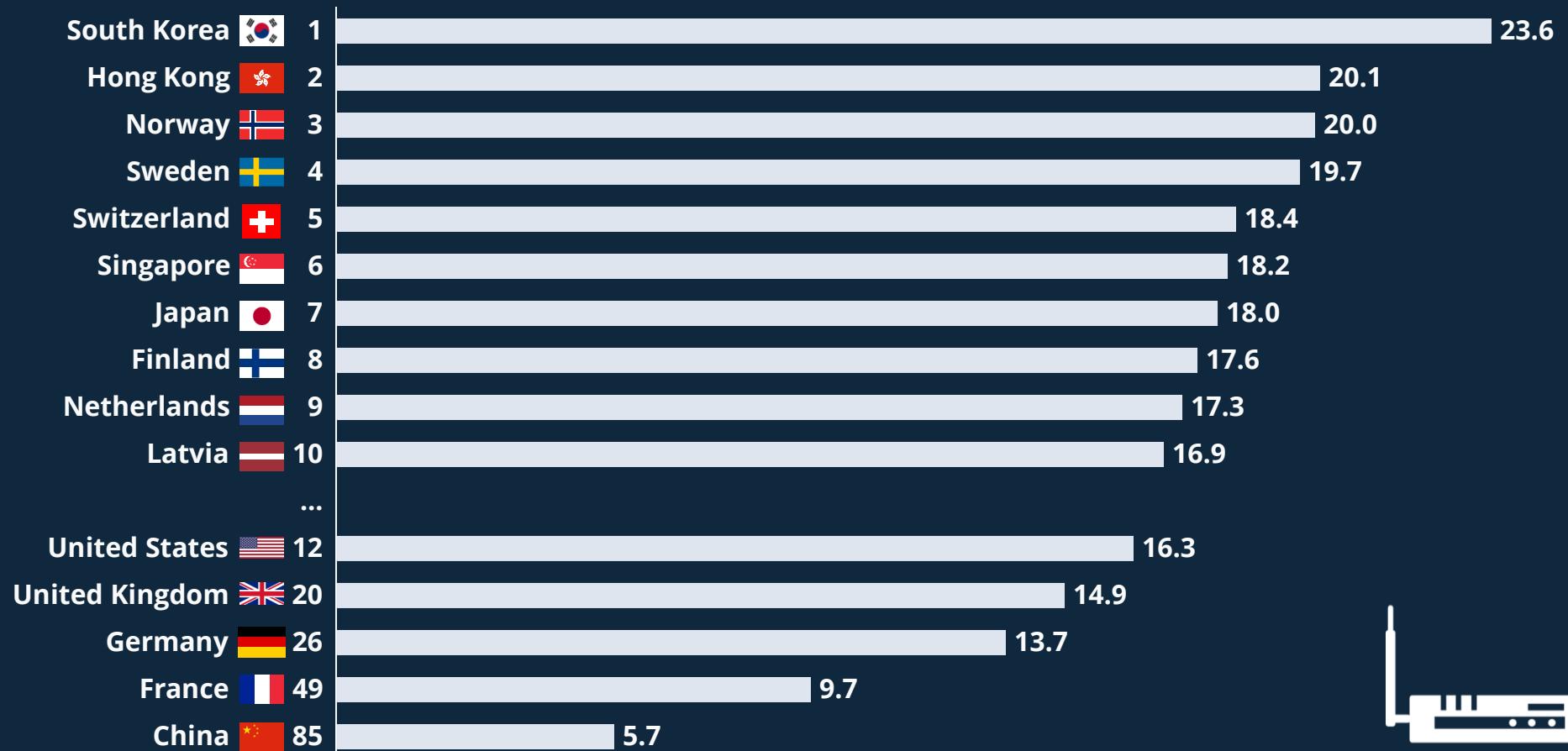
Source: [Statista Digital Market Outlook](#)

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 Mbps¹)



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.”

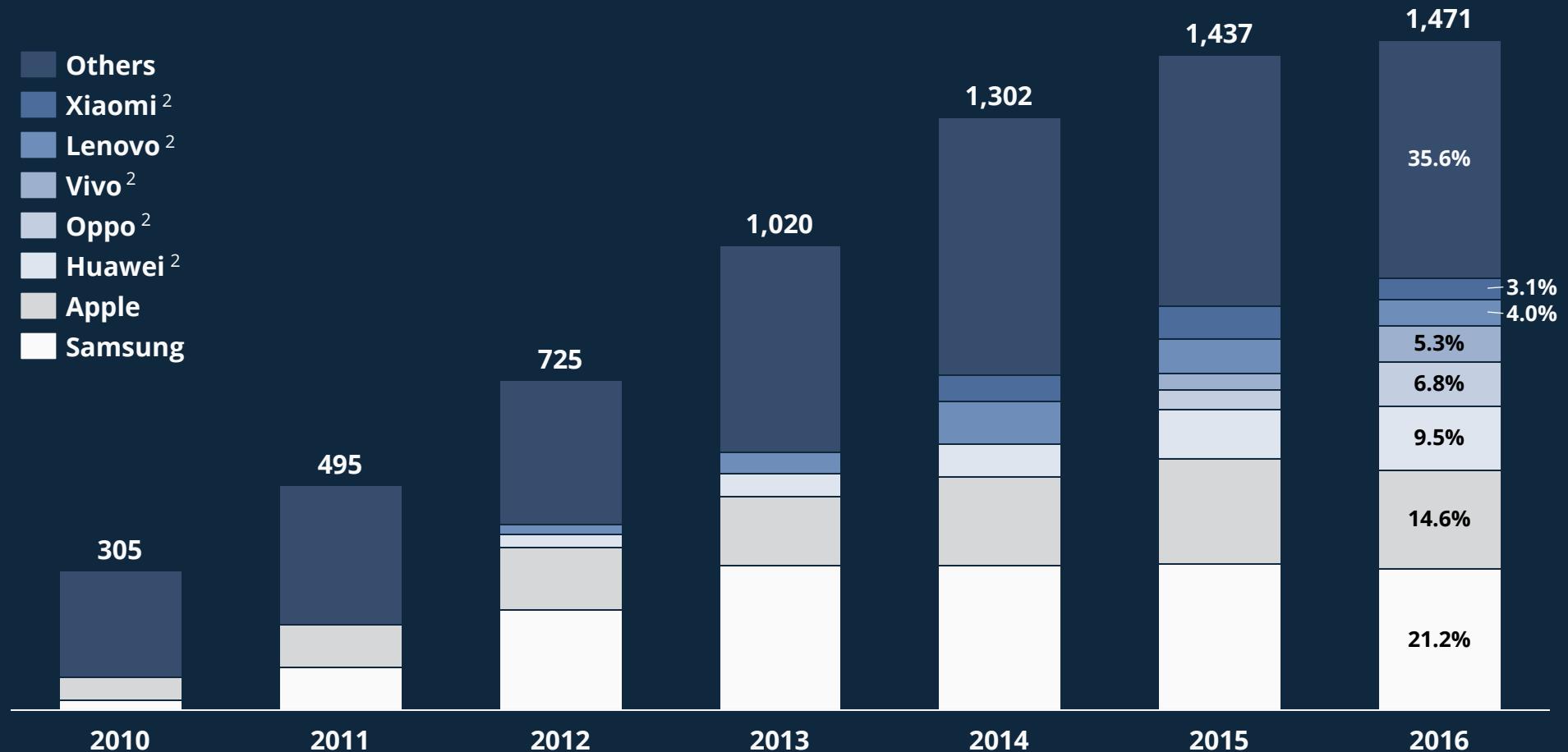
Eric Schmidt,

*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 OEM¹



Source: IDC, Gartner

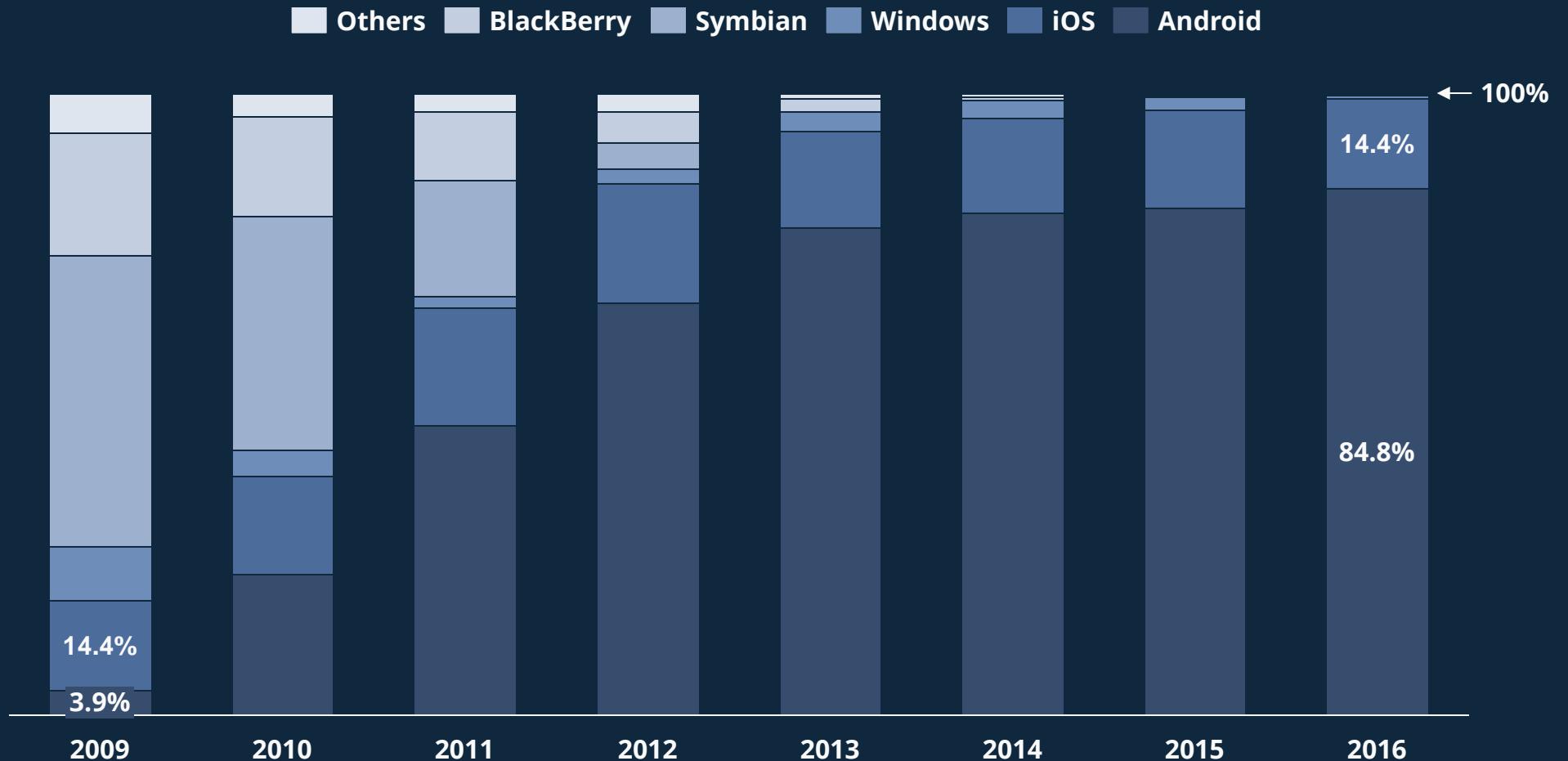
1: Original Equipment Manufacturer

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 share¹



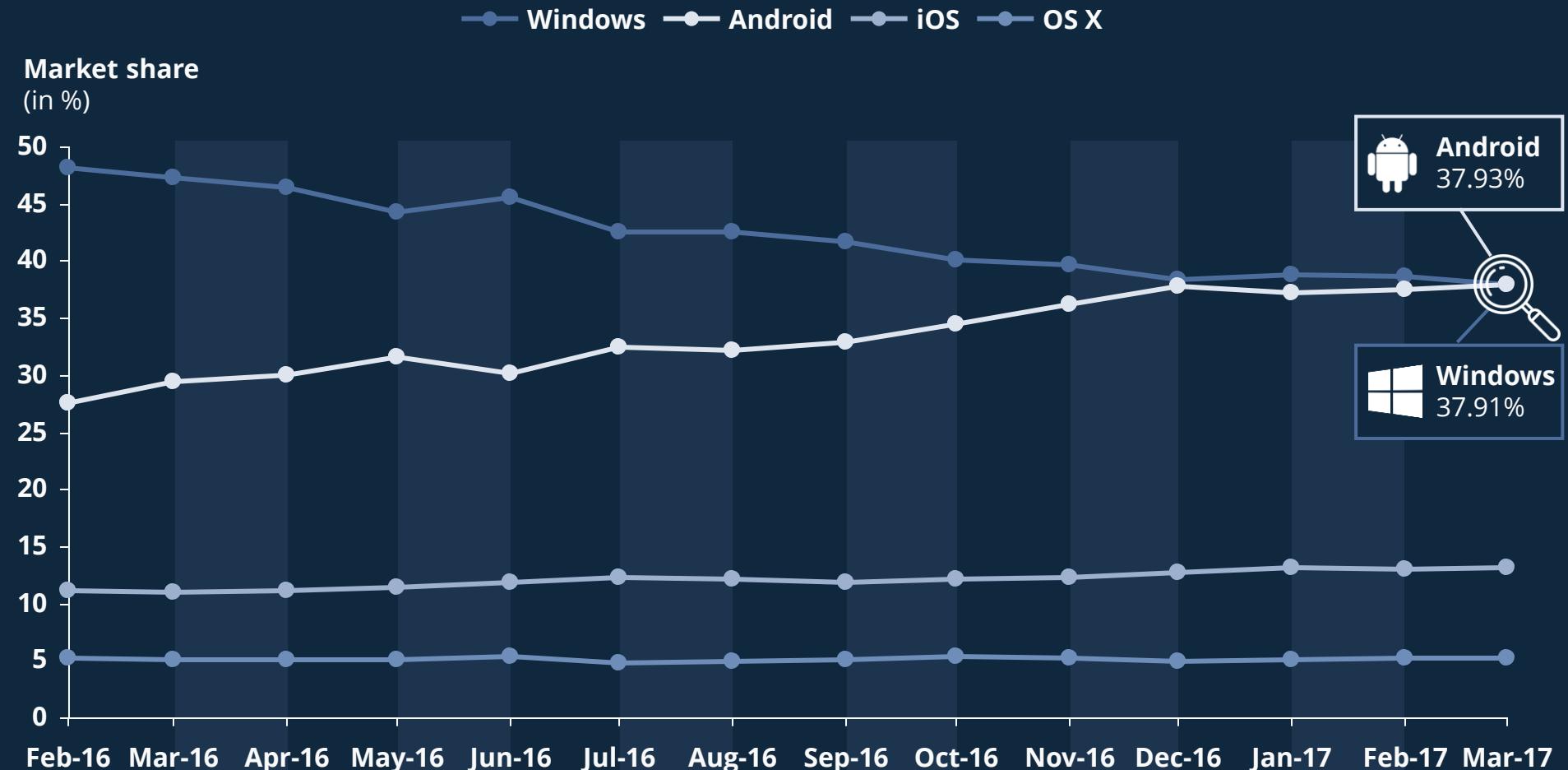
source: Gartner

OS = Operating System

1: based on worldwide unit sales

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

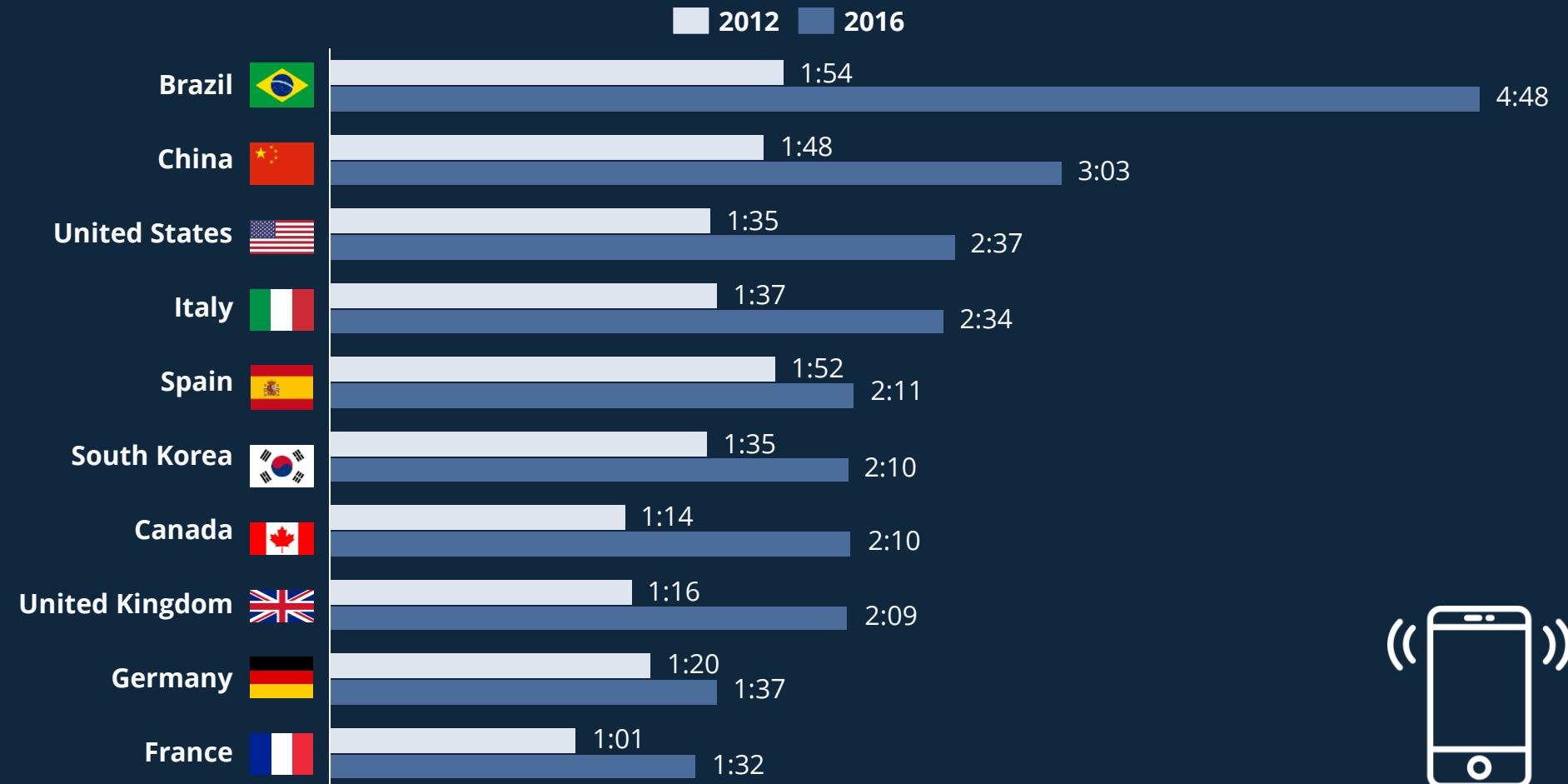
Global operating system market share from Feb 2016 to Mar 2017



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)

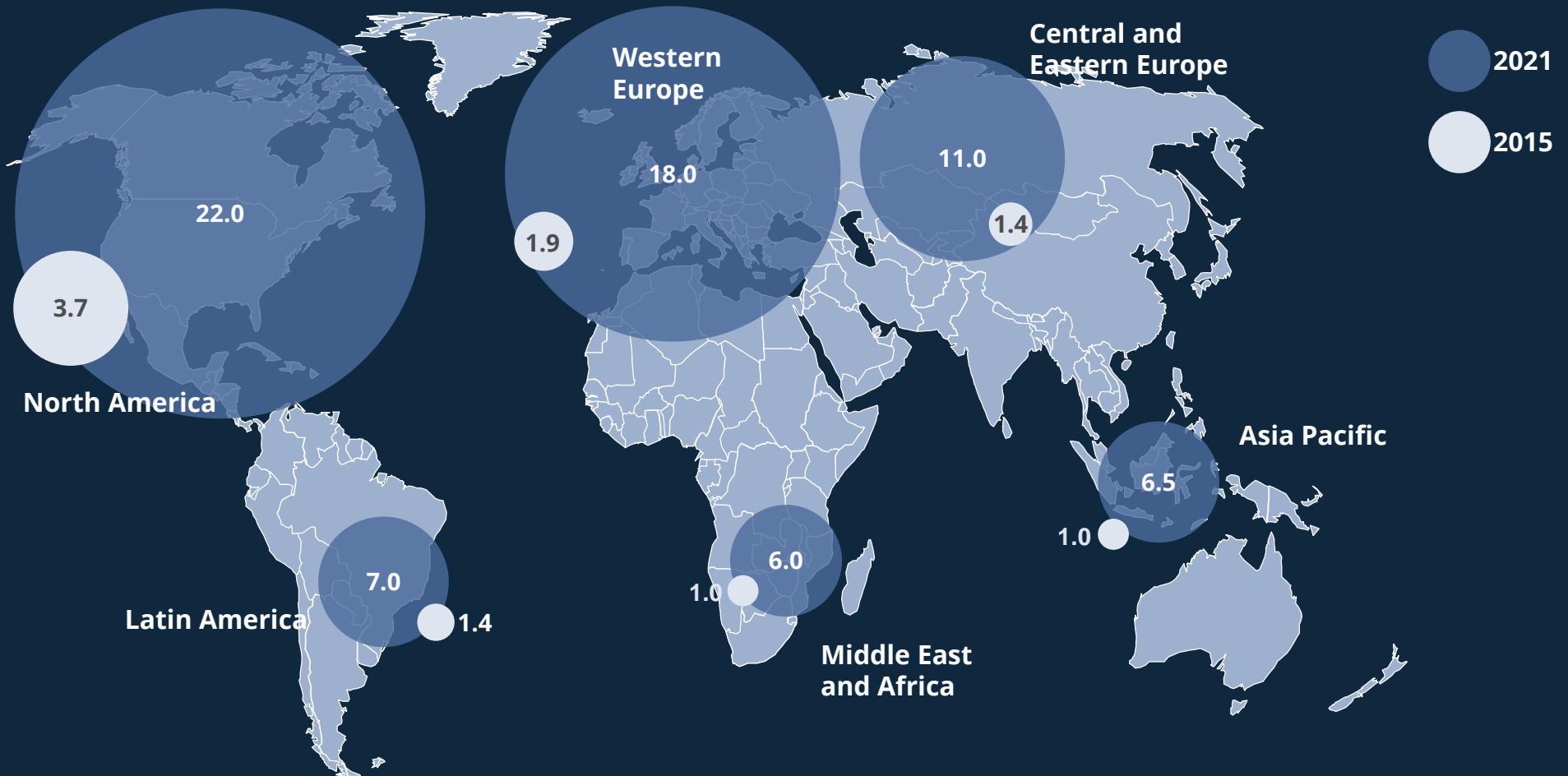


Source: **Statista Digital Market Outlook**

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

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

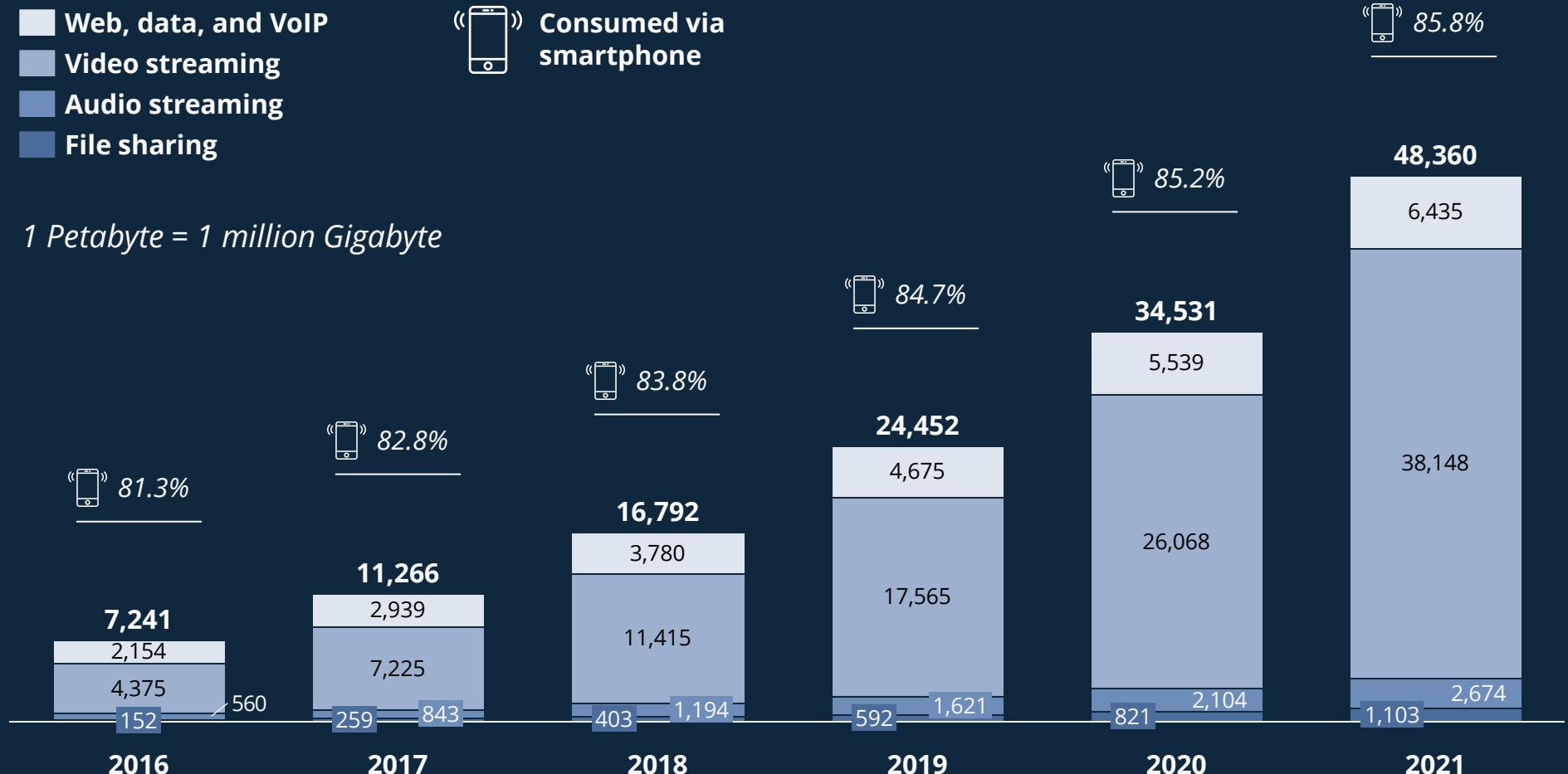
Estimated data traffic per smartphone (in gigabytes per month)



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)

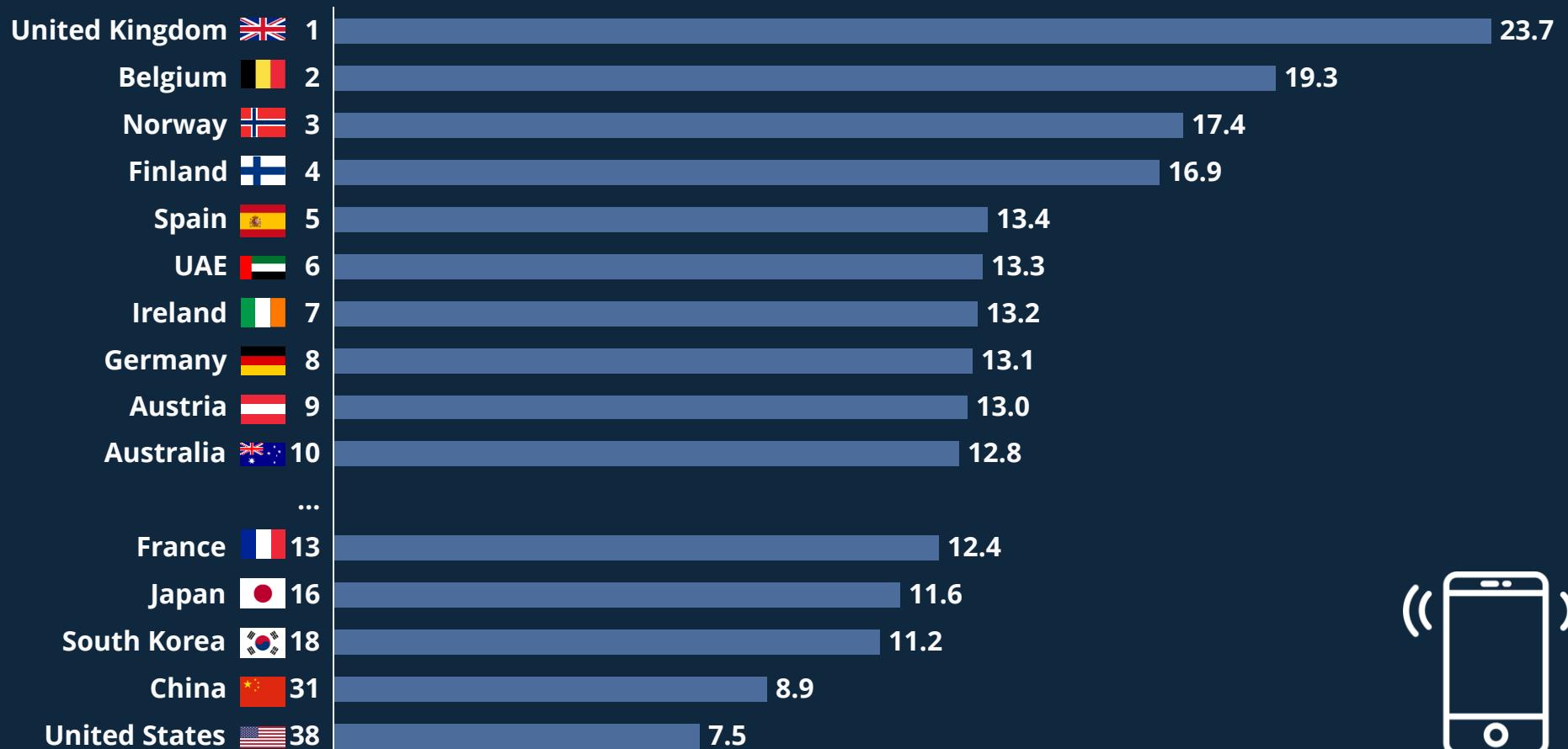


source: Cisco System; figures include only cellular mobile traffic (Wi-Fi or small cell from dual-mode devices are excluded)
 Note: Other mobile devices include Tablets, mobile PCs, M2M (incl. wearables), non-smartphone mobile phones, e-readers and portable gaming consoles



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

Average mobile speed in Top10 and selected countries (in Mbps¹)



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

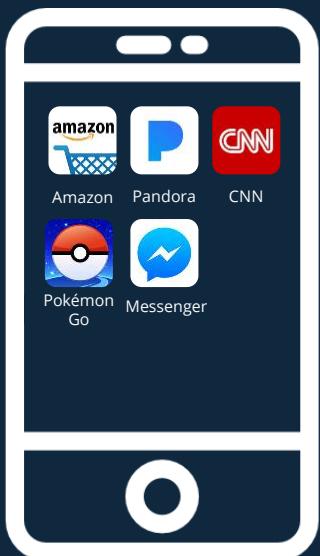
1: Megabits per second

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

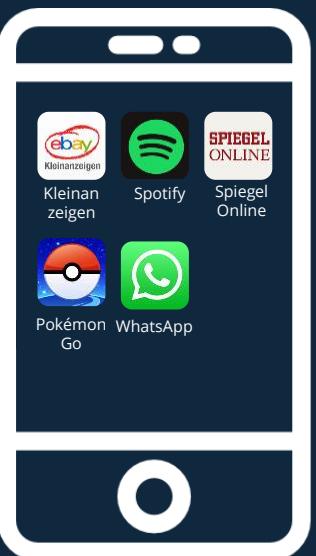
Most downloaded iPhone apps per category and country in 2016

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

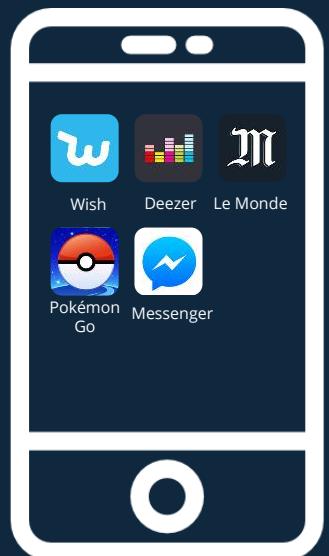
U.S.



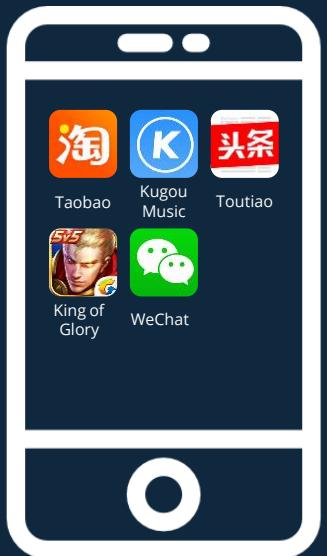
Germany



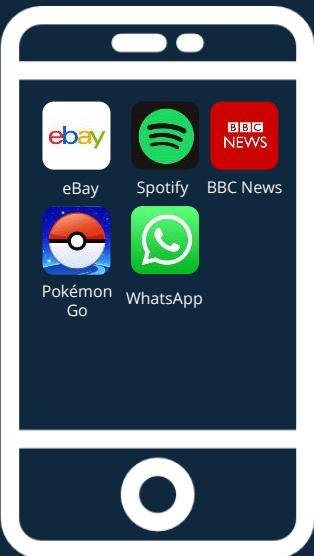
France



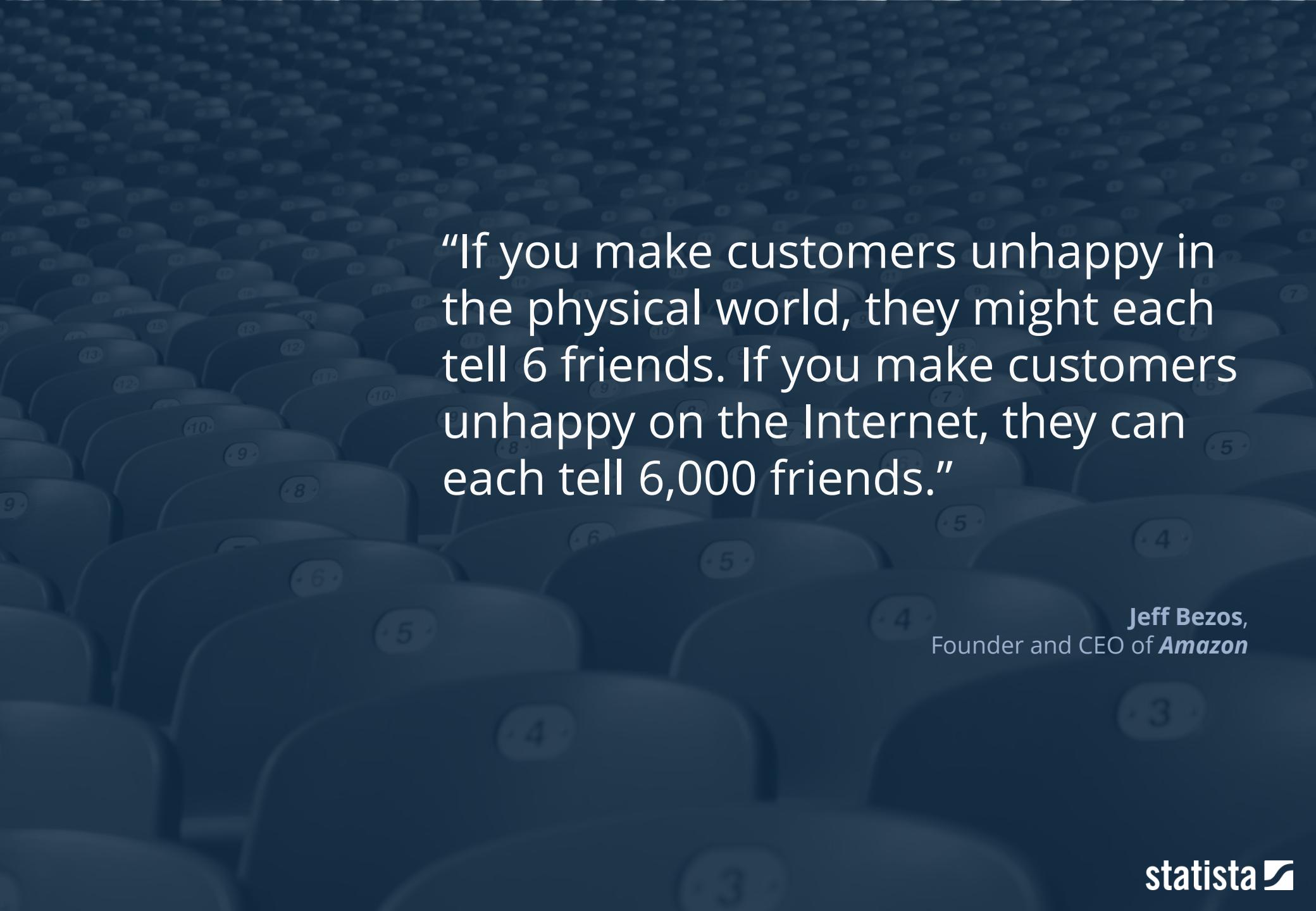
China



U.K.



Social Media

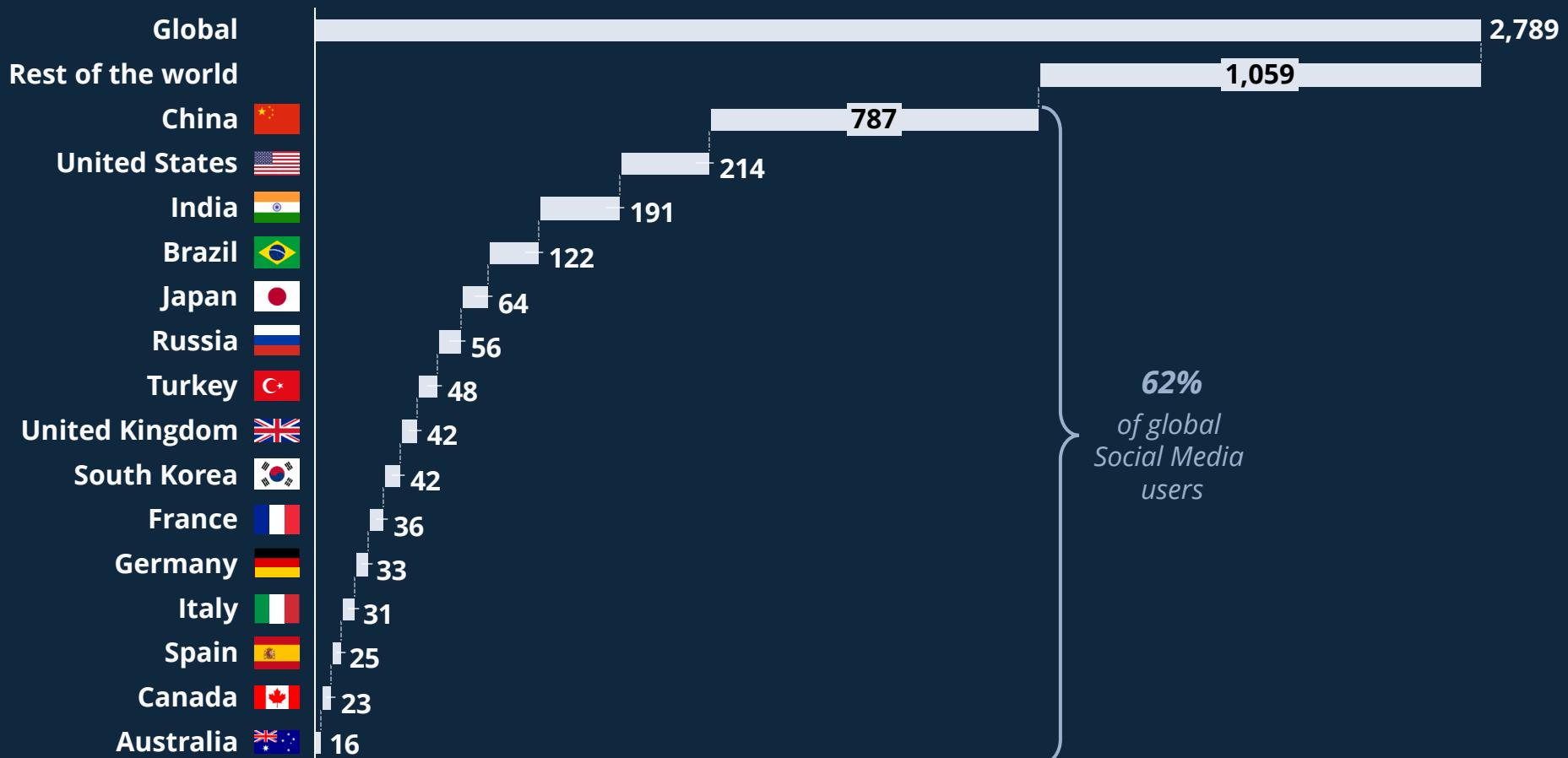


“If you make customers unhappy in the physical world, they might each tell 6 friends. If you make customers unhappy on the Internet, they can each tell 6,000 friends.”

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 MAU¹ (in million)

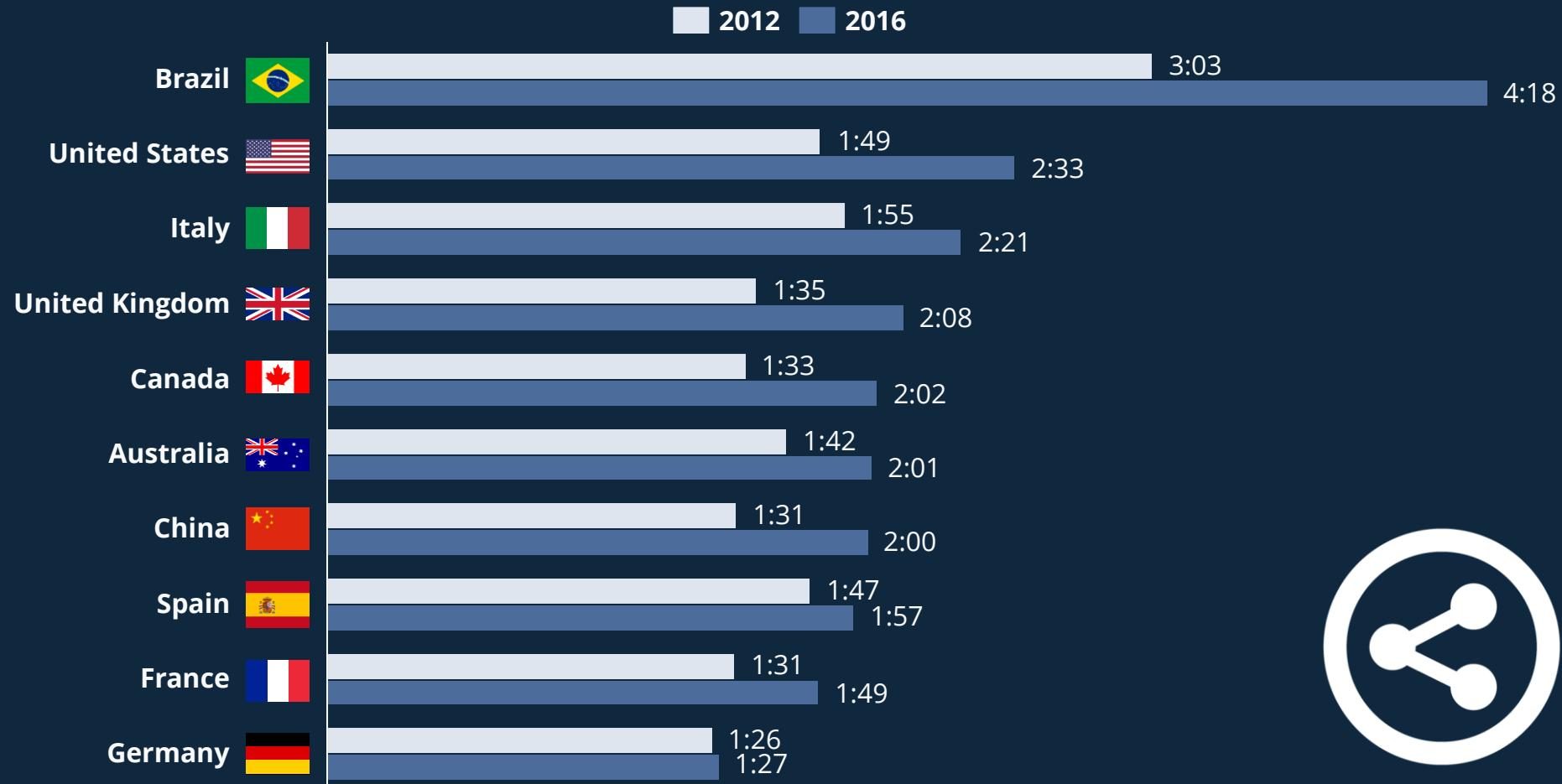


Source: wearesocial, InternetWorldStats, [Statista Digital Market Outlook](#)

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.

The logo for WhatsApp, featuring the word "WhatsApp" in a white, rounded, sans-serif font. Below it, the text "Versie 2.12.13" is written in a smaller, lighter font.

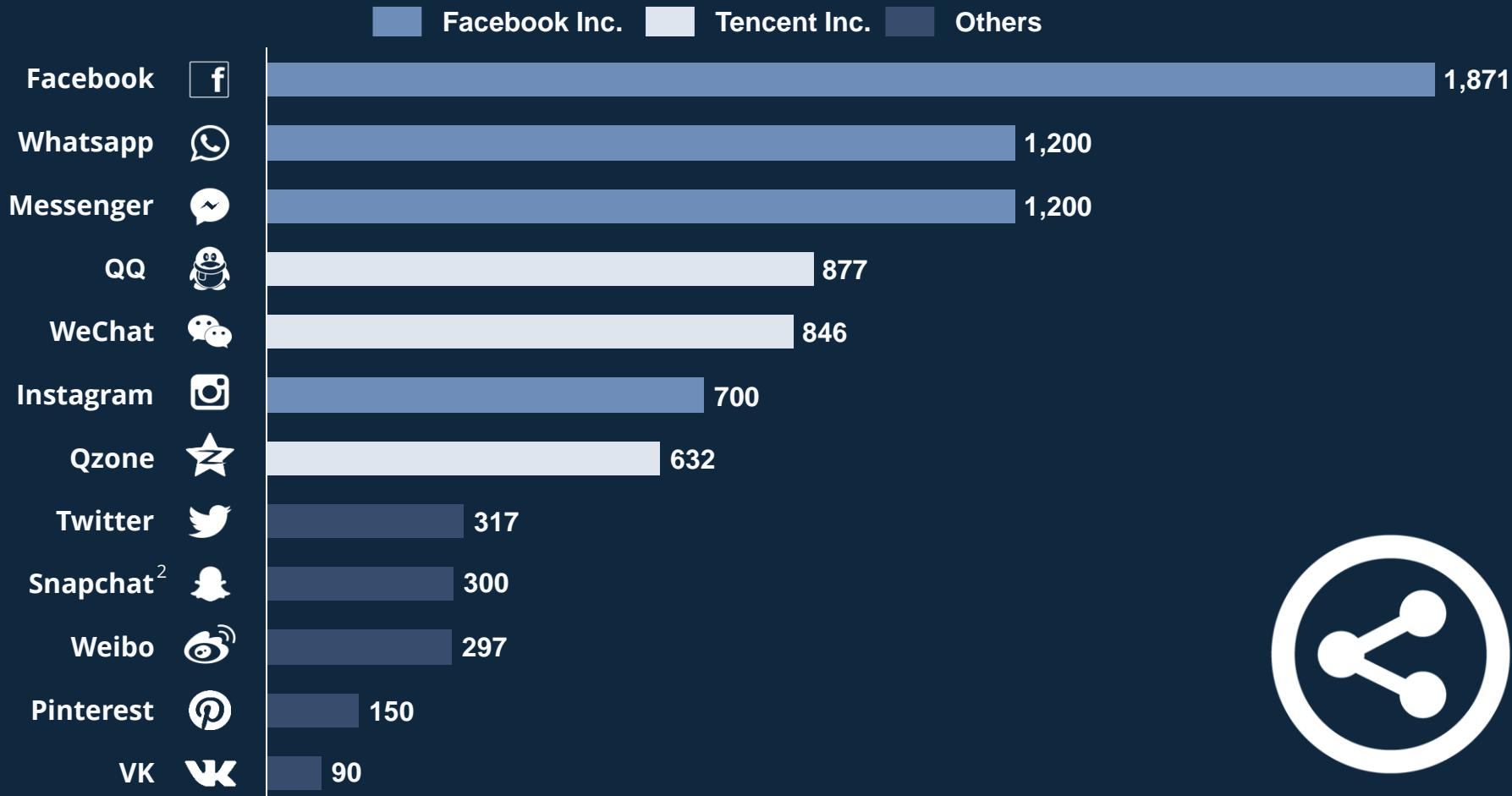
WhatsApp
Versie 2.12.13

Source: Facebook (February 2017)

statista

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

MAU¹ of selected social networks and messaging services (in million)



source: We Are Social, Hootsuite, Techcrunch,

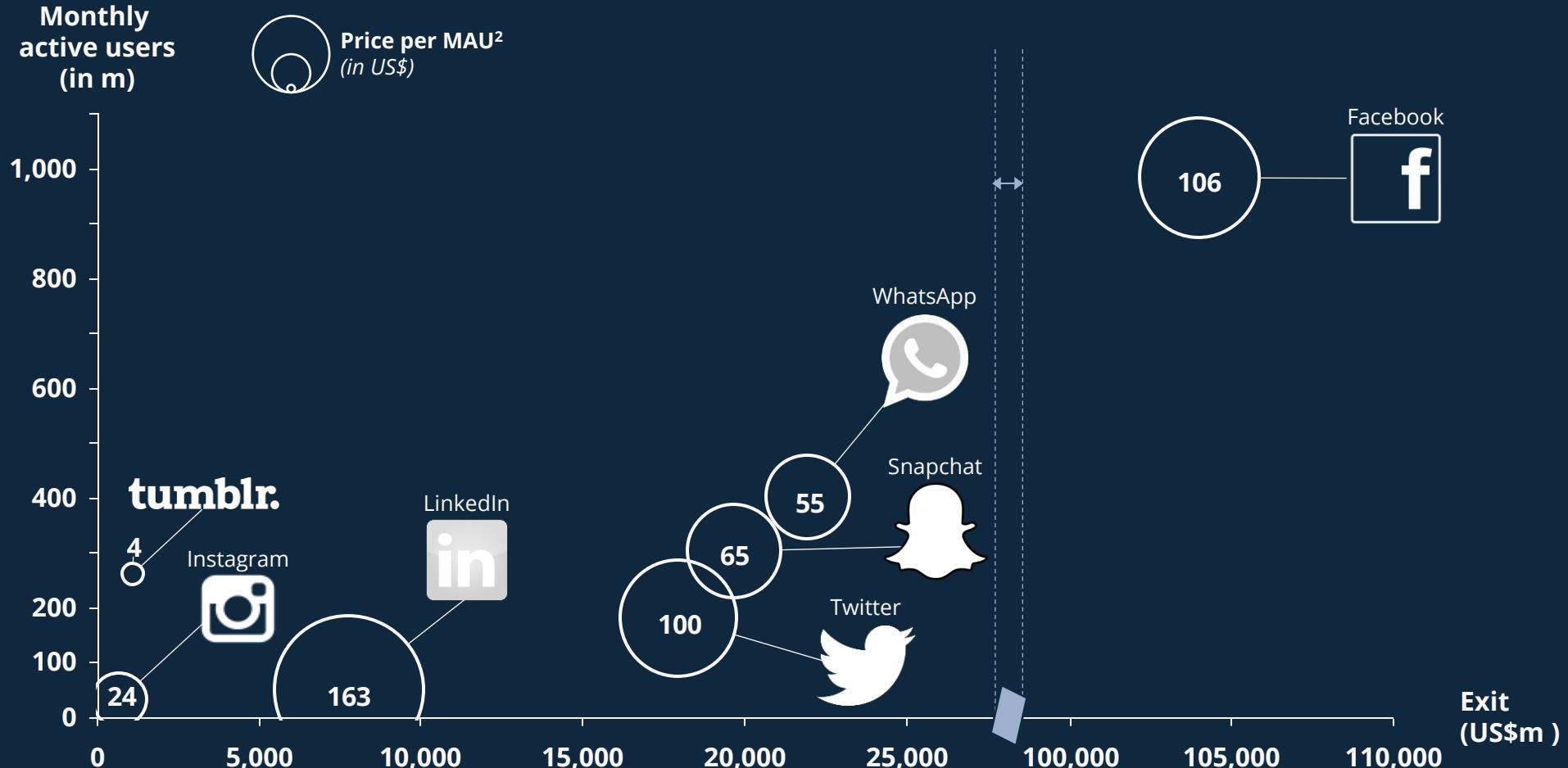
1: MAU = Monthly active users, as of January 2017; WhatsApp and Facebook Messenger as of March 2017

2: Estimation as Snapchat only reports daily active users



Facebook and LinkedIn Social Media exits¹ were the most expensive per user to investors

Social Media exits (acquisition or IPO) in comparison



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

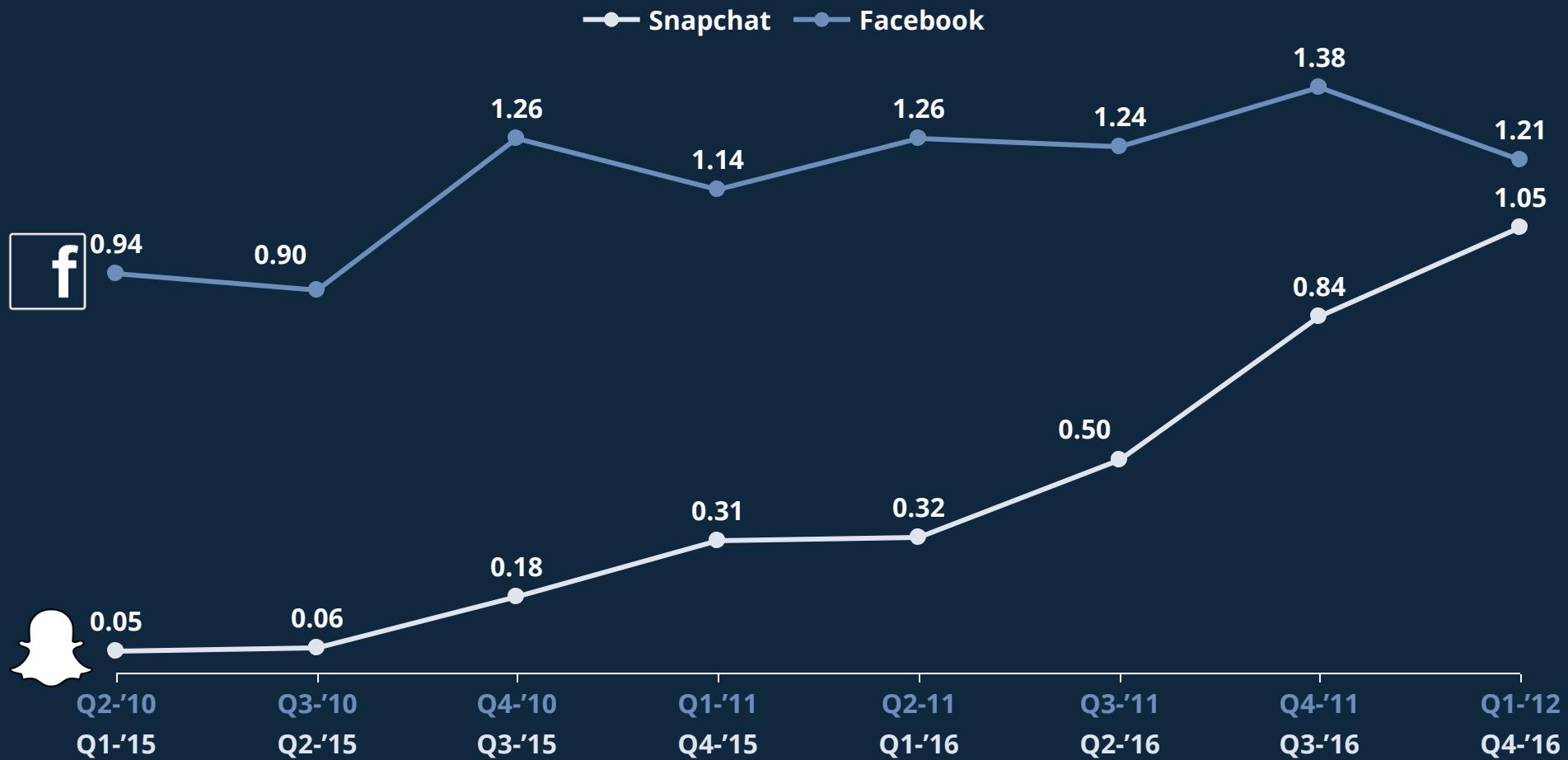
Note: Figures for monthly active users refer to the time of exit

1: Acquisition or IPO

2: MAU = monthly active user

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

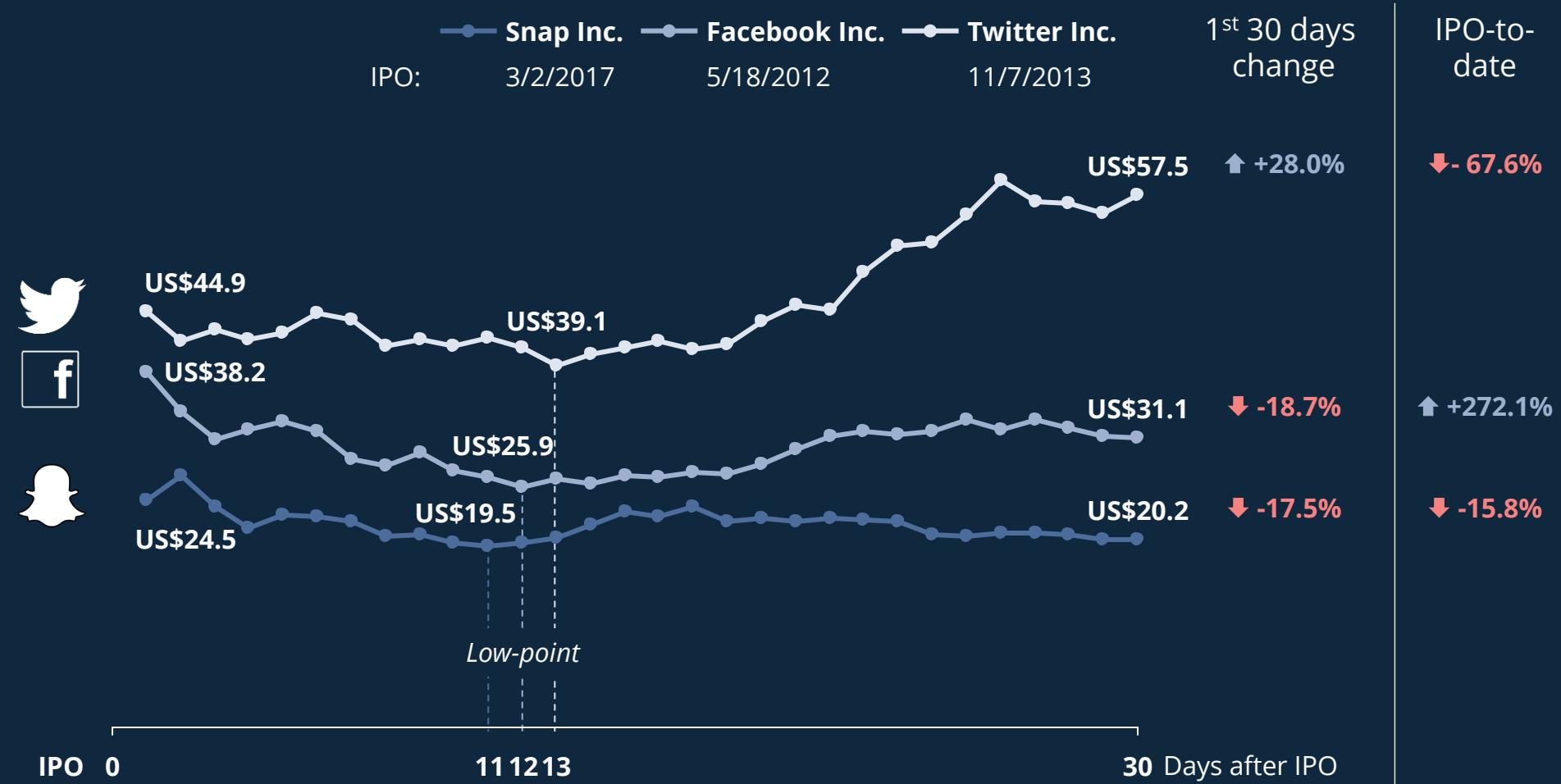
Global avg. revenue per user in the eight quarters before IPO (in US\$)



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

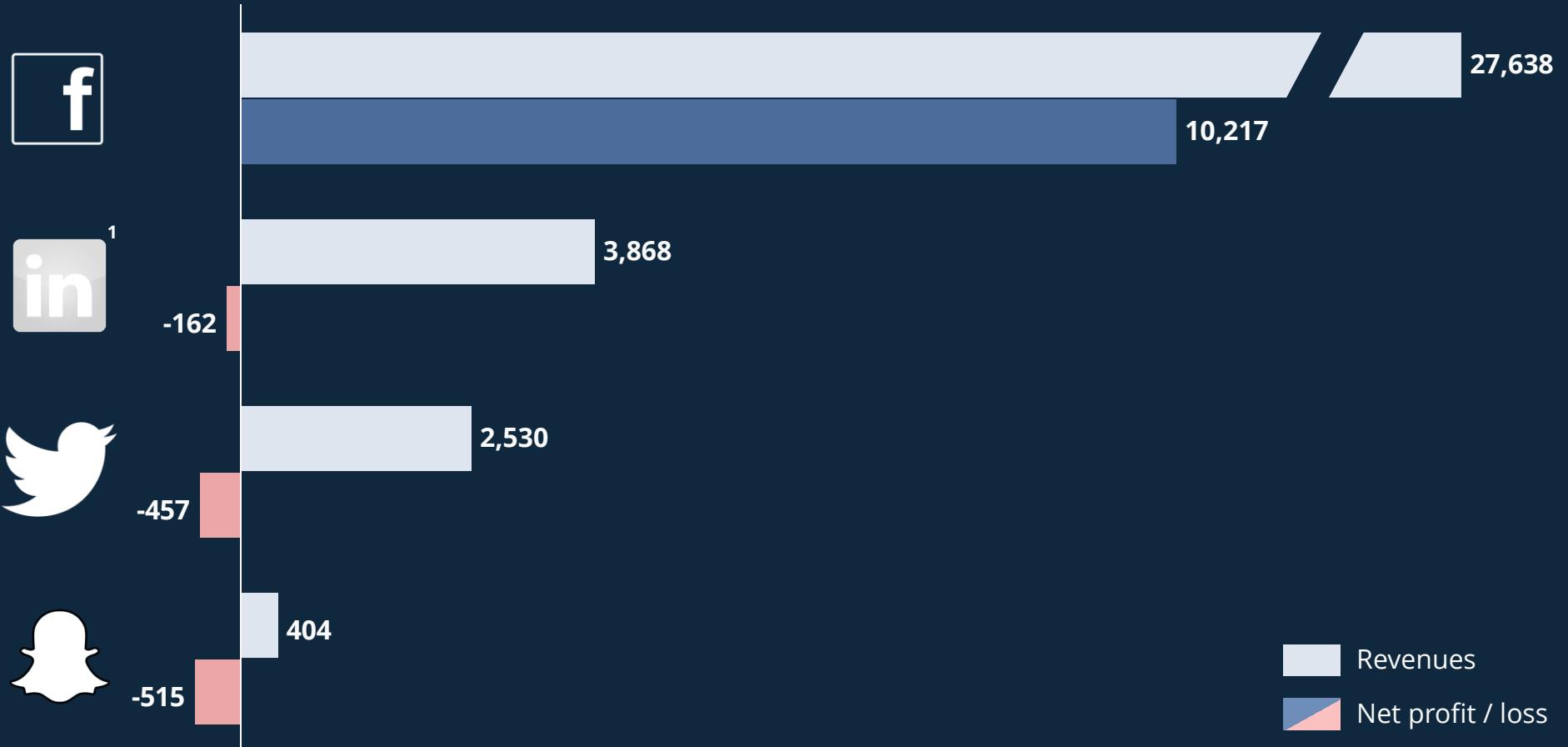


Source: Yahoo! Finance

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

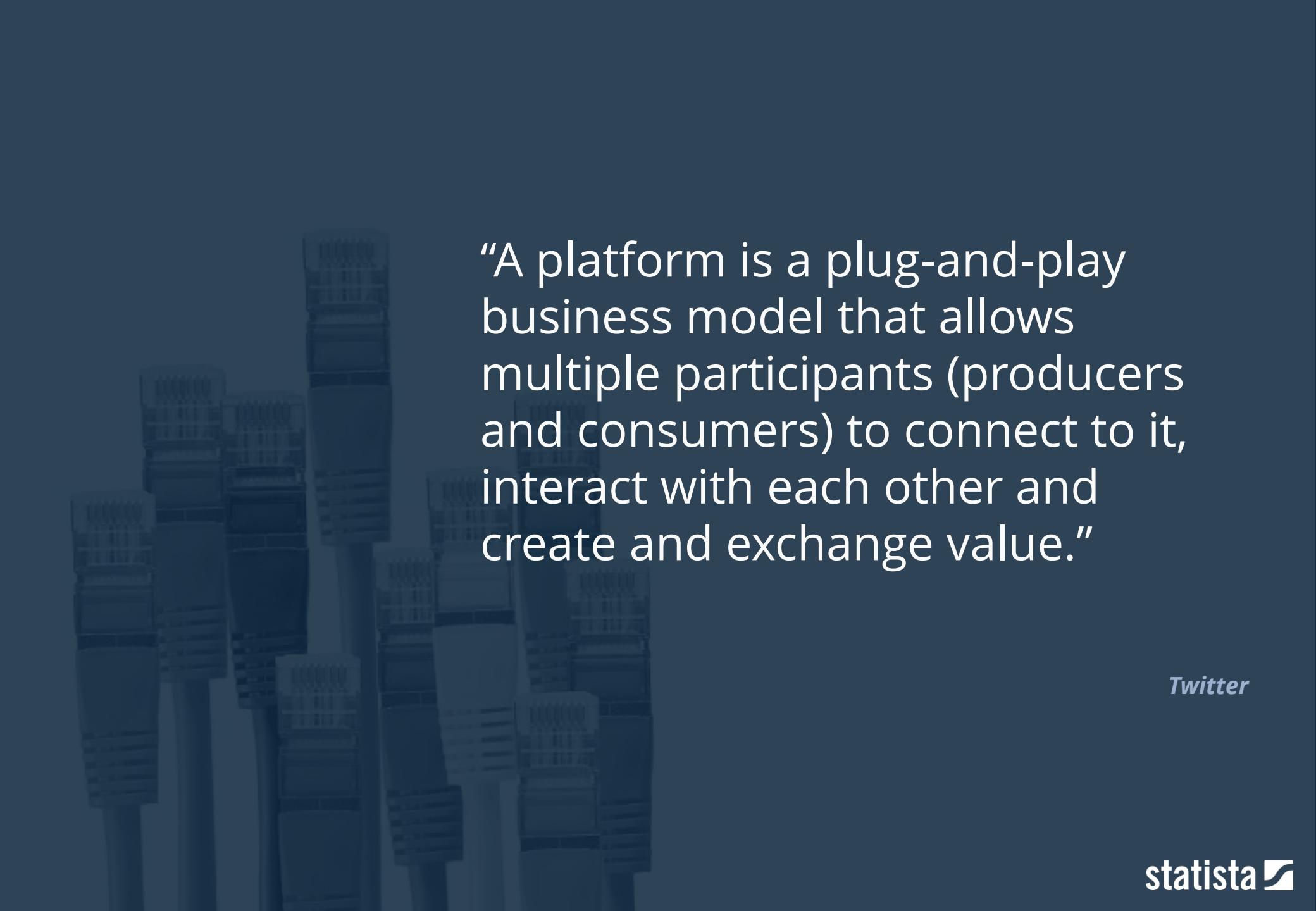
FY2016 results of listed U.S. Social Media platforms (in US\$ million)



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**

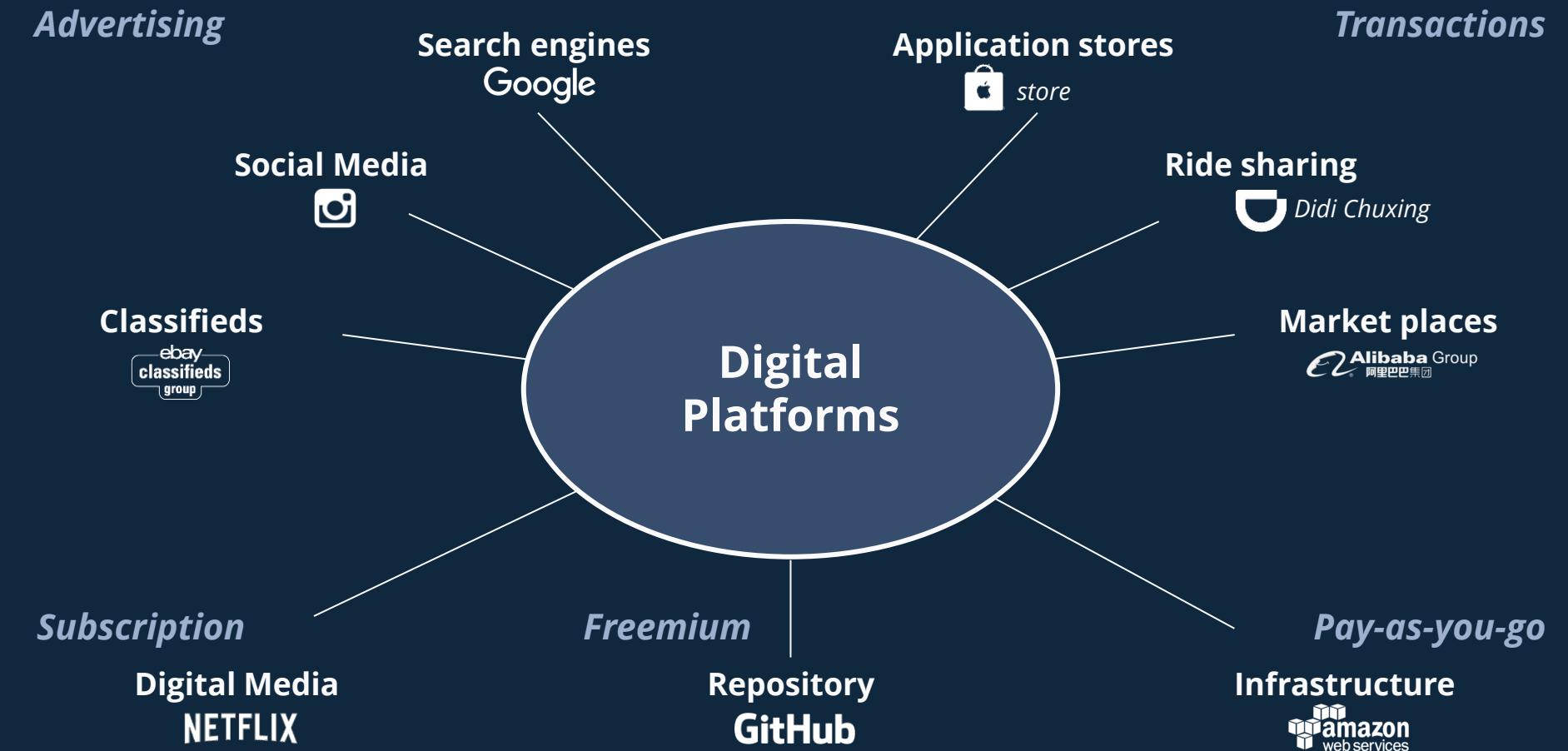
Flow



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



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**

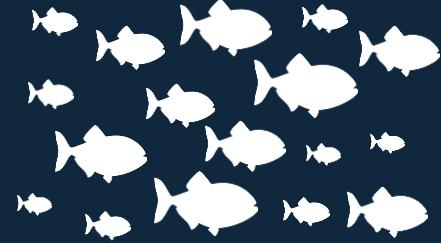


Digital **Swordfish**



- 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)
Revenues¹: US\$90.23 billion
Net income¹: US\$19.48 billion
Employees: 69,953
Market cap: US\$558.1 billion



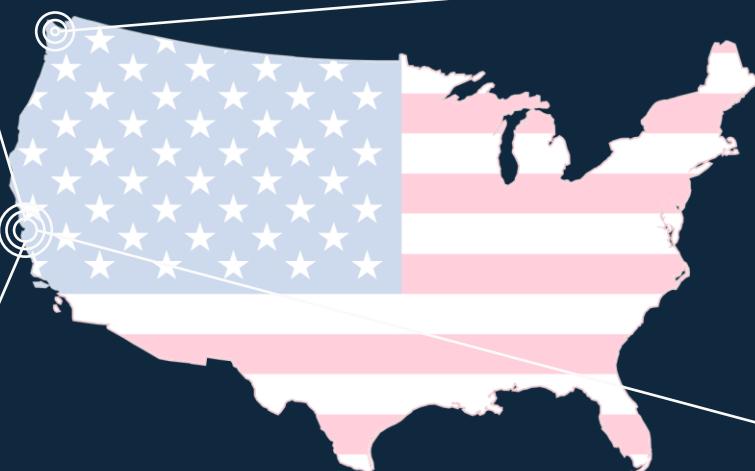
Founded: 02-2004
HQ: Menlo Park, California
CEO: Mark Zuckerberg (since 2004)
Revenues¹: US\$27.64 billion
Net income¹: US\$10.22 billion
Employees: 17,048
Market cap: US\$399.5 billion

amazon

Founded: 05-1994
HQ: Seattle, Washington
CEO: Jeff Bezos (since 05-1996)
Revenues¹: US\$135.99 billion
Net income¹: US\$2.37 billion
Employees²: 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;

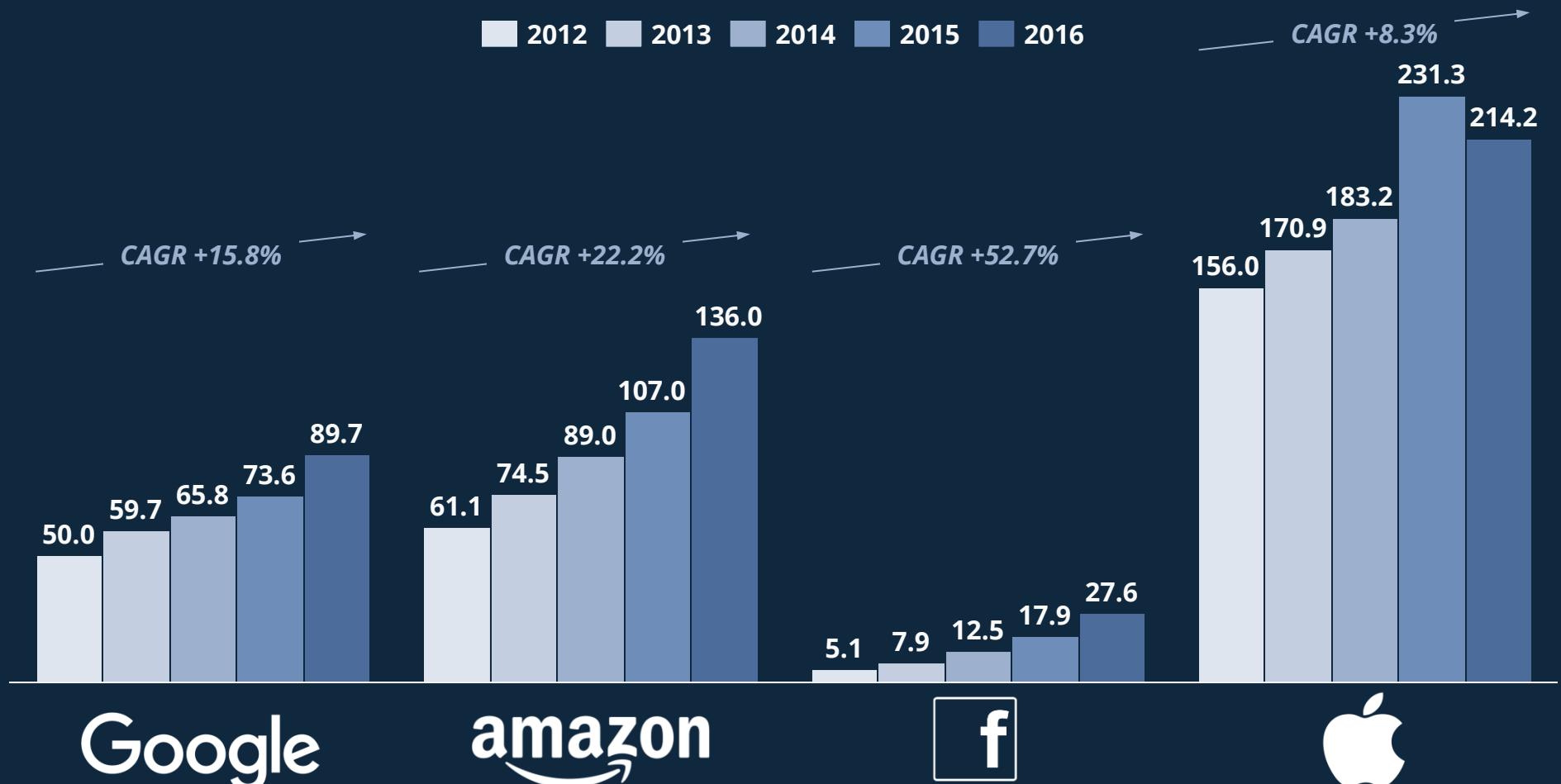
Note: All figures refer to end of fiscal year 2016, except market cap which is as of 03-10-2017; figures related to Google correspond to Alphabet Inc. conglomerate

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)

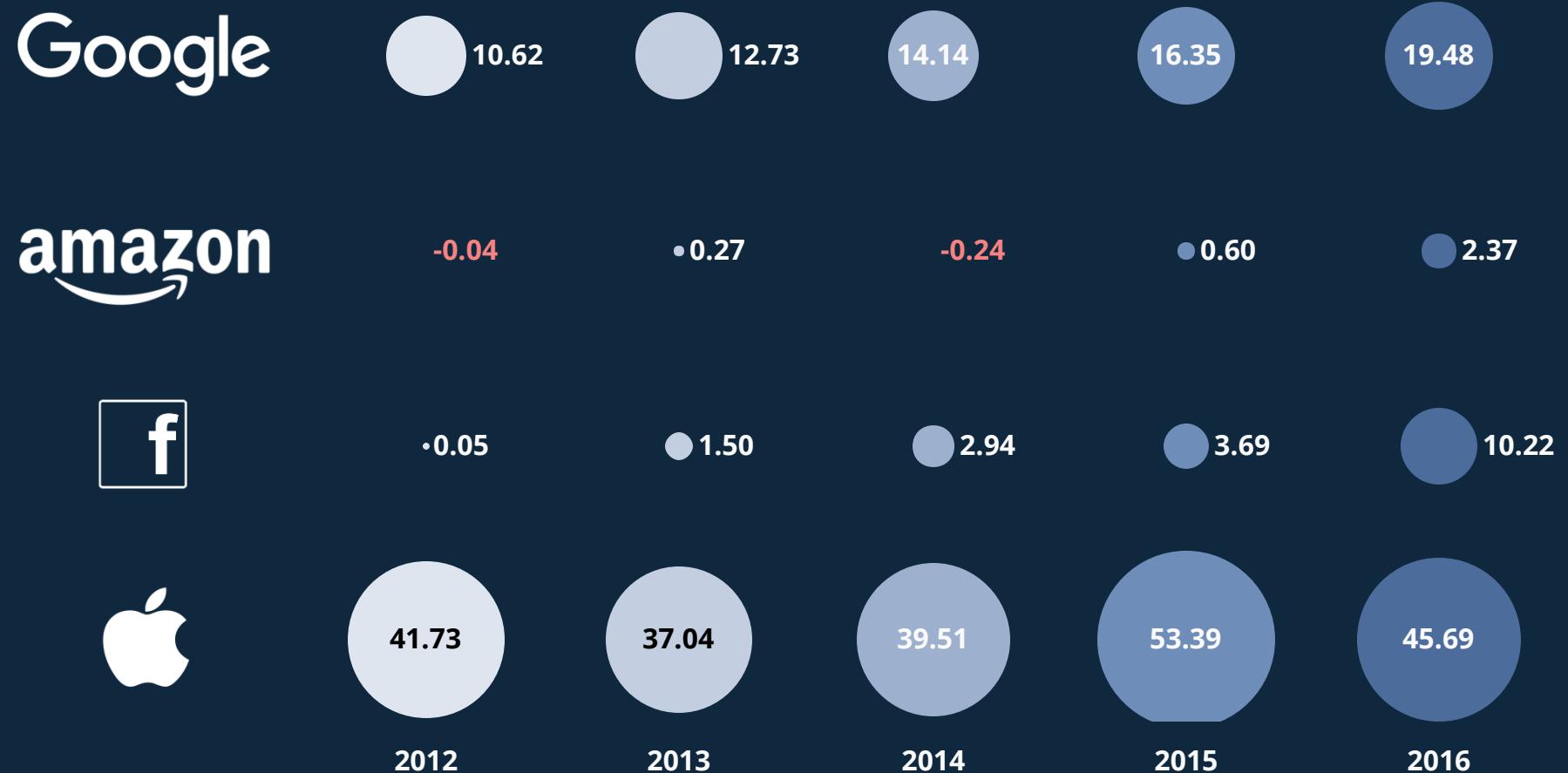


Source: Company Information

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

				
IT & Infrastructure	Google fiber	 fulfillment by 	Aquila	Apple SIM
Artificial Intelligence	 Google Assistant		Jarvis	 Siri
Hardware Devices	 Pixel  Chromecast	  	 oculus	   etc.
Communication & Messaging	 Google+  Allo		 WhatsApp  Facebook  Messenger  Workplace	 iMessage
Digital Media & Entertainment	 Google Play  YouTube		facebook.com/gaming	  
Connected Car & e-Mobility	 androidauto	 Alexa integration	 -Integration (Transportation)	 CarPlay
E-Commerce & Retail	 Google Shopping 'Purchase on Google'	 	Facebook 'Buy-Button'	 iBeacon  store
FinTech & Payment	 Google Wallet 		 -Integration (Friend-to-Friend Payment)	 Apple Pay
Navigation & Location services	 Google Maps	Amazon Maps API, MAPS.ME integration		 Apple Maps
Advertising	 Google AdWords  Google AdSense 	 	Facebook Business, Instagram Business	Apple Search Ads

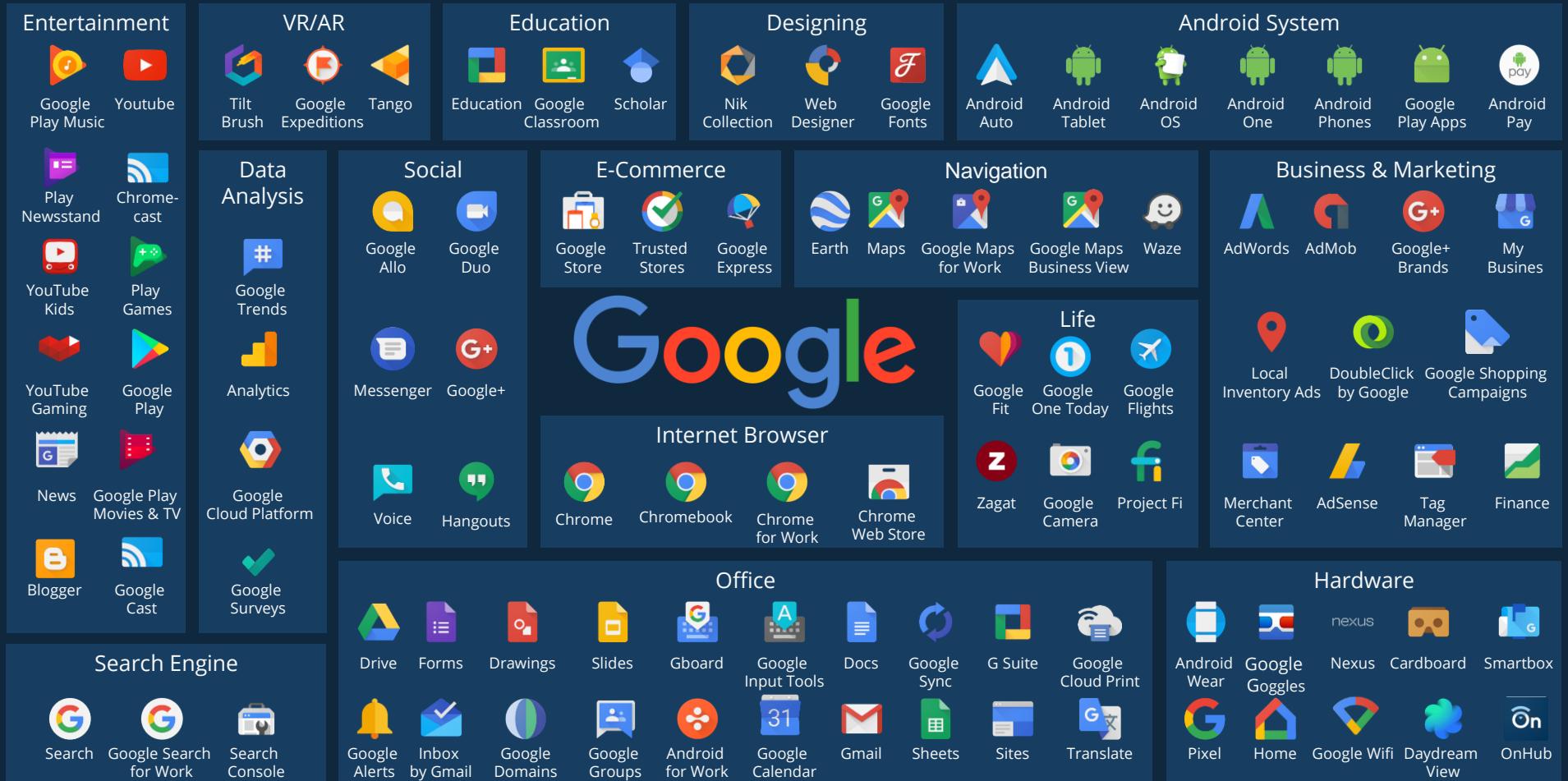
Source: Statista Research

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



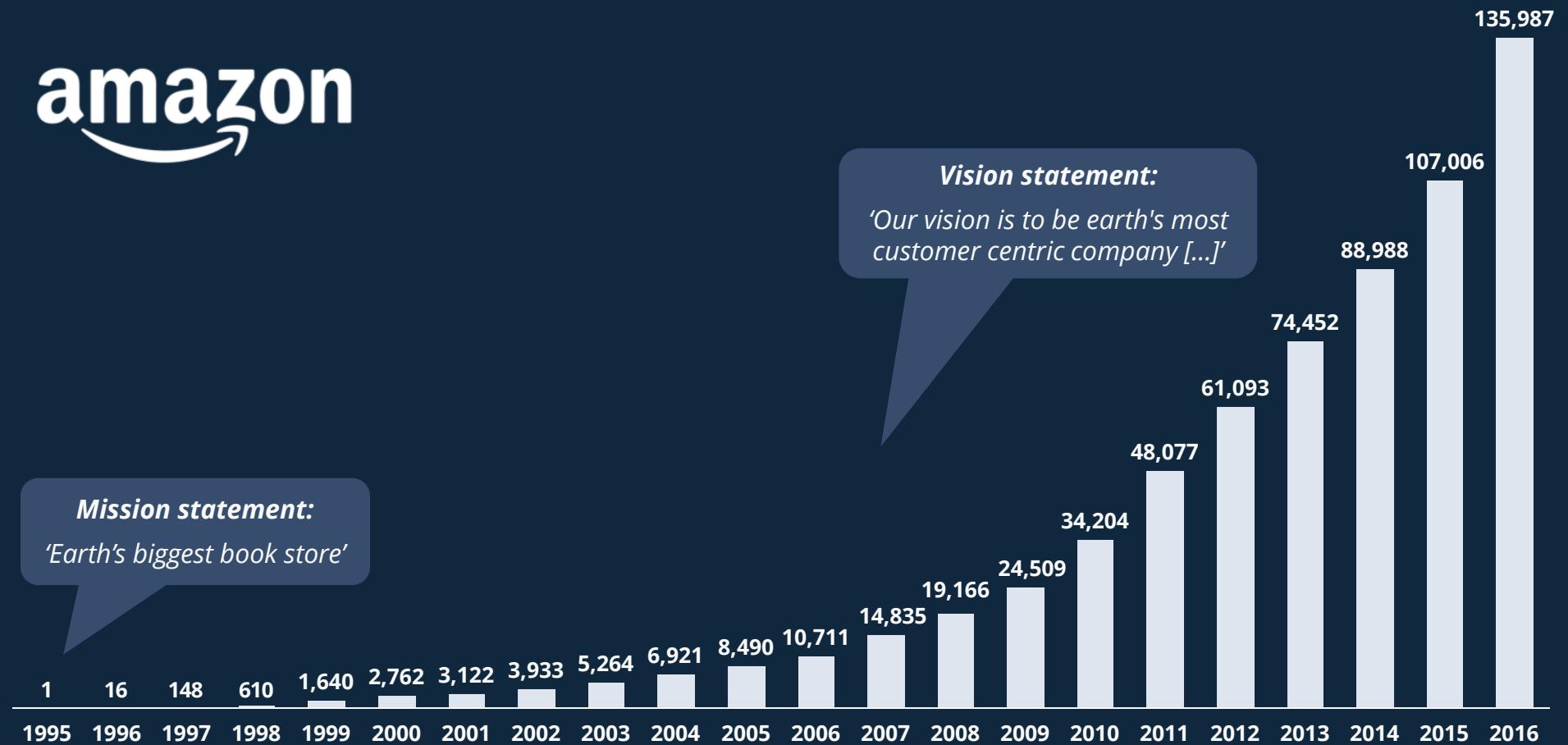
Source: Google

“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

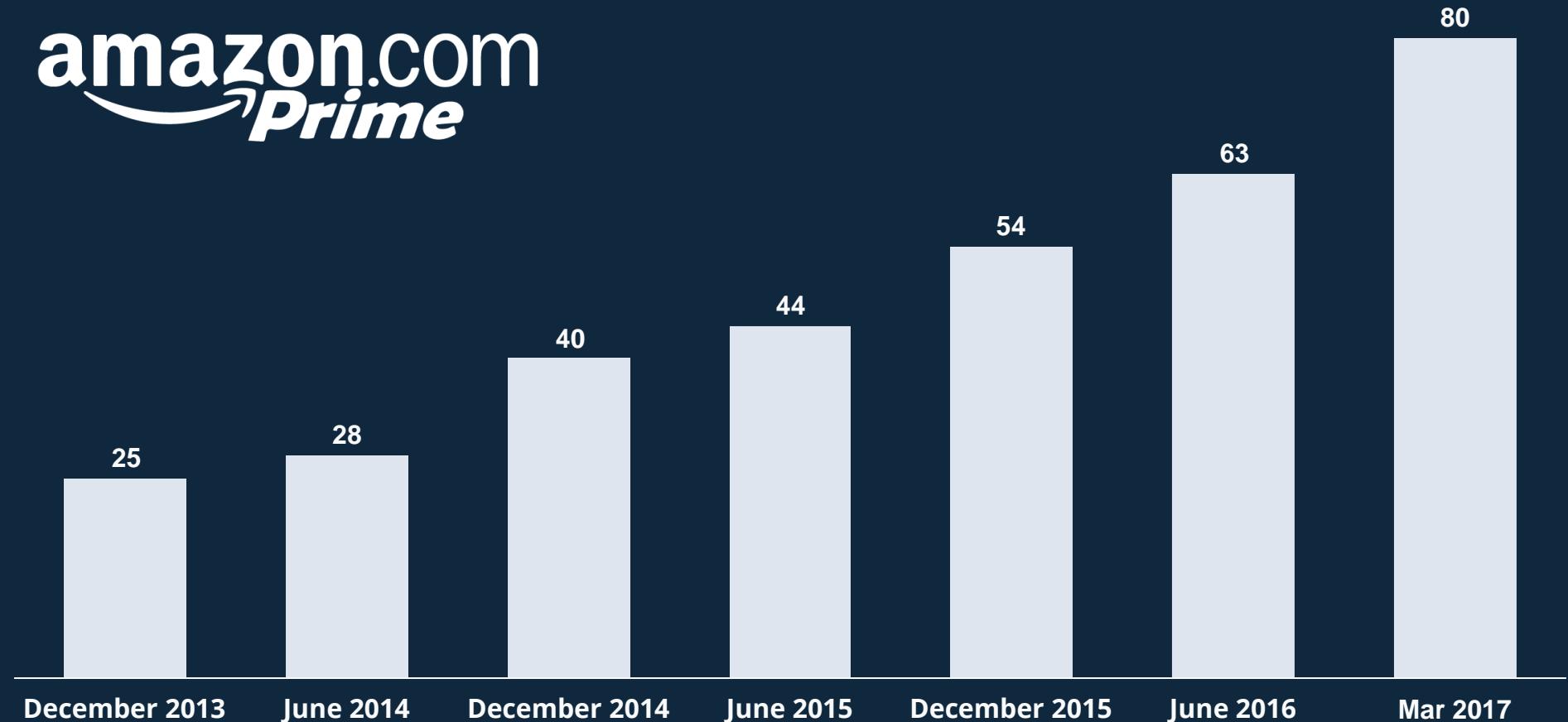
Amazon revenue development from foundation to 2016 (in US\$ million)



source: Amazon, Inc.

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

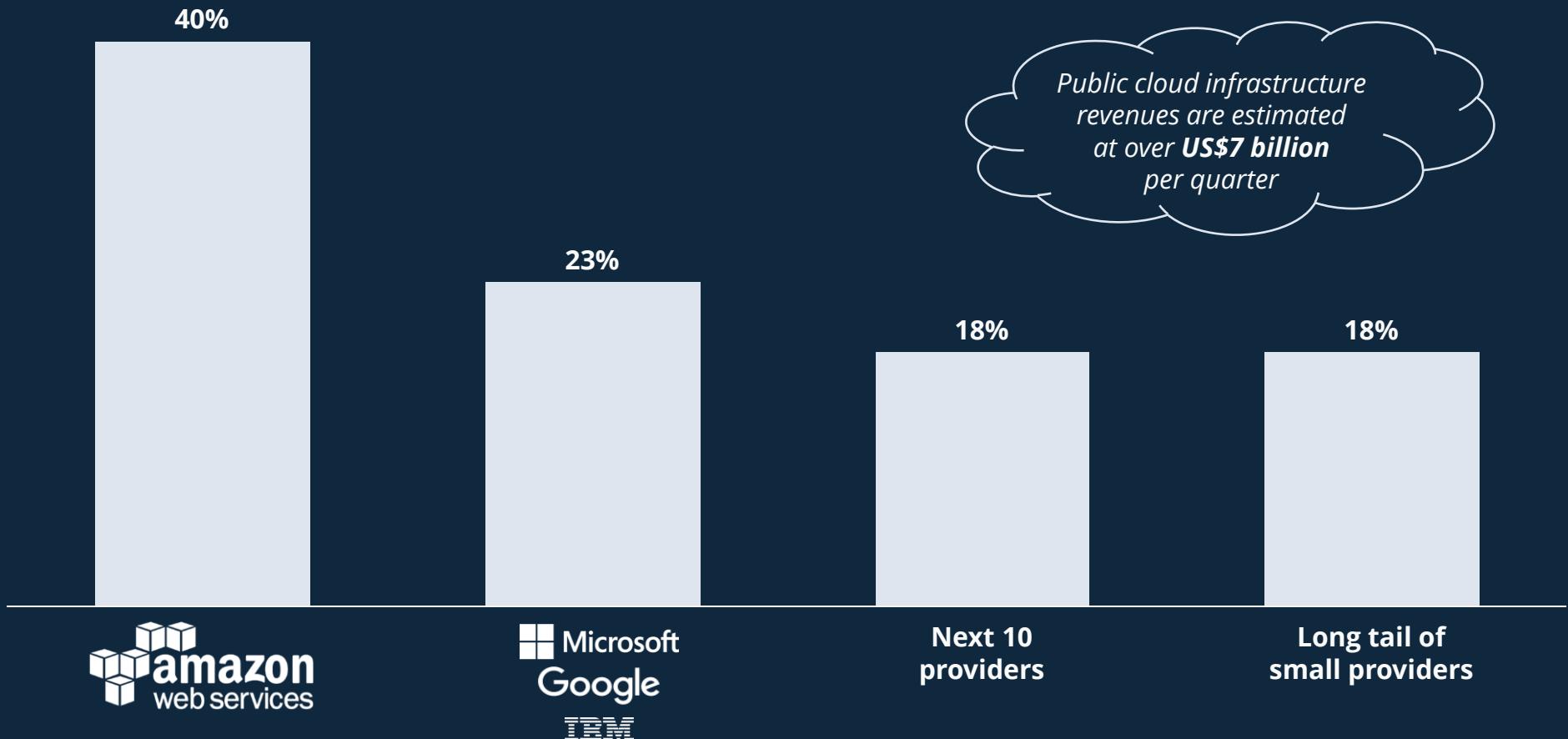
Amazon Prime subscribers in the United States (in million users)



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

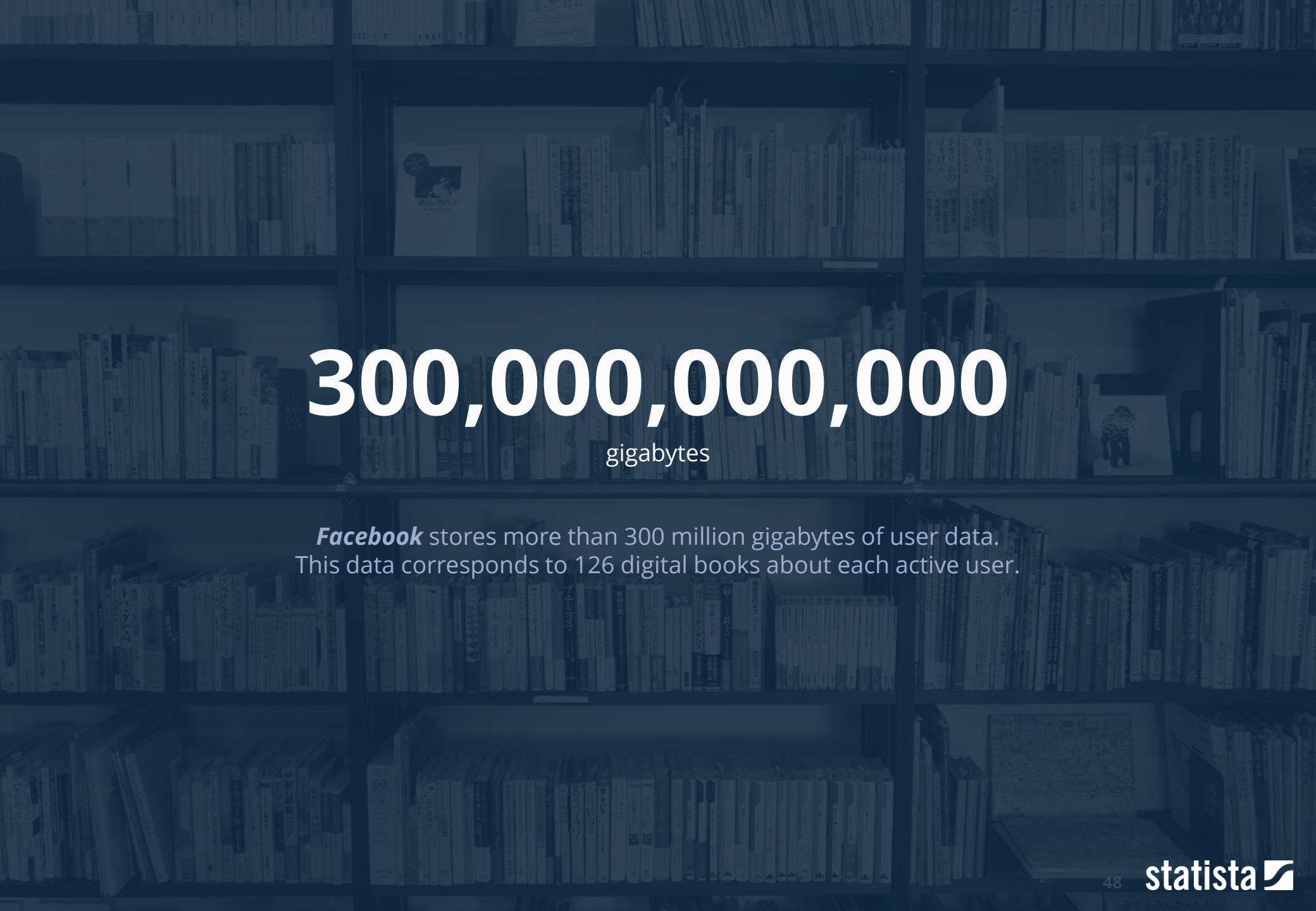
Amazon is far more than just an e-Commerce giant; it also controls the public cloud landscape

Global public cloud infrastructure¹ 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

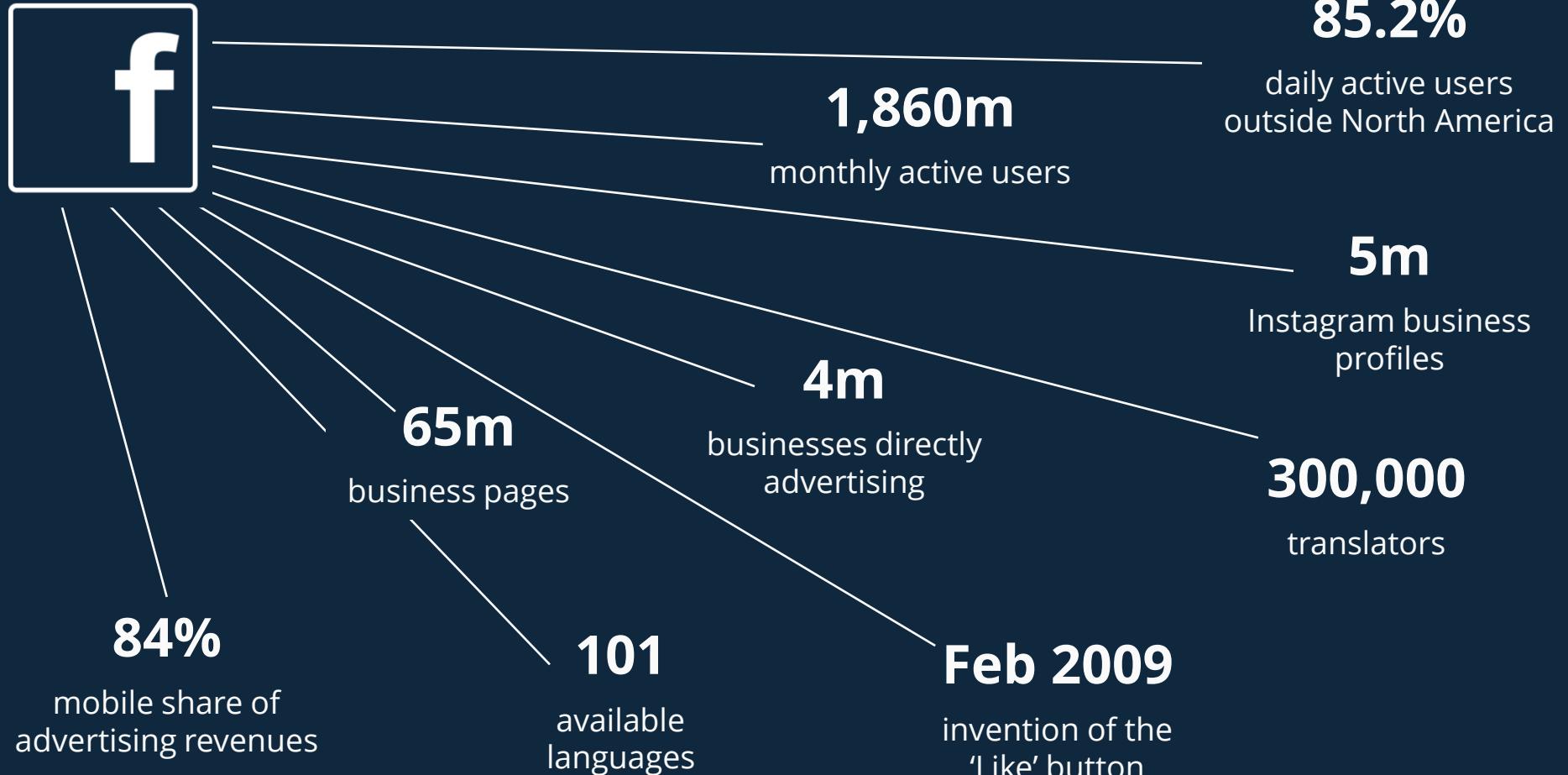


300,000,000
gigabytes

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 MAU¹ with 85.2% of them located outside of North America

Facebook key facts



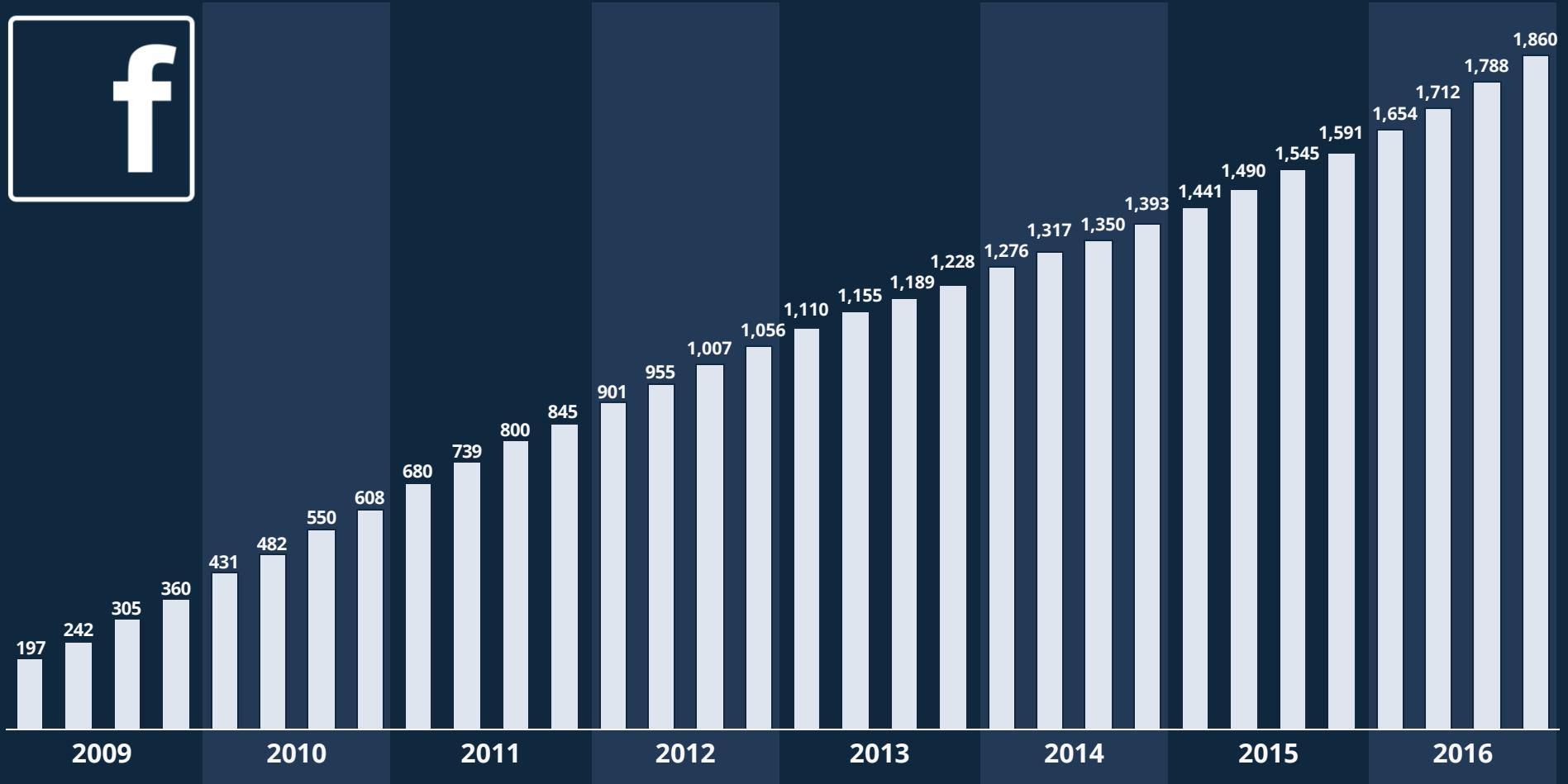
Source: Facebook Inc.

Note: all figures as of Q4 '16

1: MAU = monthly active user

Facebook's active user base has been consistently growing

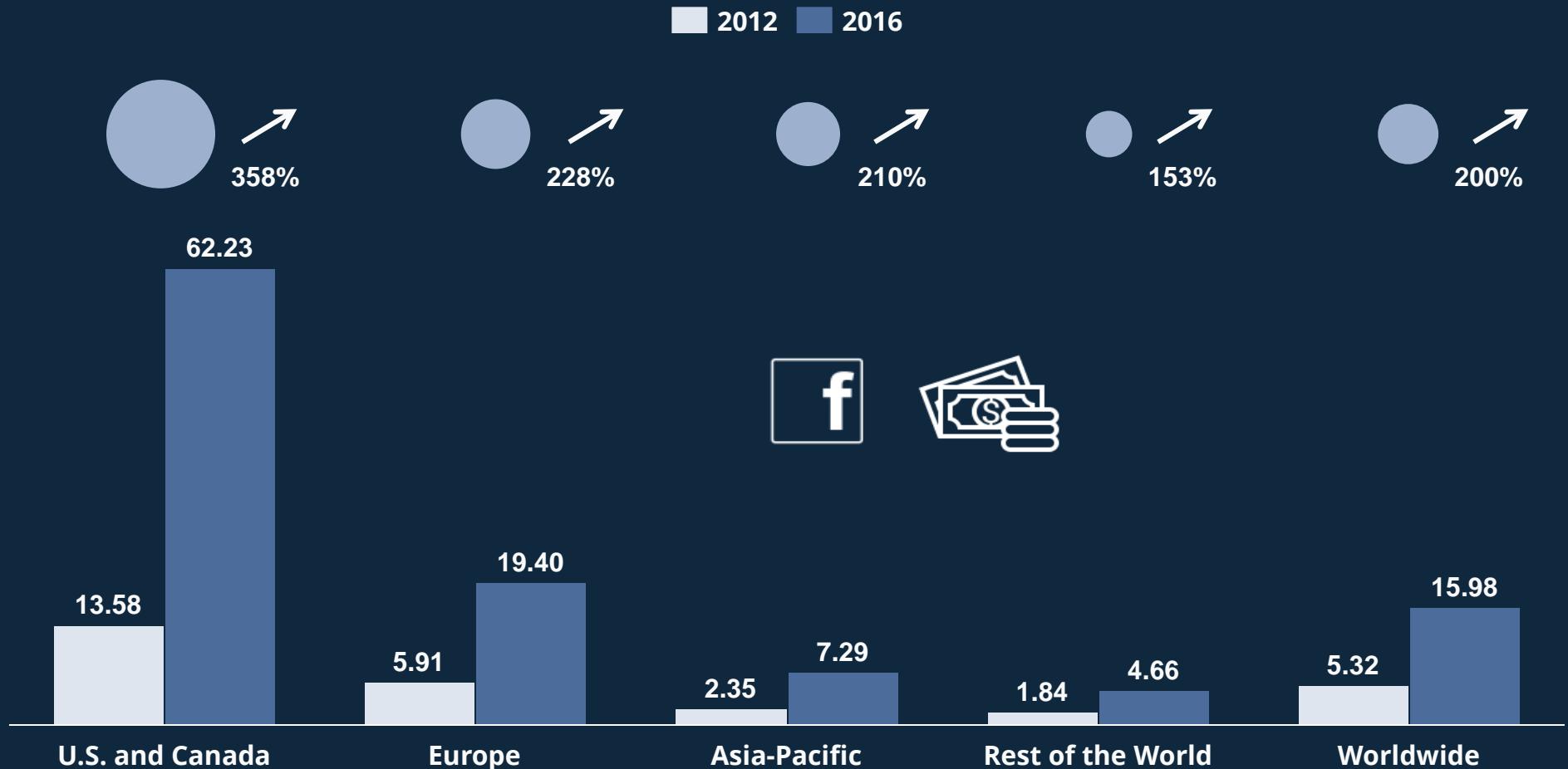
Global number of Facebook's monthly active users (in million users)



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 2007¹

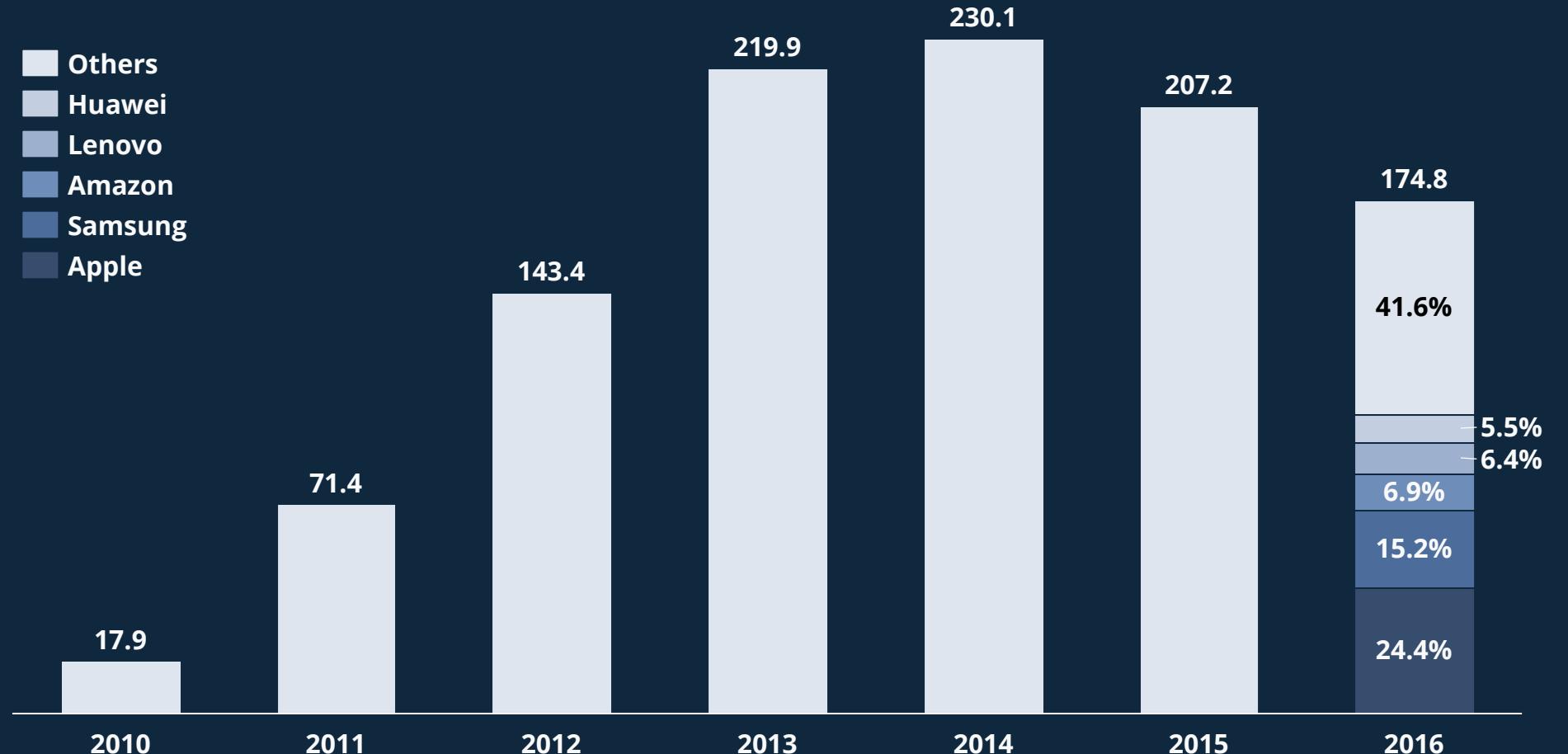


source: Company Information

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

Apple is the biggest vendor in a shrinking tablet market

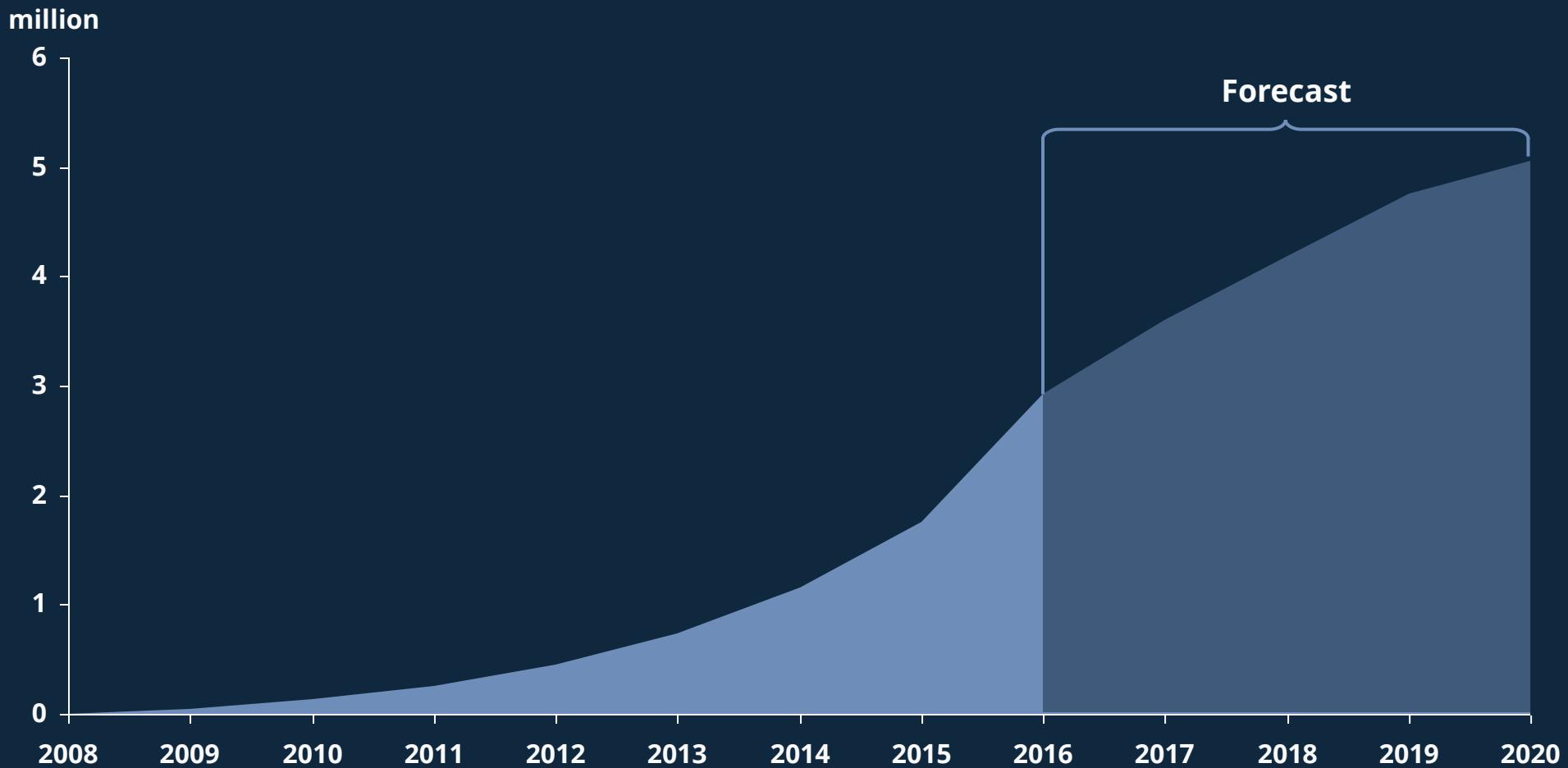
Global tablet shipments in 2016 in millions



source: IDC

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

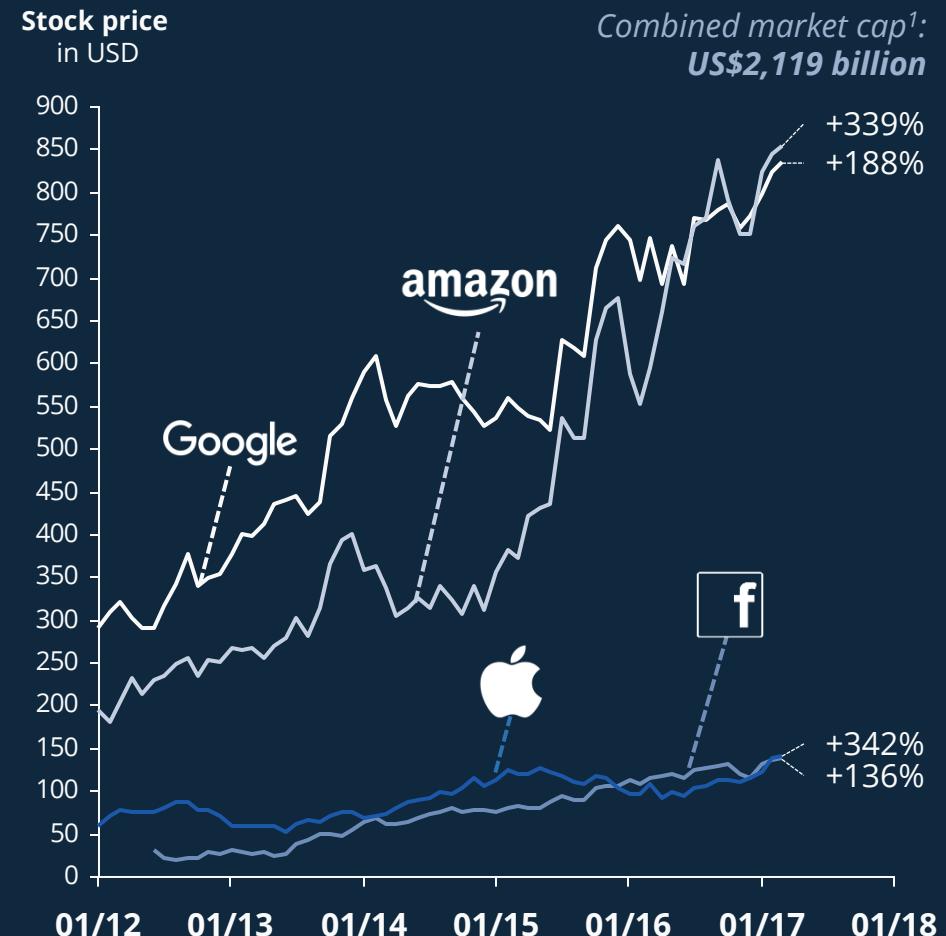
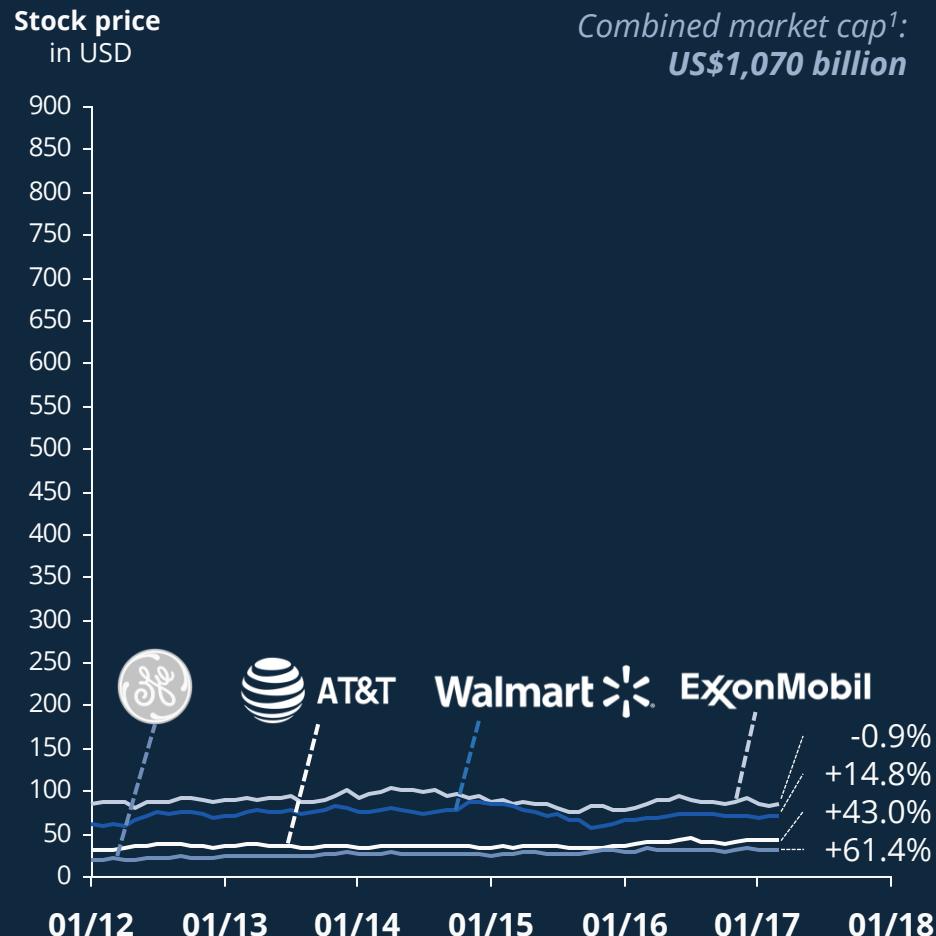
Projected number of active apps in Apple's App Store worldwide by 2020



source: SensorTower

Stock market prices reflect the tech-giants' development

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



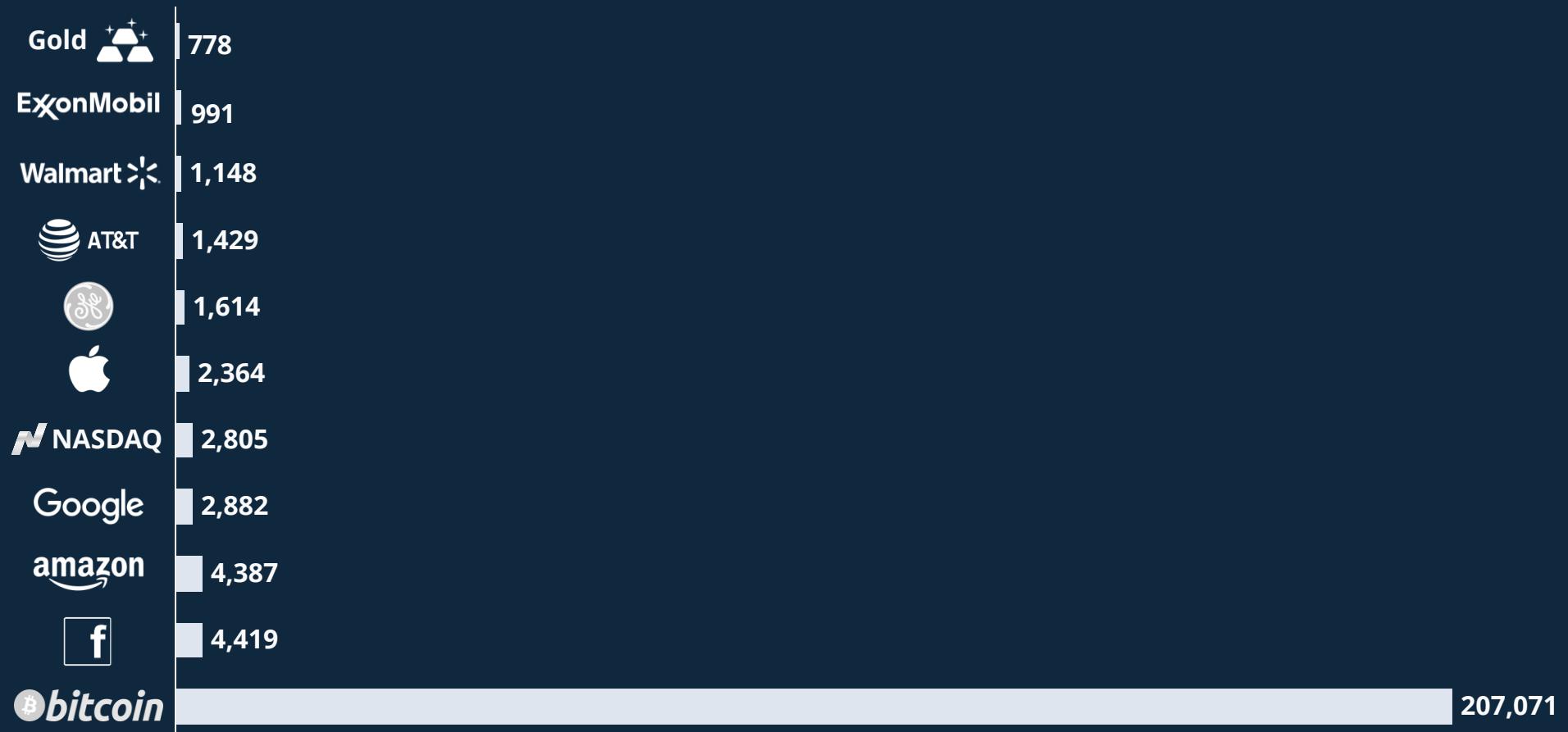
Source: Yahoo! Finance

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



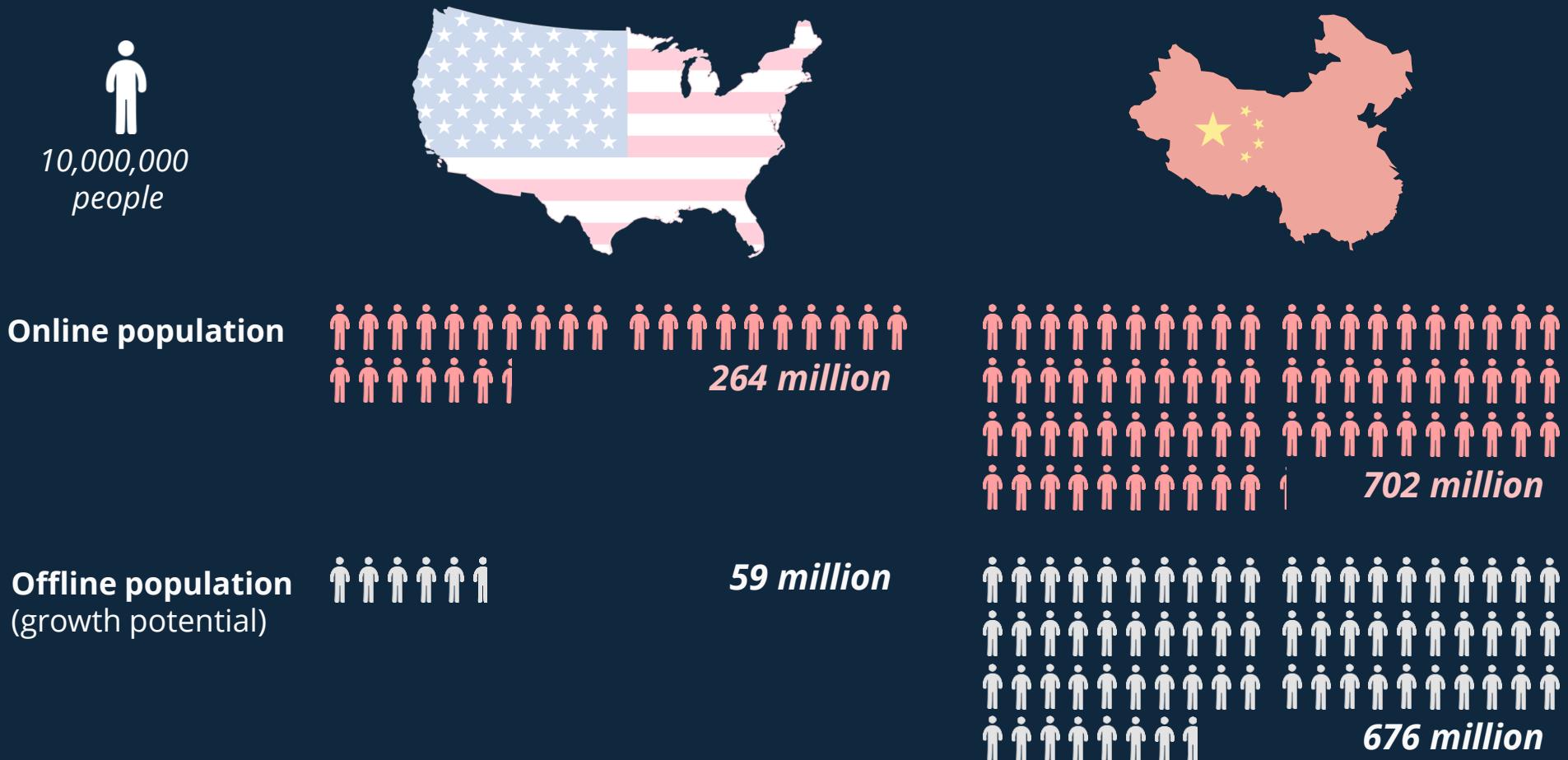
PayPal

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)
Revenues¹: US\$10.20 billion
Net income¹: US\$1.68 billion
Employees: 45,887
Market cap: US\$60.04 billion



Founded: 11-1998
HQ: Shenzhen
CEO: Ma Huateng (since 11-1998)
Revenues¹: US\$21.97 billion
Net income¹: 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

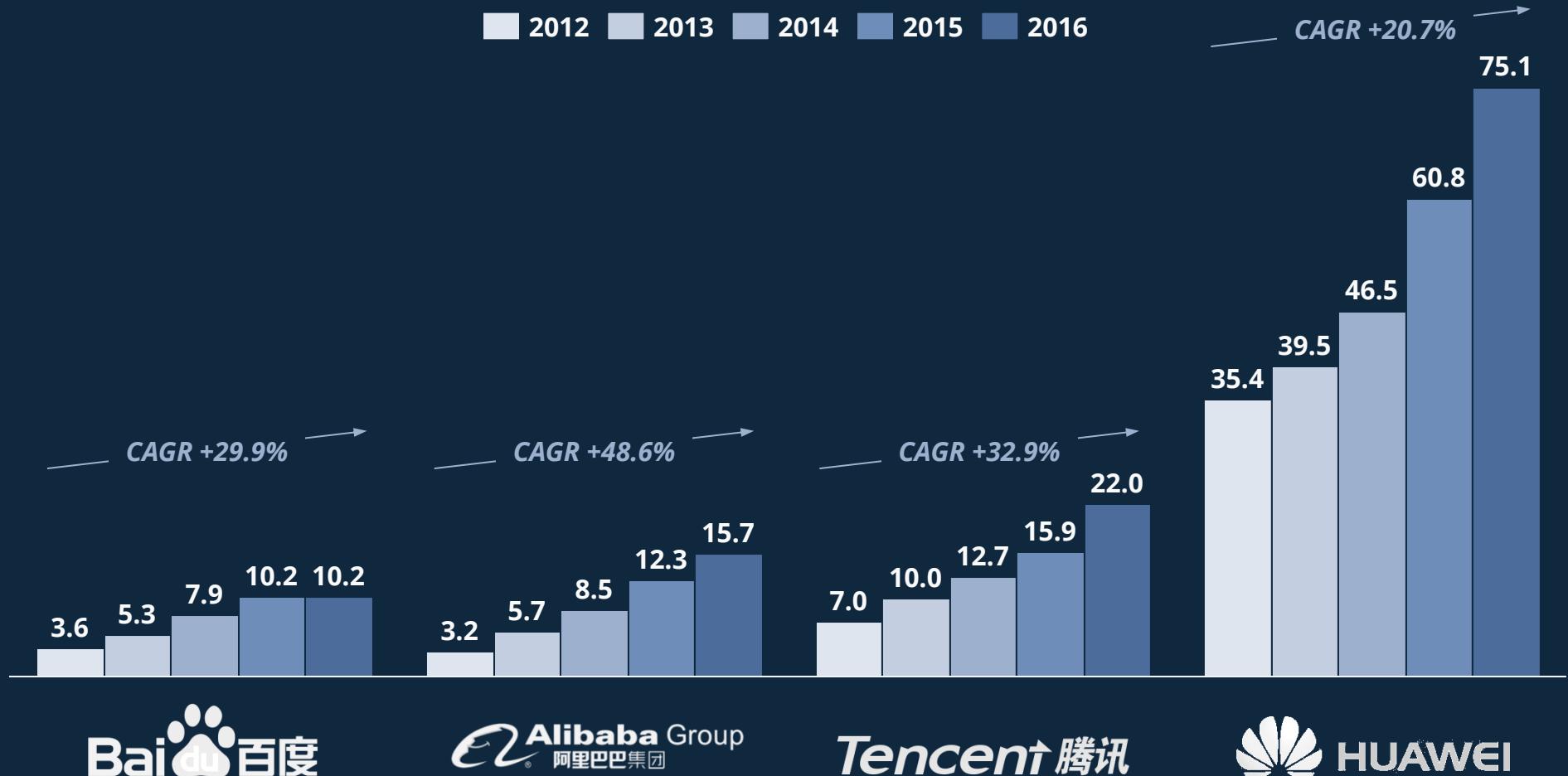
Source: Company Information; Yahoo! Finance

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)



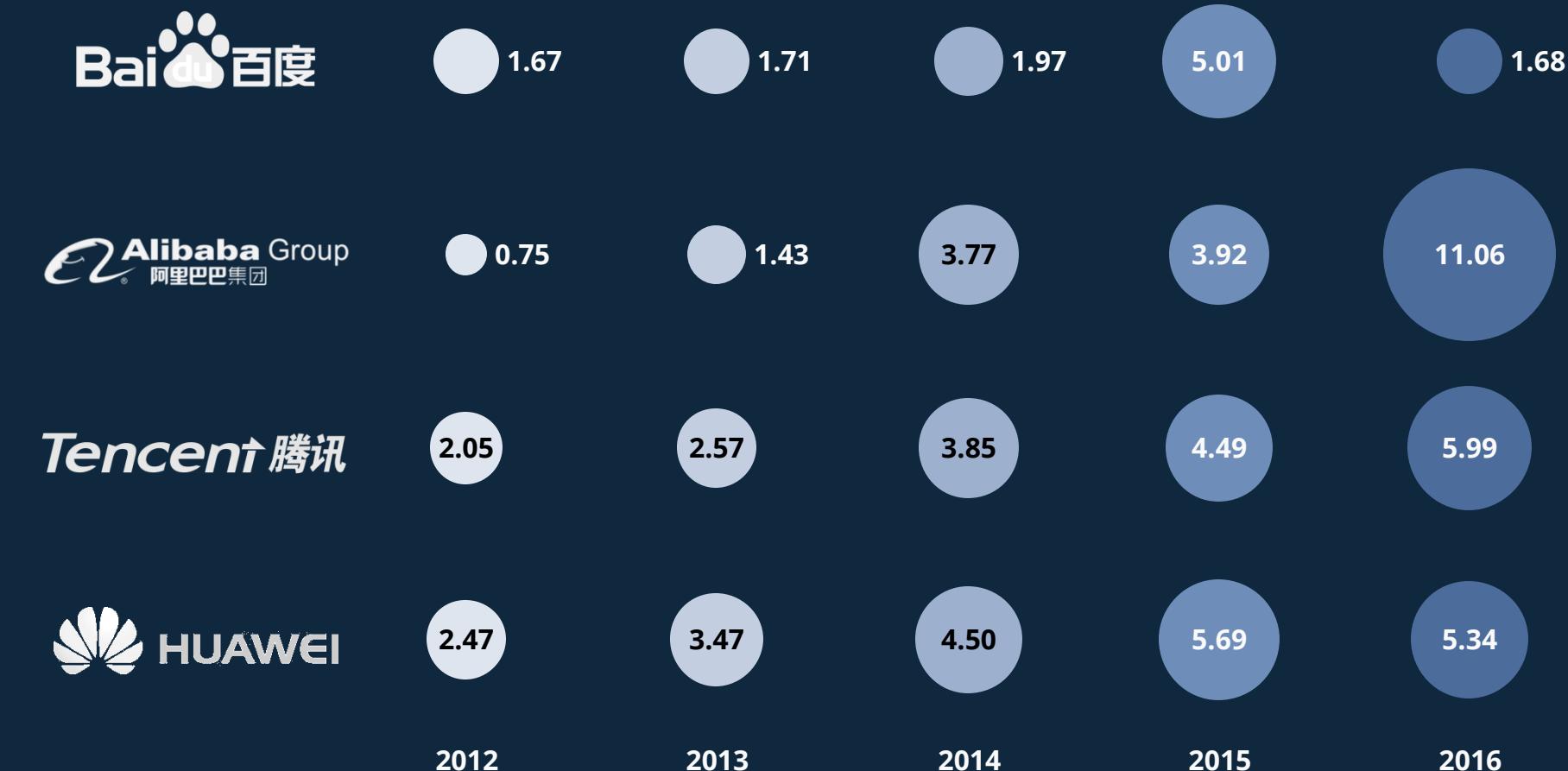
Source: Company Information

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



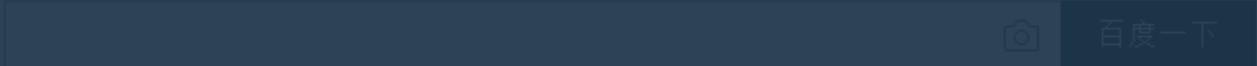
Source: Company Information

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	
Baidu 百度	IndoorAtlas		Cloudflare IndoorAtlas	Taboola GWC	Dynamic Yield Velodyne LiDAR	ZestFinance
Alibaba Group 阿里巴巴集团	Peel Kabam Lyft	Tango 1stdibs	Lyft Mei.com	Snap Inc. Quixey	Barefoot Networks	Magic Leap PlaceIQ
Tencent 腾讯	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

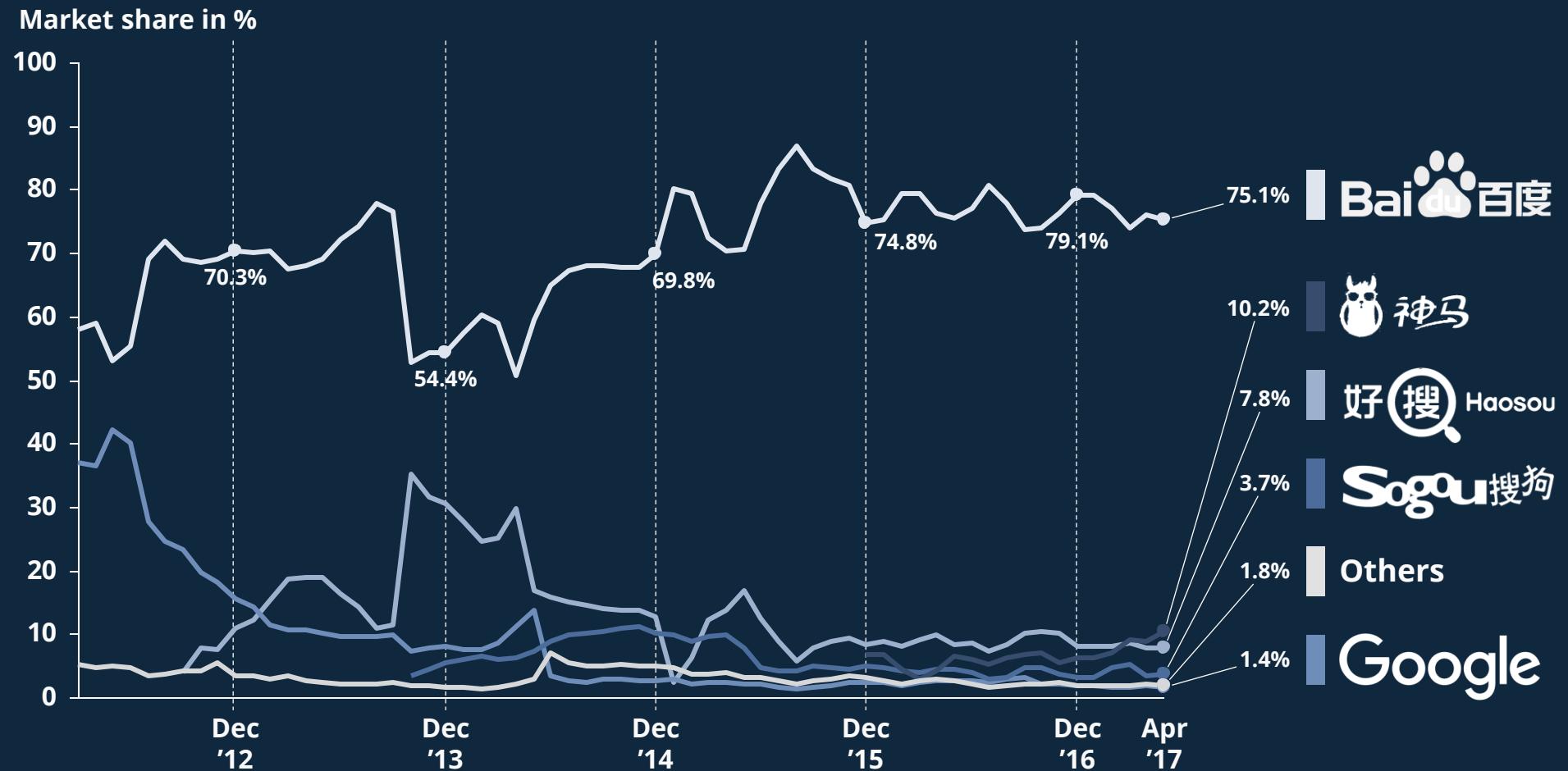


Source: Chinainternetwatch.com, StatCounter.com, Alexa.com

1: The rank is calculated using a combination of avg. daily visitors and pageviews over the past three months

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

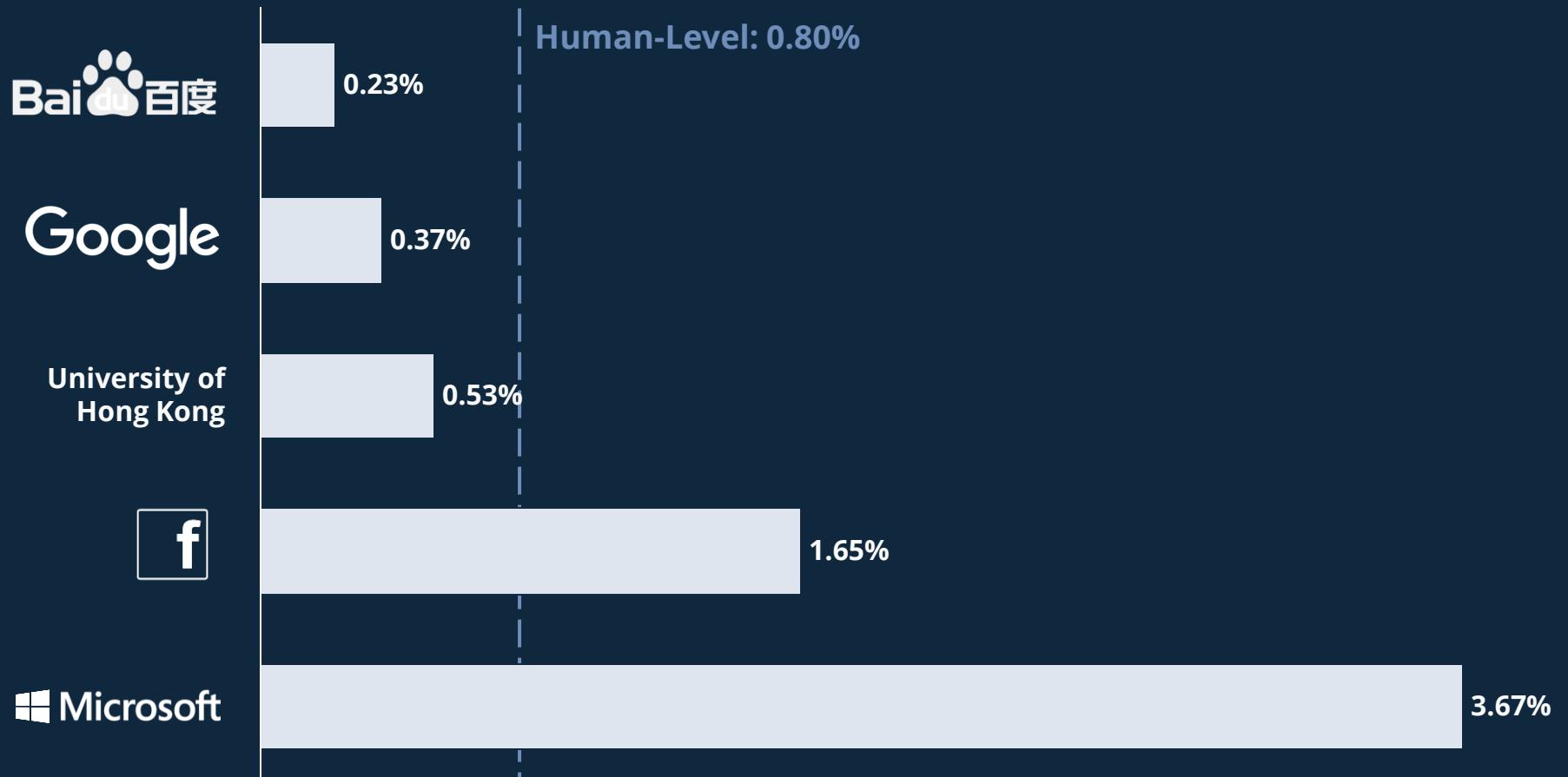
Search engine market share in China (in percentage)



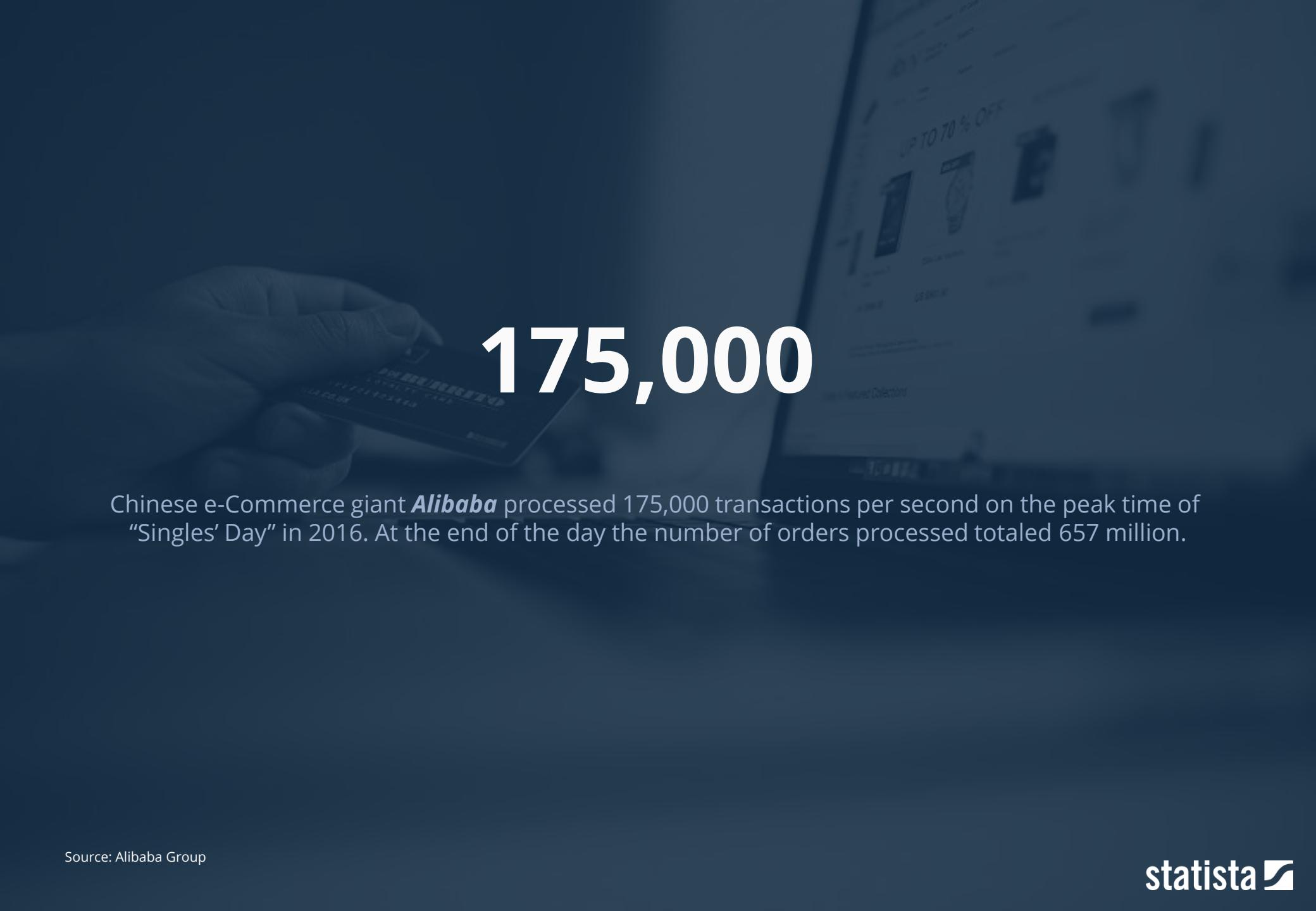
Source: StatCounter.com

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



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

Alipay 余额宝

Alipay

LAZADA
GROUP

E-Commerce

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

Source: Alibaba Group

Others

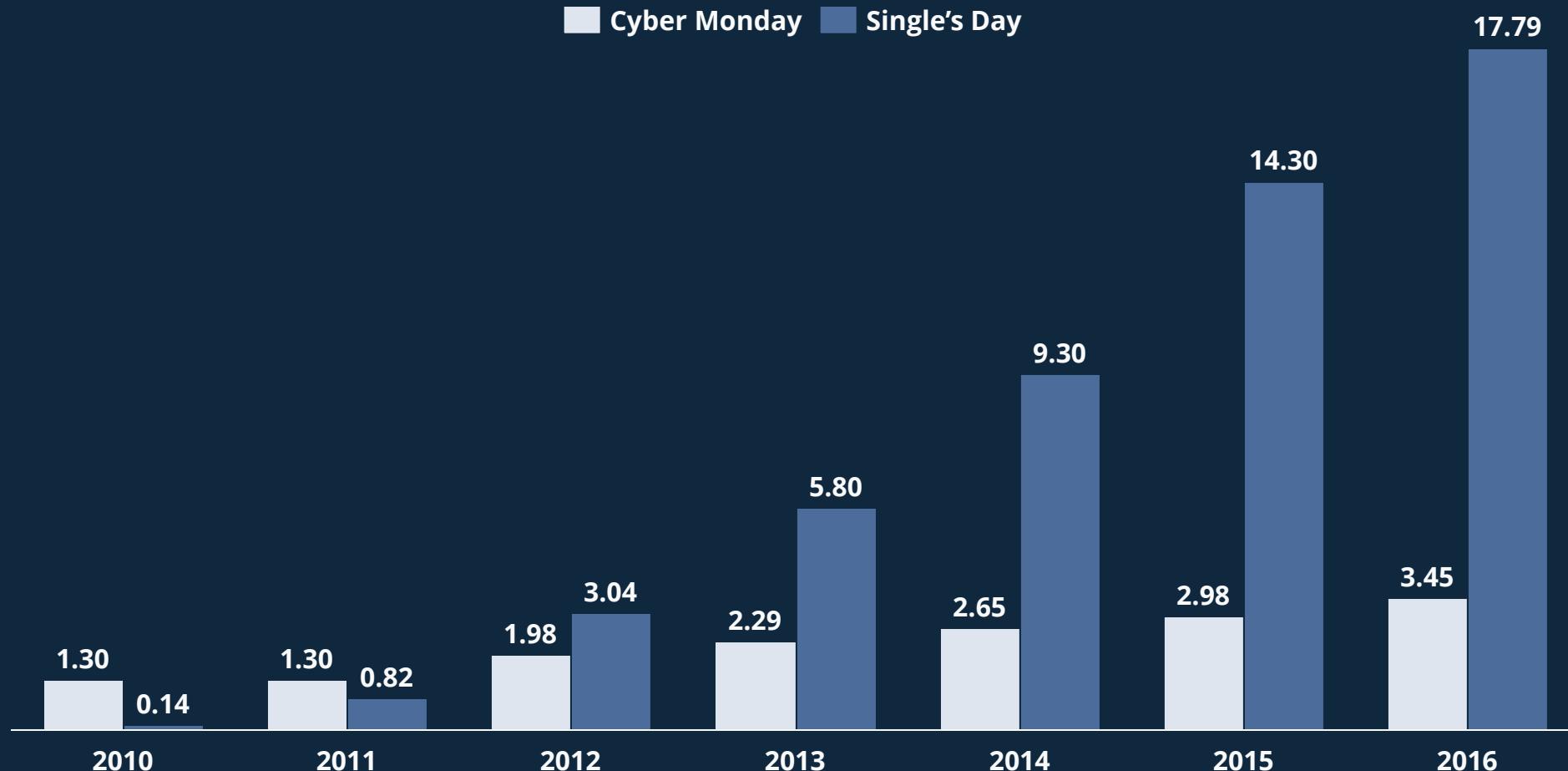
Core Business

70

statista

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

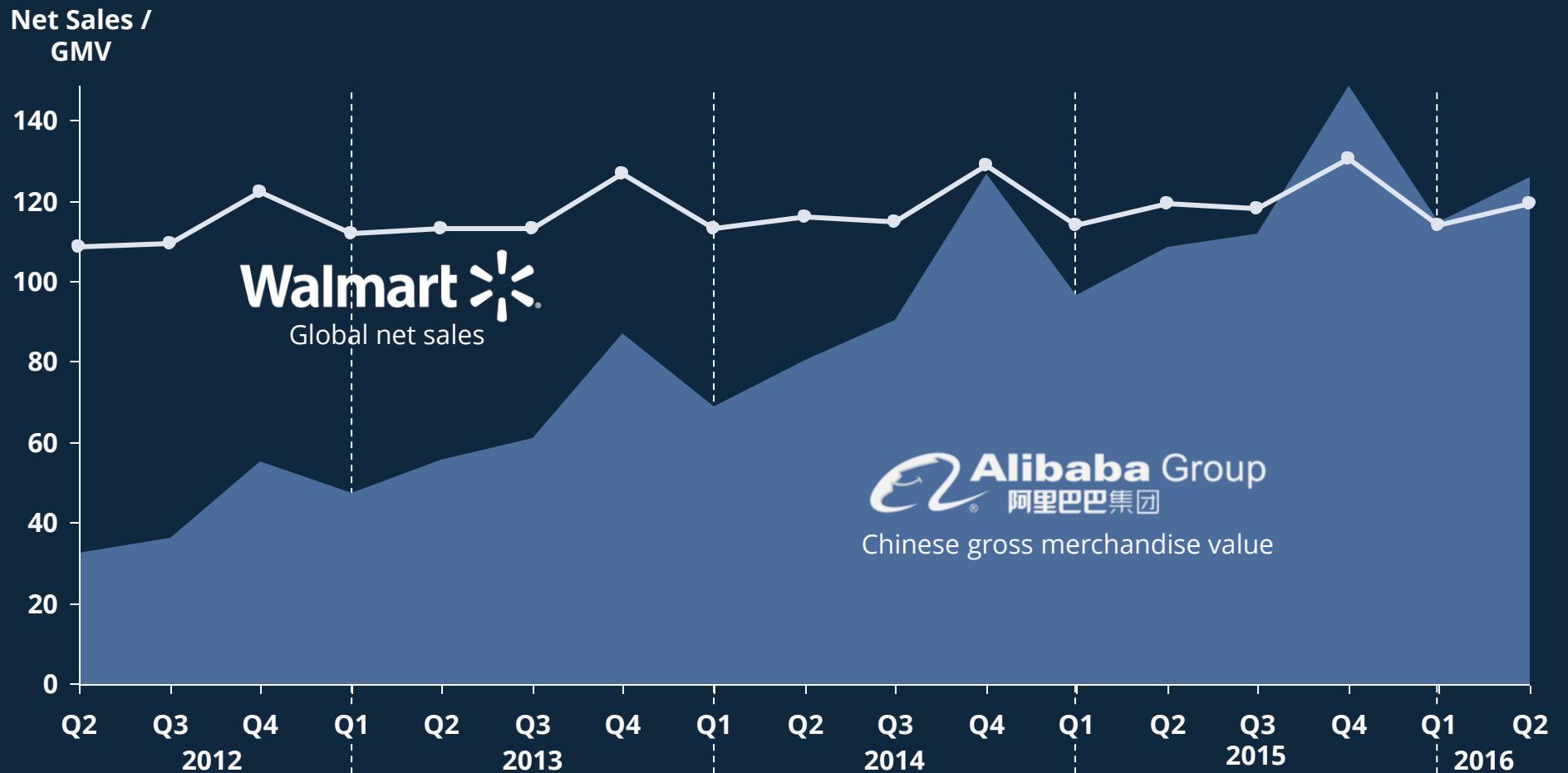
U.S. Cyber Monday spending and Alibaba Single's Day GMV (in US\$bn)



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

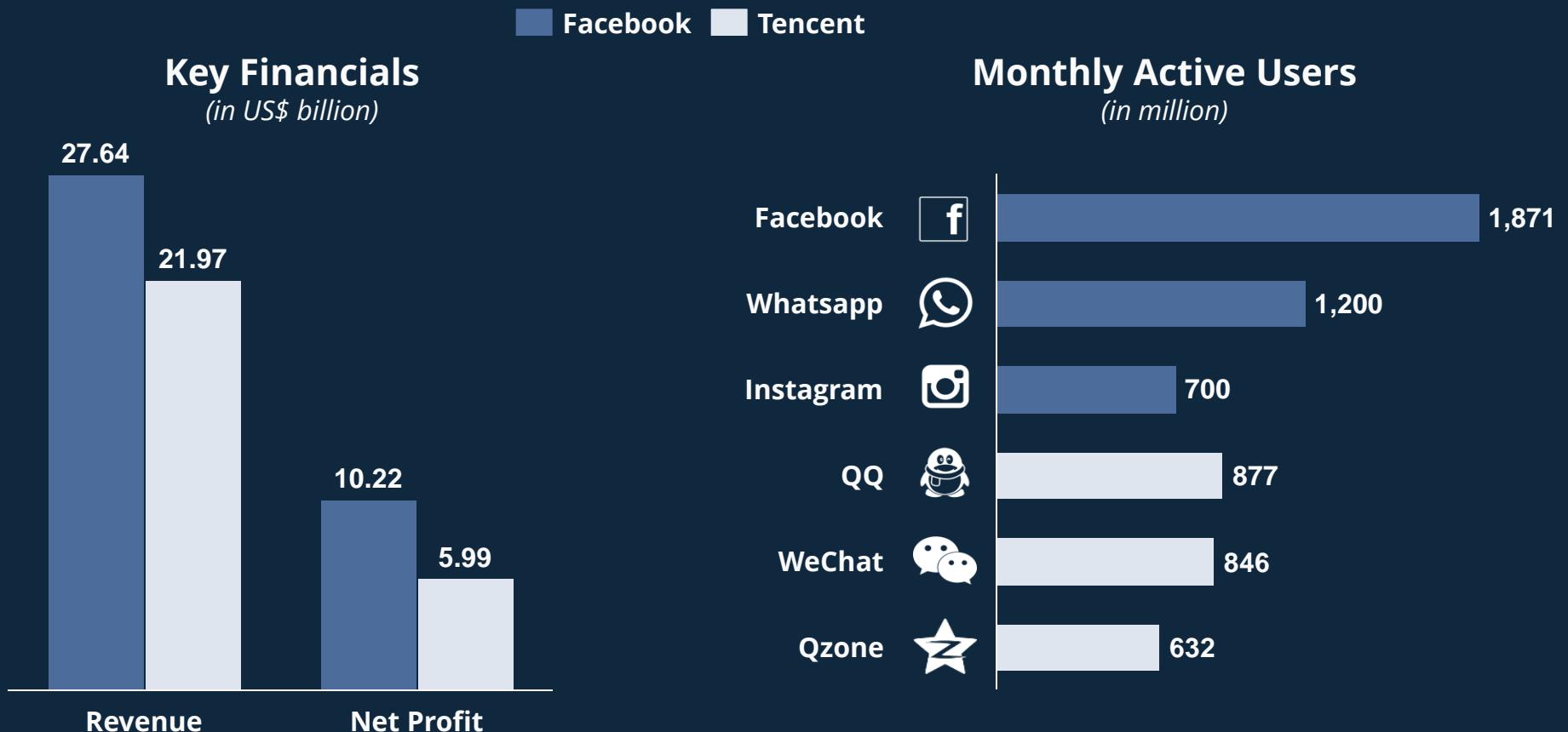


“Will **Tencent** join the likes of *Amazon, Google, Facebook* and *Twitter*? [...] They already are in that league. The rest of the world just doesn't know it.”

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					
Geographical focus	China 						US  Europe 					
Monthly active users	846 million						1,200 million					
Price	Free of Charge						Free of Charge					
Monetization	Transaction Fees & Mobile Advertising						✗					
➤ Social & Communication	 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		
➤ Leisure & Commerce	 Newsfeeds	 Translation	 Taxi Reservation	 Event Organization							✗	
	 Price Checks	 e-Commerce	 Online Ticketing	 Mobile Banking								
➤ Media & Gaming	 Music	 Mobile Gaming	 Desktop Gaming								✗	

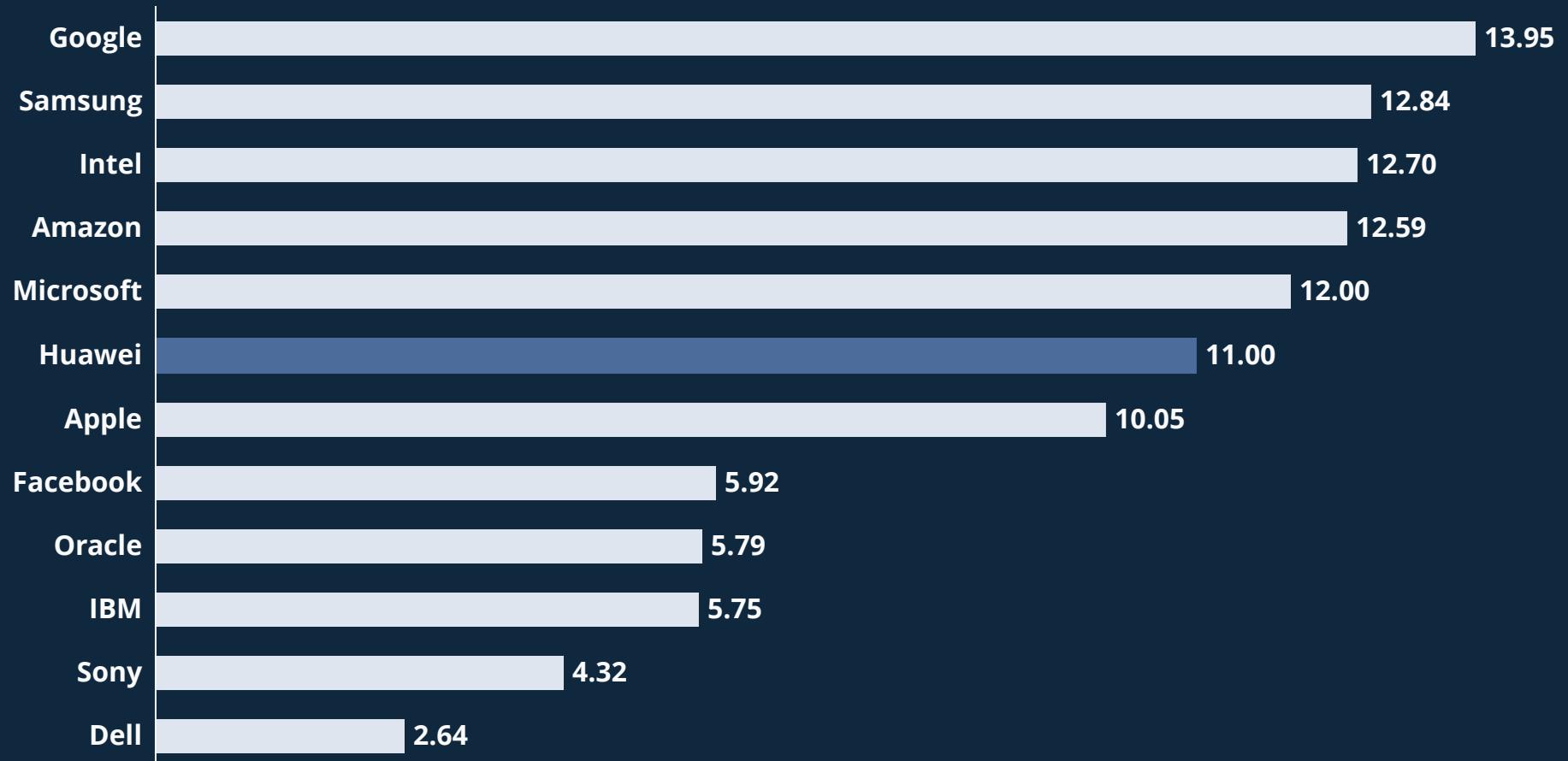
Source: Company Information, OLMA Capital Management

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

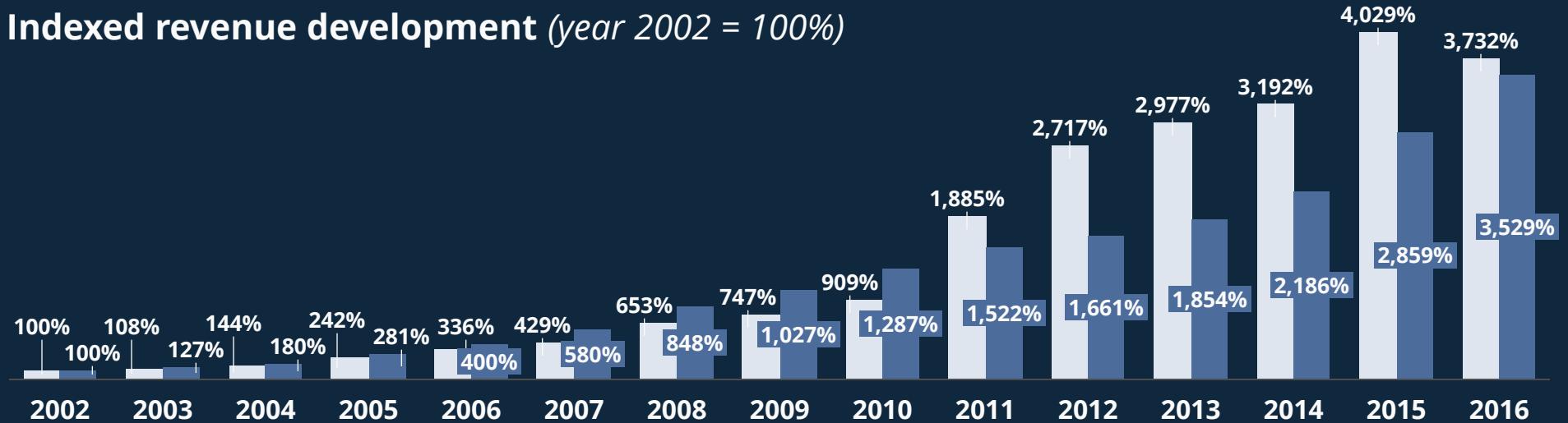
Annual revenue comparison of Huawei and Apple from '02-'16

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

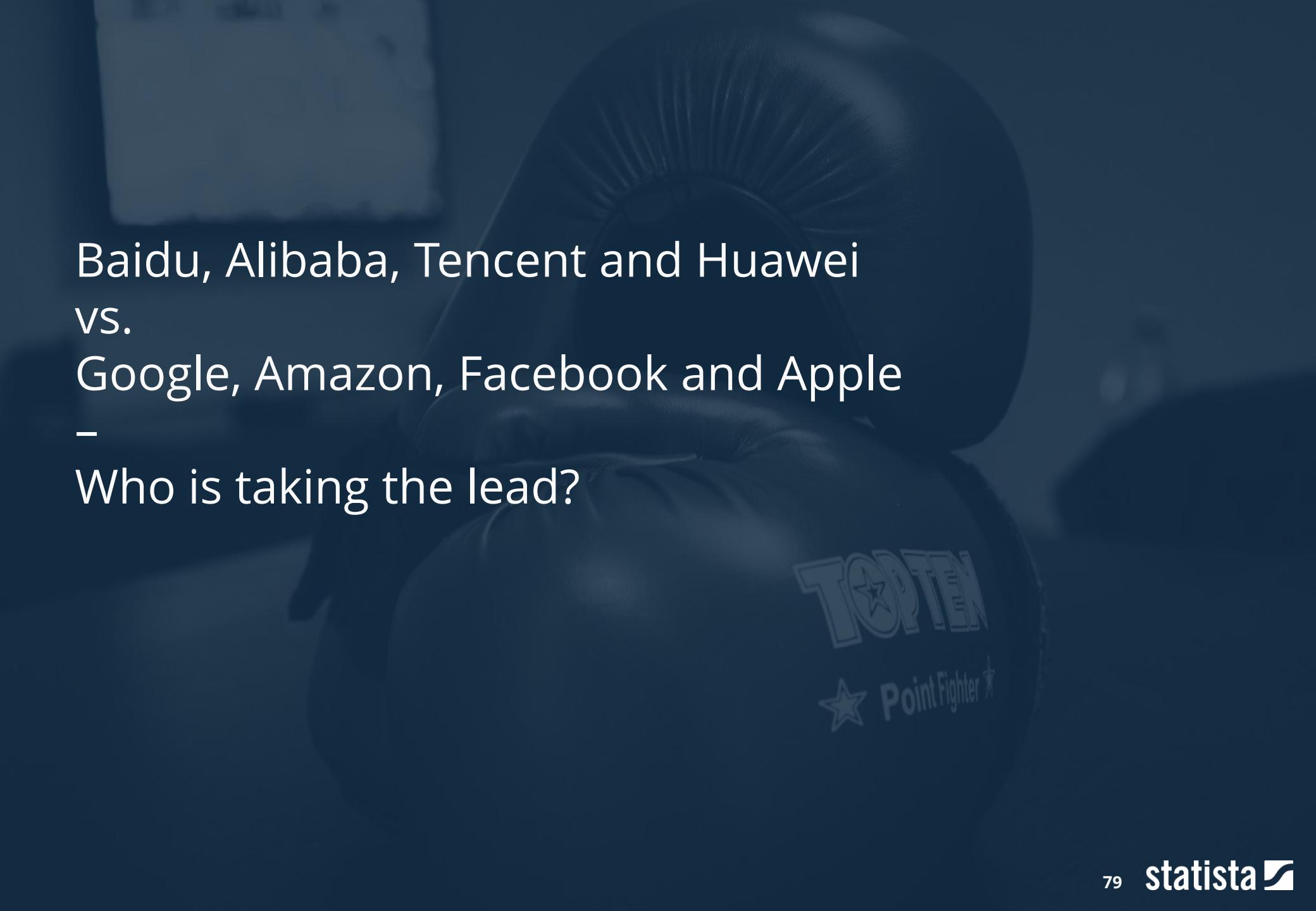


Indexed revenue development (year 2002 = 100%)



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

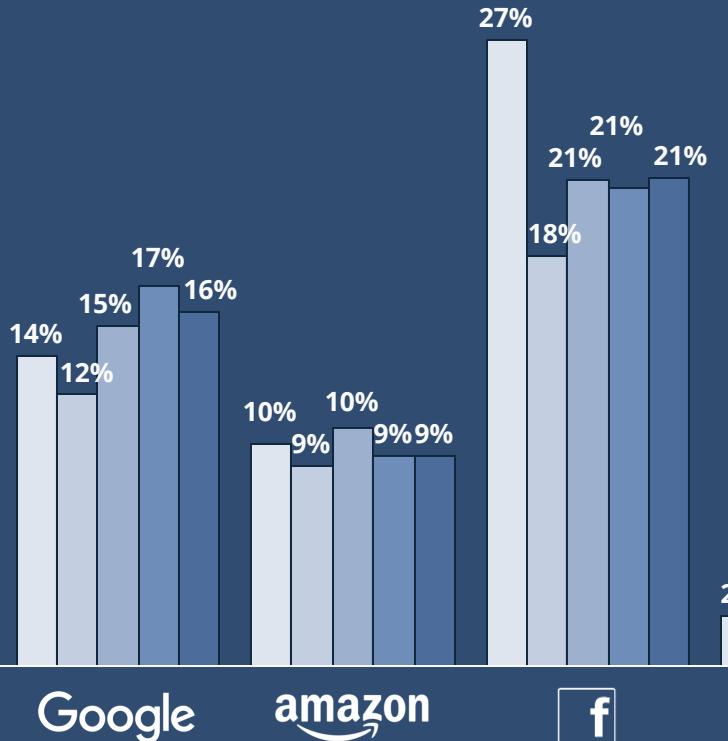
–
Who is taking the lead?

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

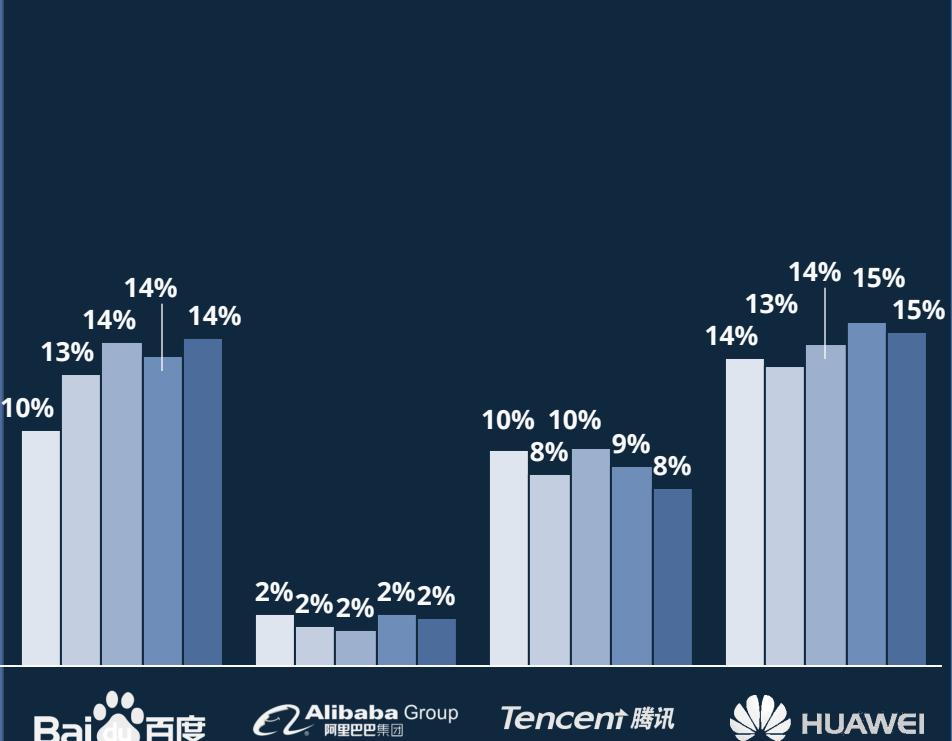
Research & Development expenditures (in percent of total revenues)

■ 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

Revenues	US\$bn	★ 89.73	10.20
CAGR ¹ '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

Revenues	US\$bn	★ 135.99	15.69
CAGR ¹ '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 ²	★ 484.6



vs. Tencent 腾讯

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



vs. Huawei

Revenues	US\$bn	★ 214.23	75.10
CAGR ¹ '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

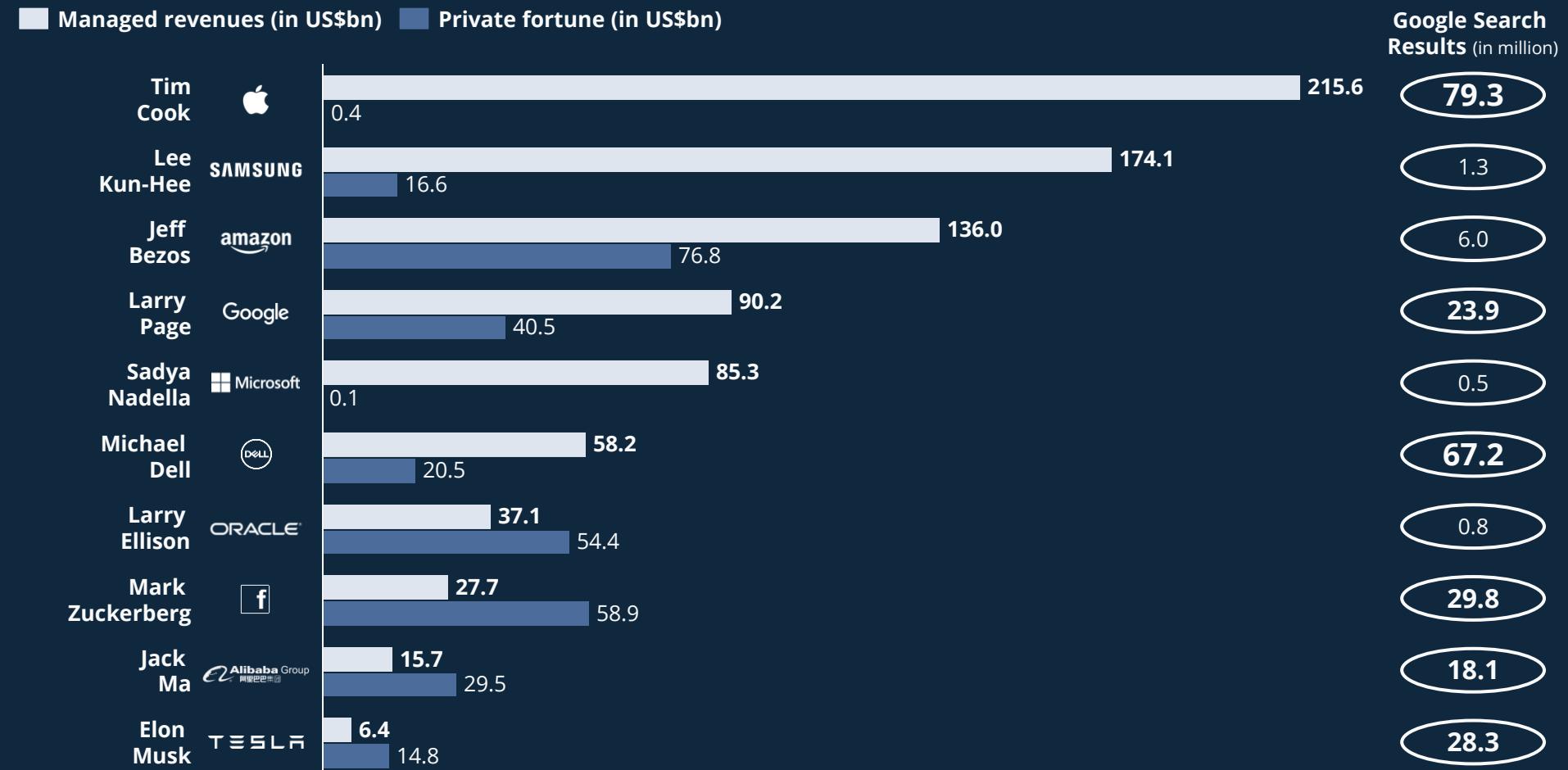
1: CAGR = Compound annual growth rate

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 stack of US dollar bills is visible in the background, slightly out of focus, creating a financial theme for the data presented.

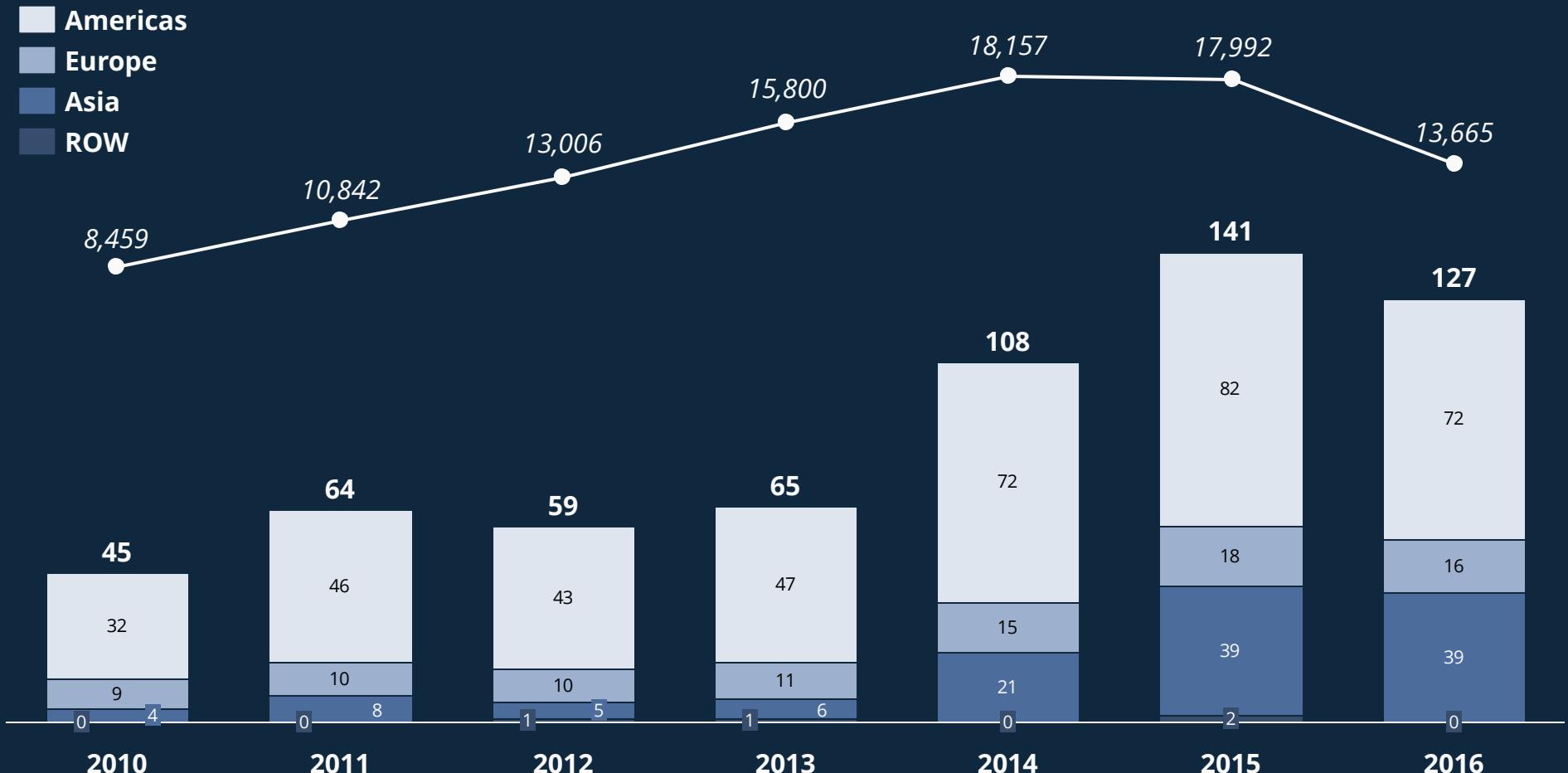
7,300,000,000

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)

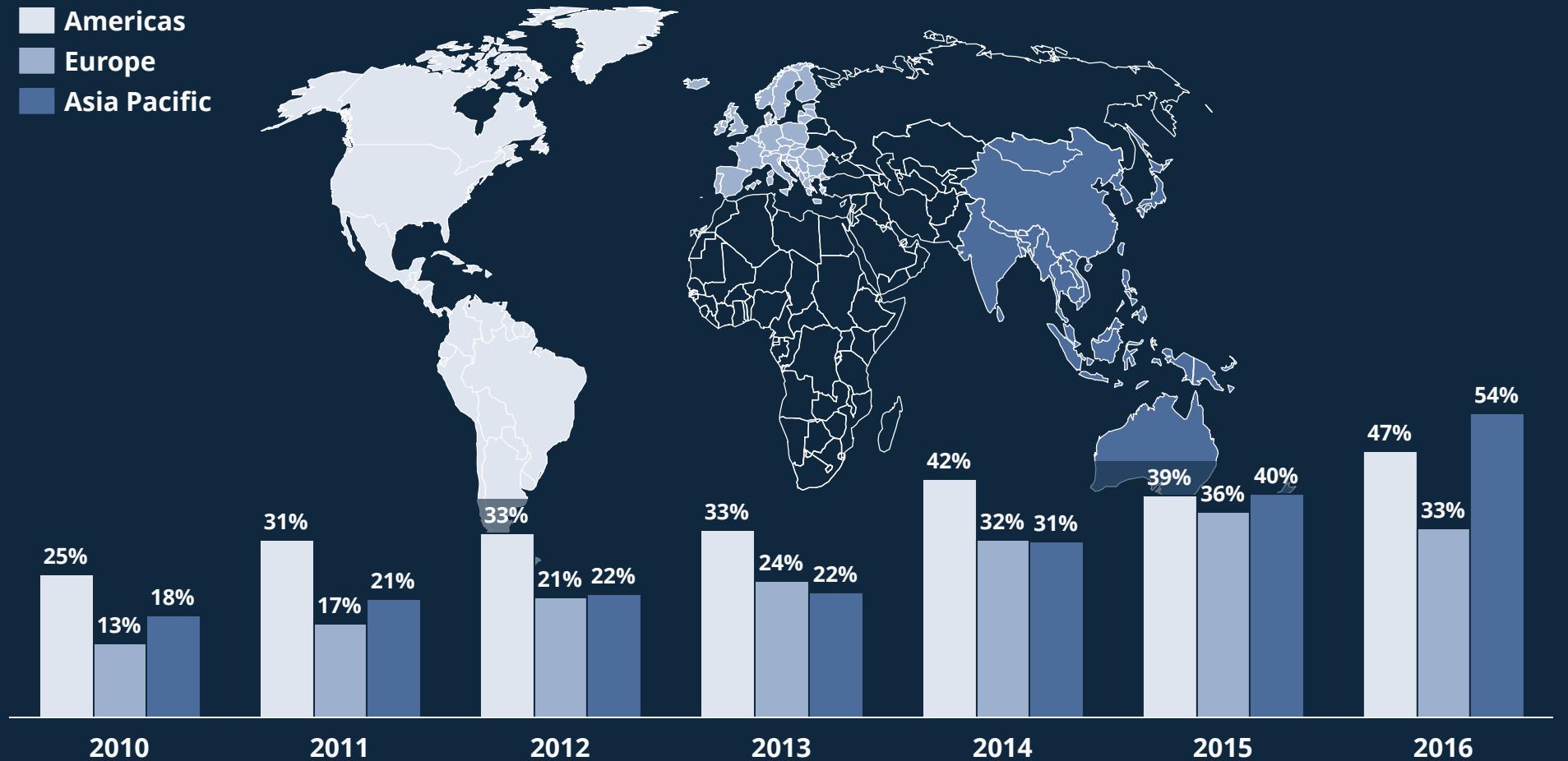


Source: KPMG Enterprise, PitchBook

■ Capital invested ● Deal count

“Software is eating the world” – at least in the case of VC financing

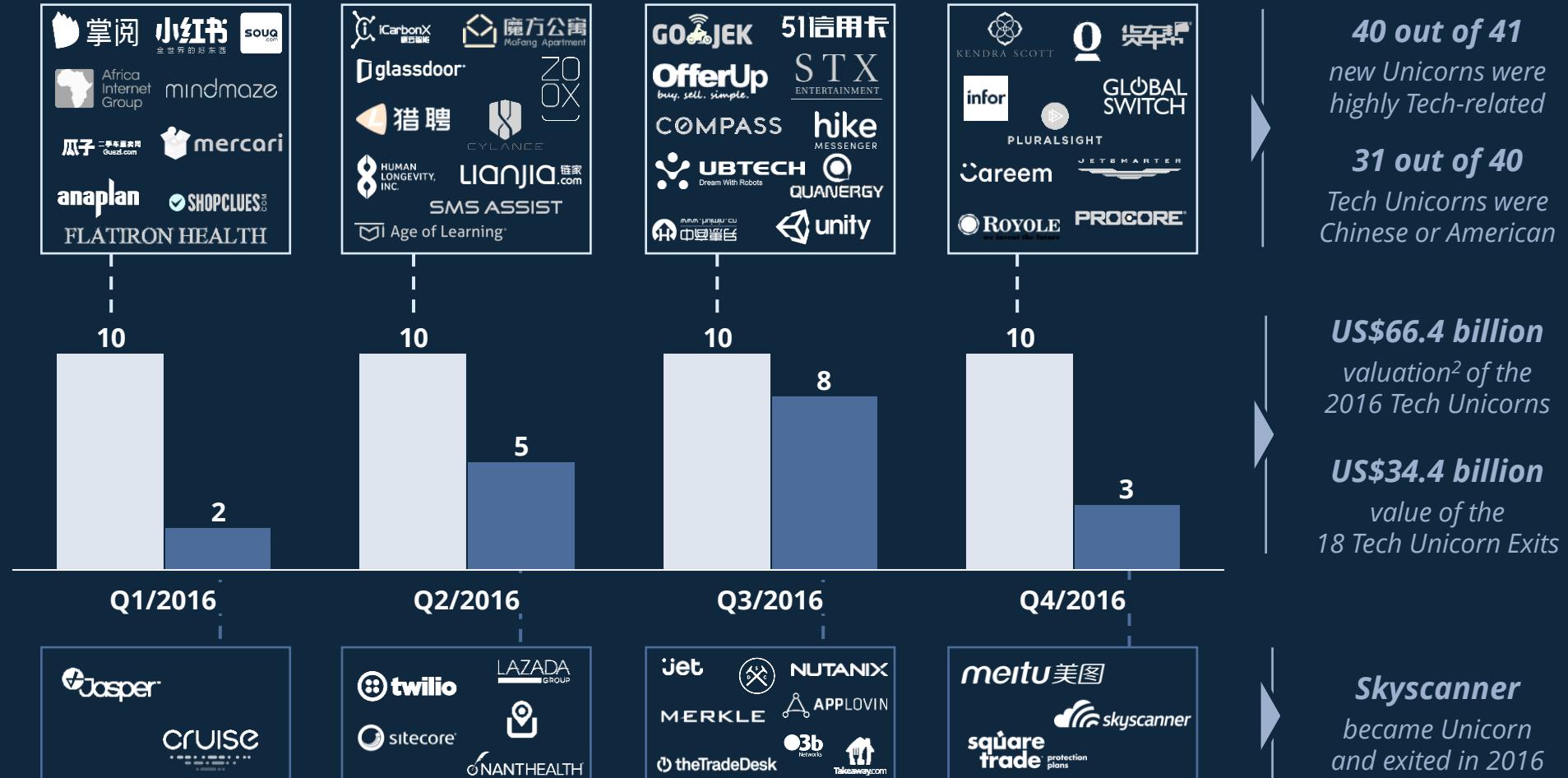
Software sector share in venture financing in a regional comparison



Source: KPMG Enterprise, PitchBook

The stereotype Unicorn¹ 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

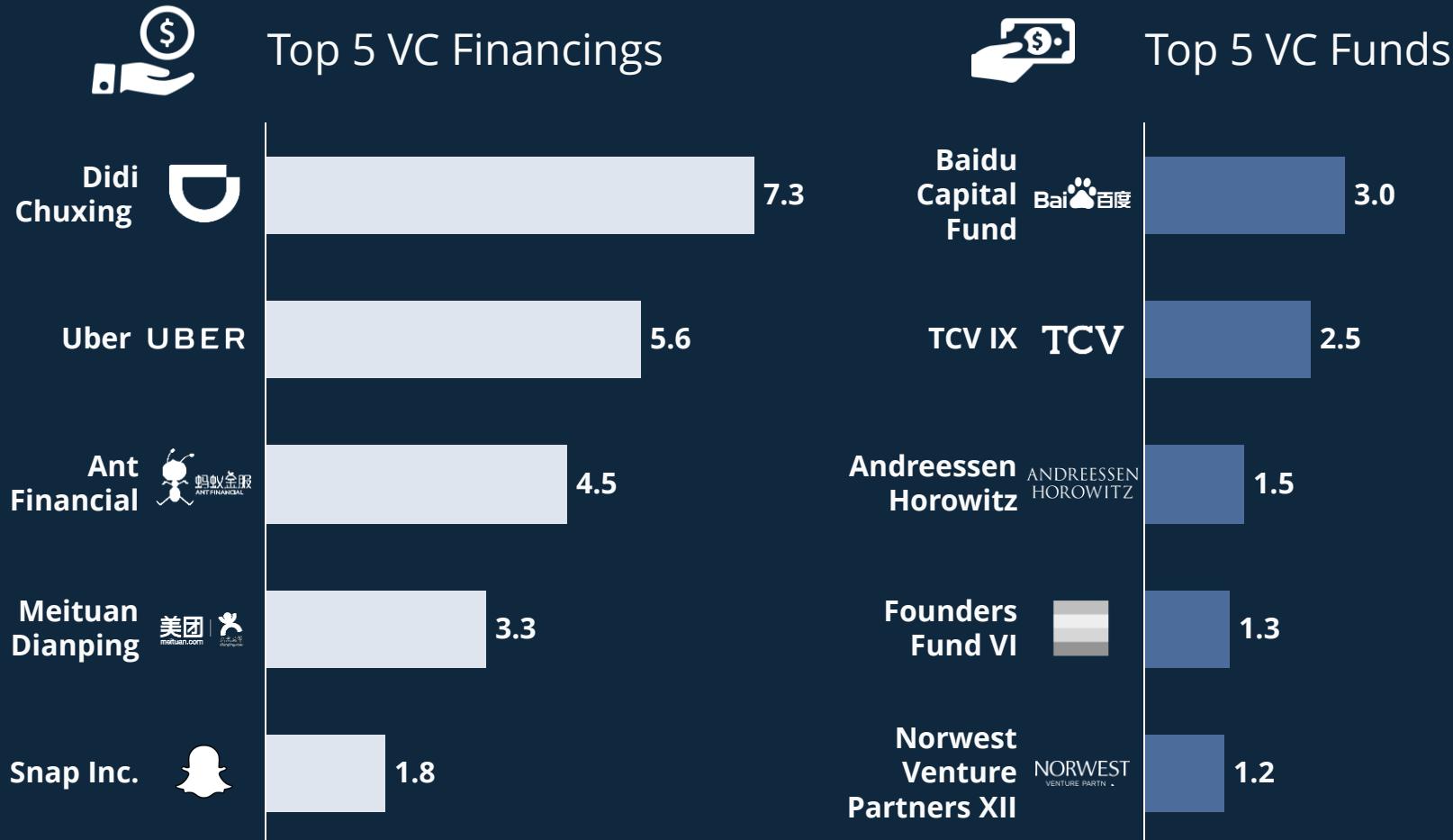
2: Company valuation as per 03-15-2017

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)

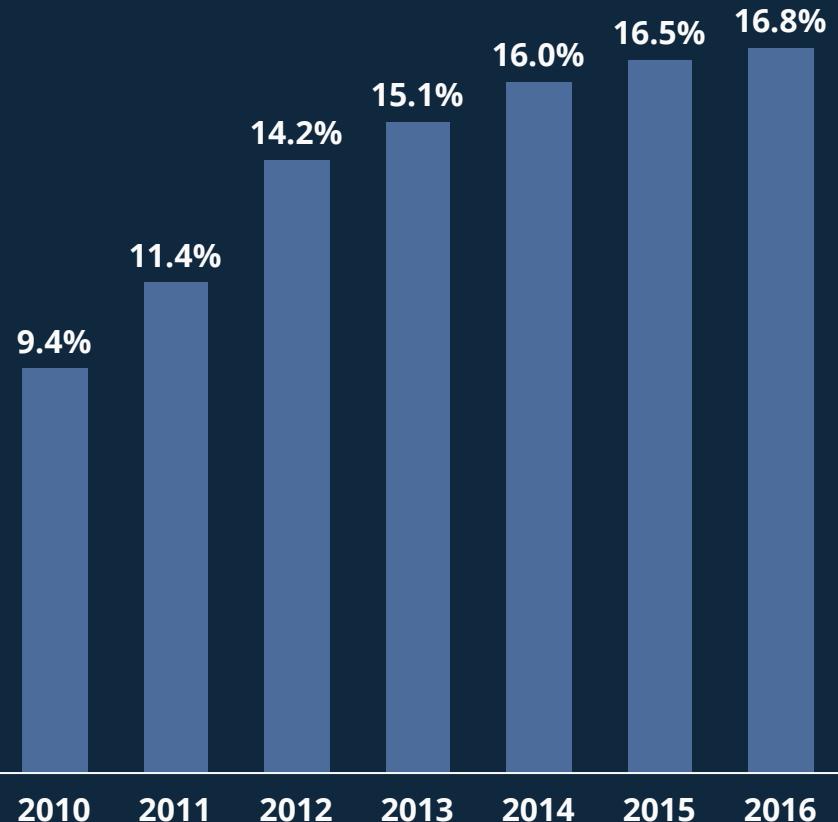


Source: PitchBook

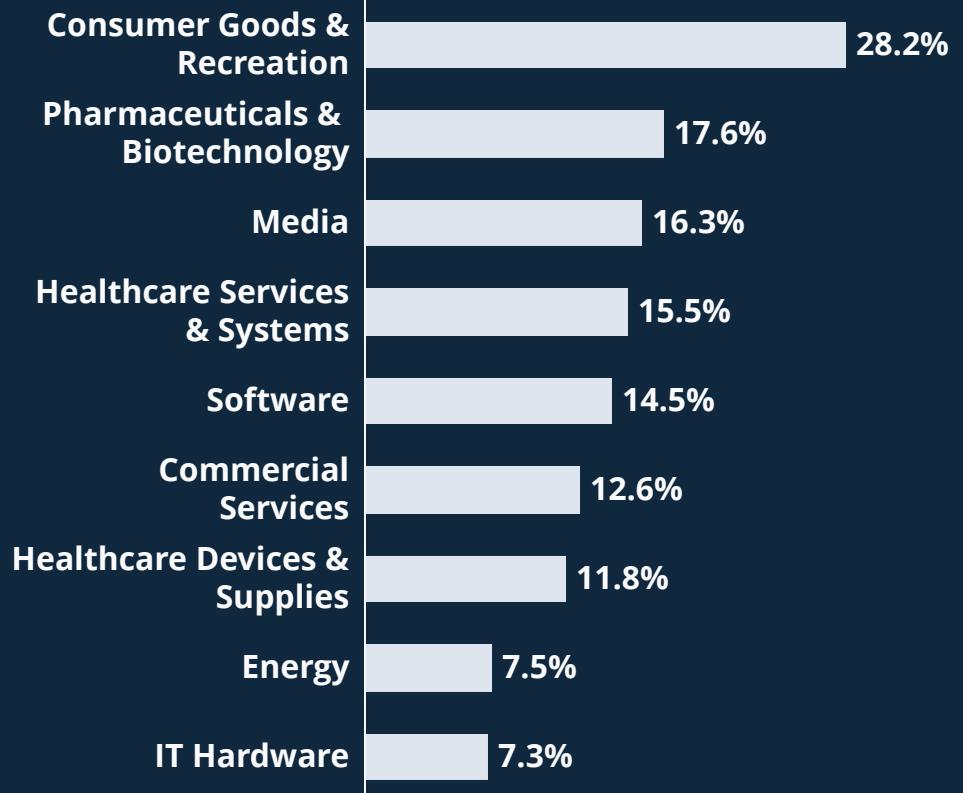
VC deals are primarily closed with male founders, particularly in the tech landscape

Global VC deals for companies with at least one female founder

Percentage of deals

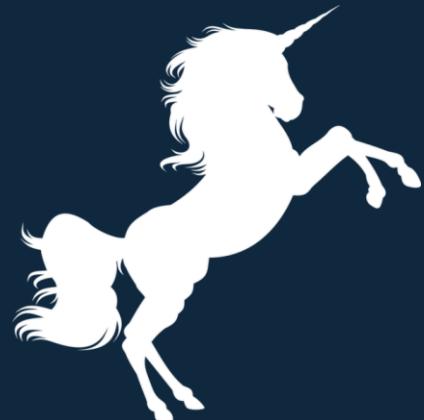
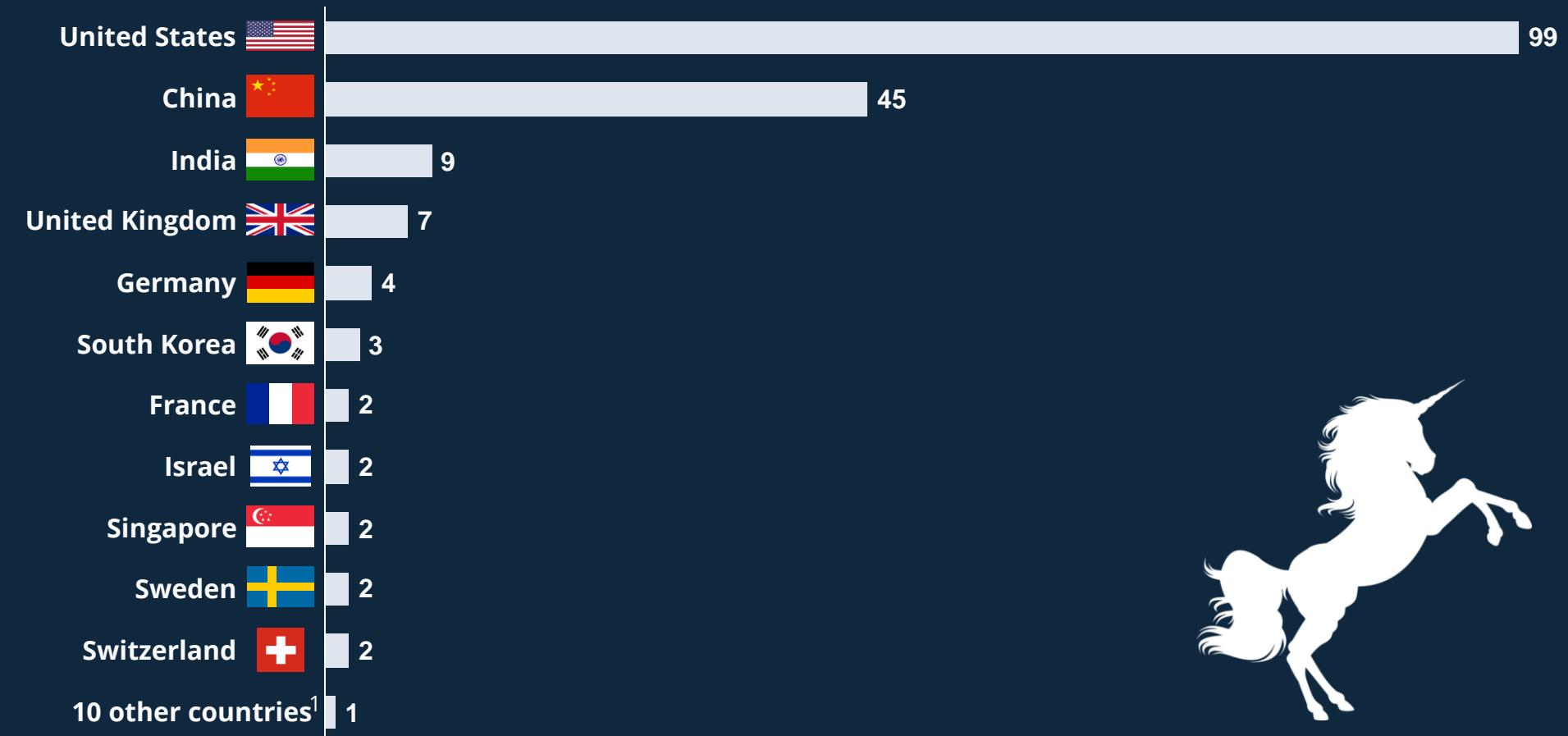


Top industries



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

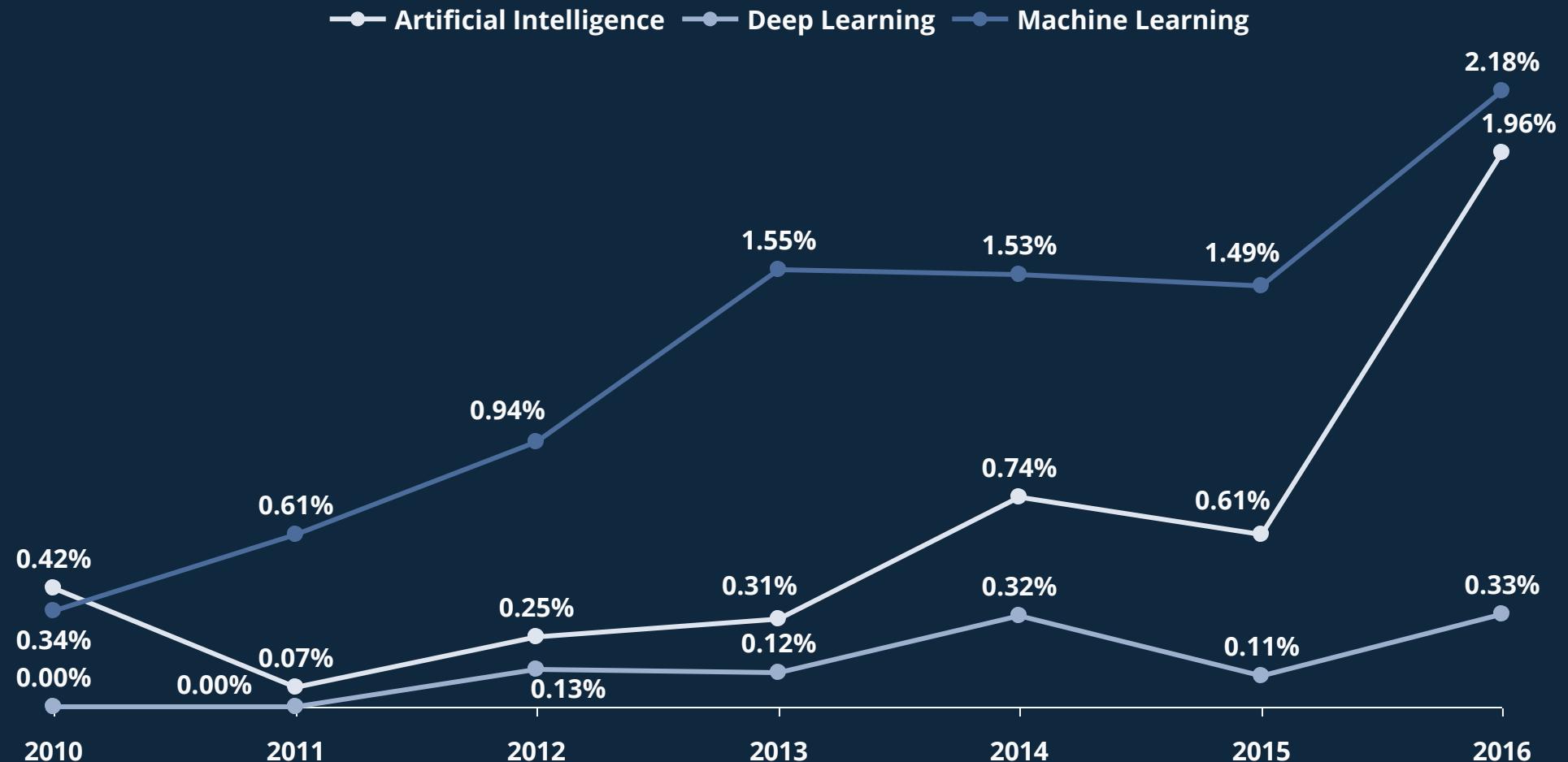
AI, AR & VR

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

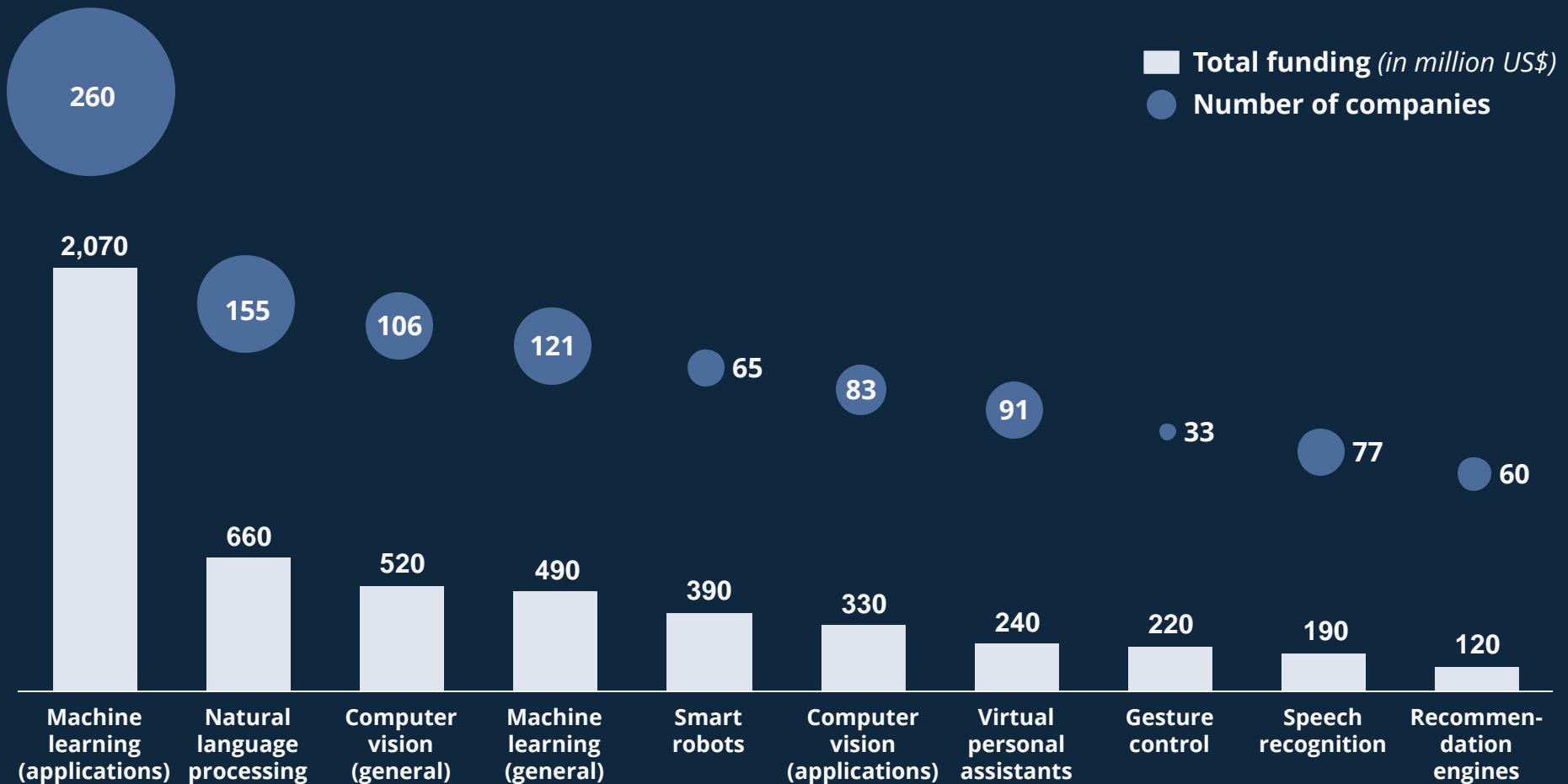
Rank	Word	% in 2010	% in 2016	Change
1	Virtual Reality	0.0%	1.0%	-
2	Machine Learning	0.3%	2.0%	507%
3	Natural Language	0.2%	1.0%	507%
4	Ingredients	0.3%	1.2%	385%
5	Cyber	0.3%	1.5%	355%
6	Artificial Intelligence	0.4%	1.8%	337%
7	Reality	0.3%	1.4%	325%
8	Automates	0.3%	1.0%	304%
9	Sensors	0.3%	1.3%	294%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

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

Source: CB Insights

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

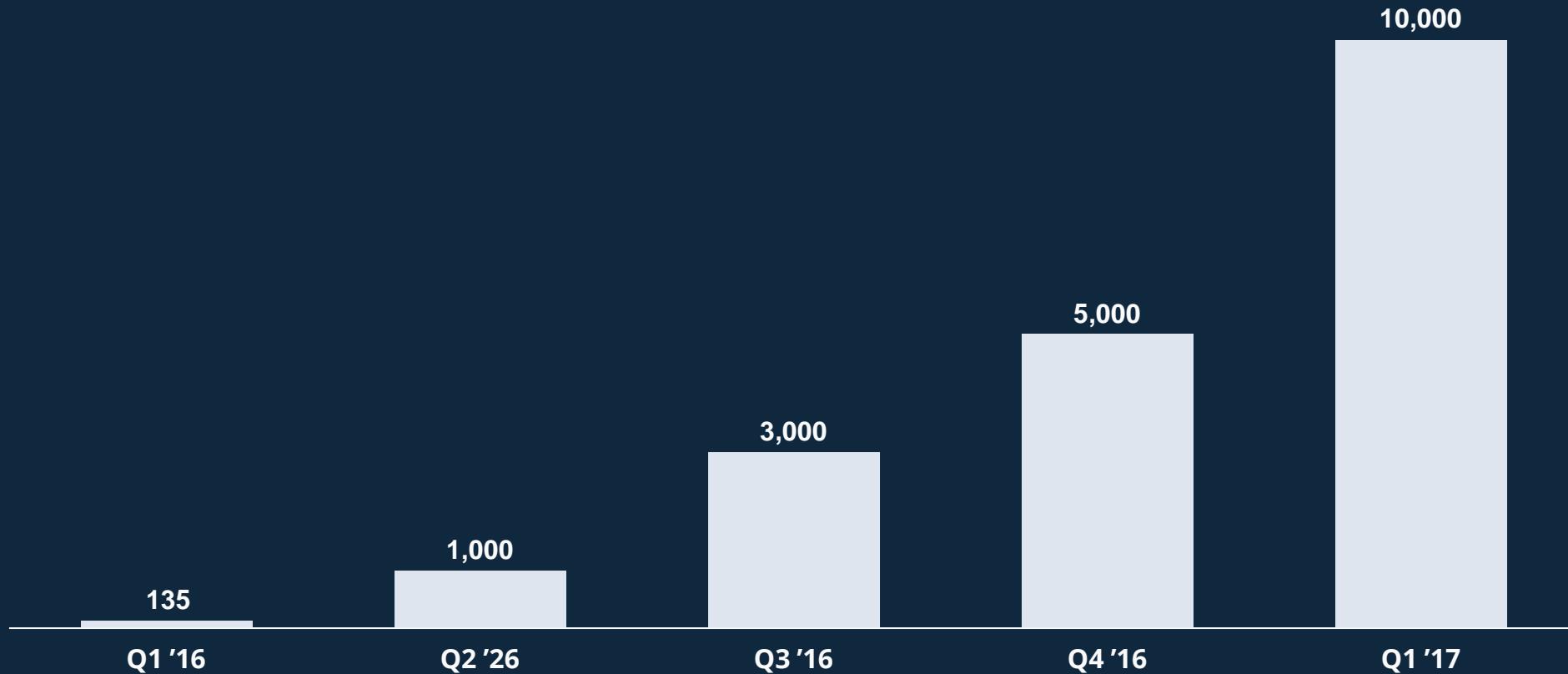
Funding and number¹ of startups working in the AI market, by category



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

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

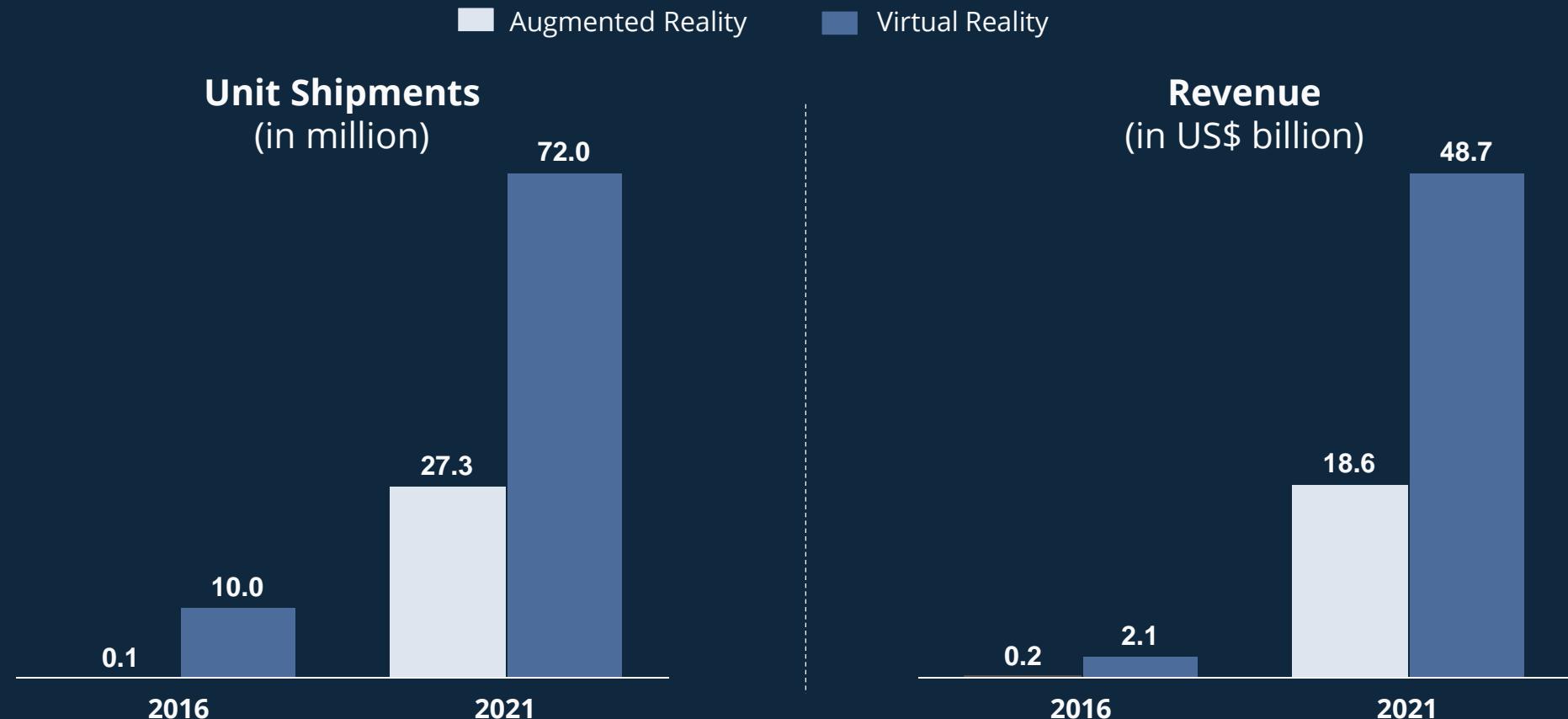
Number of third-party skills available for Amazon's virtual assistant



sources: Amazon, Press reports

Augmented & Virtual Reality may be the next big tech opportunity

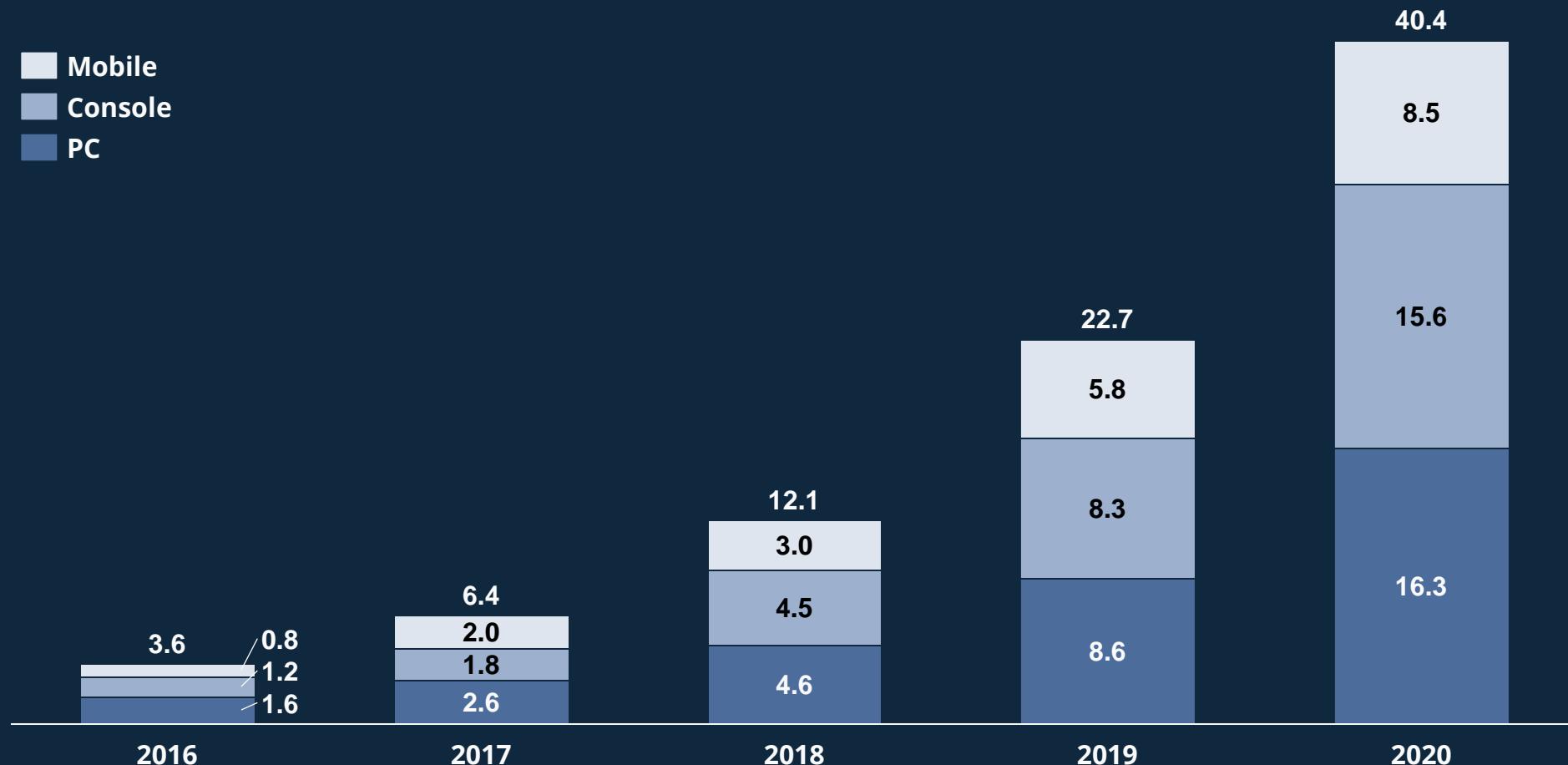
Estimated global virtual & augmented reality headset development



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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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



B2C¹ markets and revenues for...



new² products and services...



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



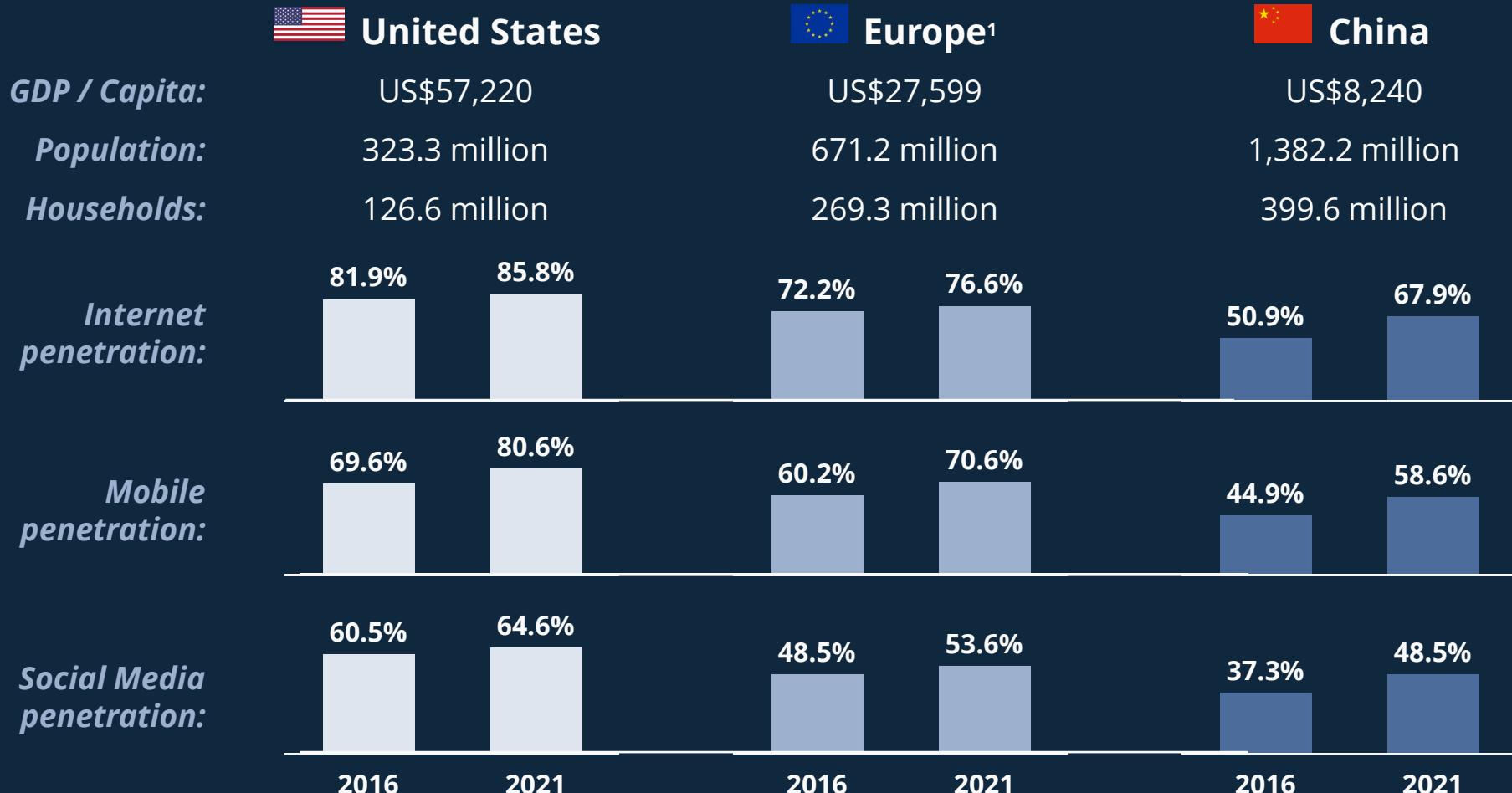
covering **7 years**, from '15 to '21.

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

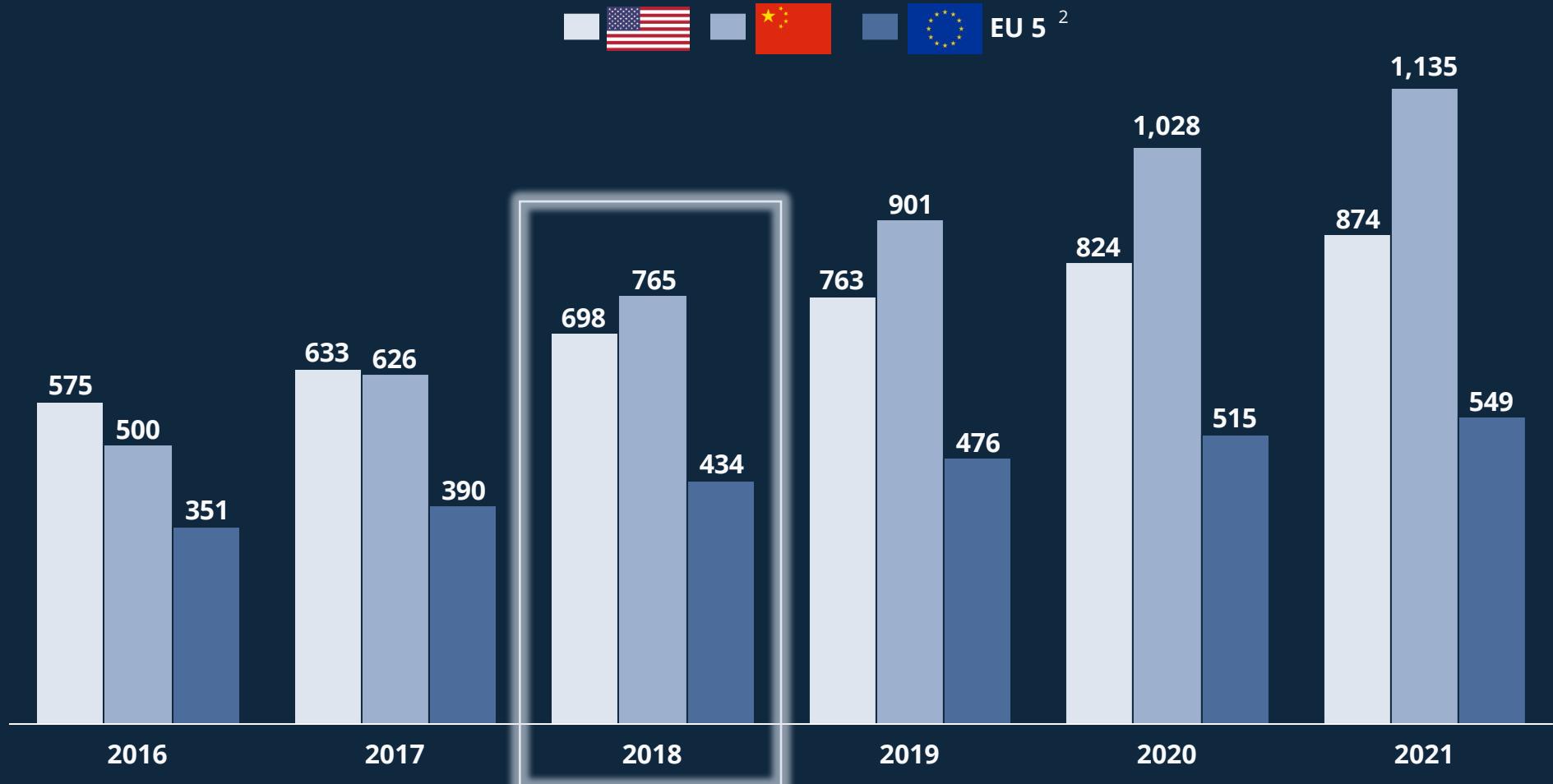


Source: [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

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

Digital market¹ development of the three major regions (in US\$bn)



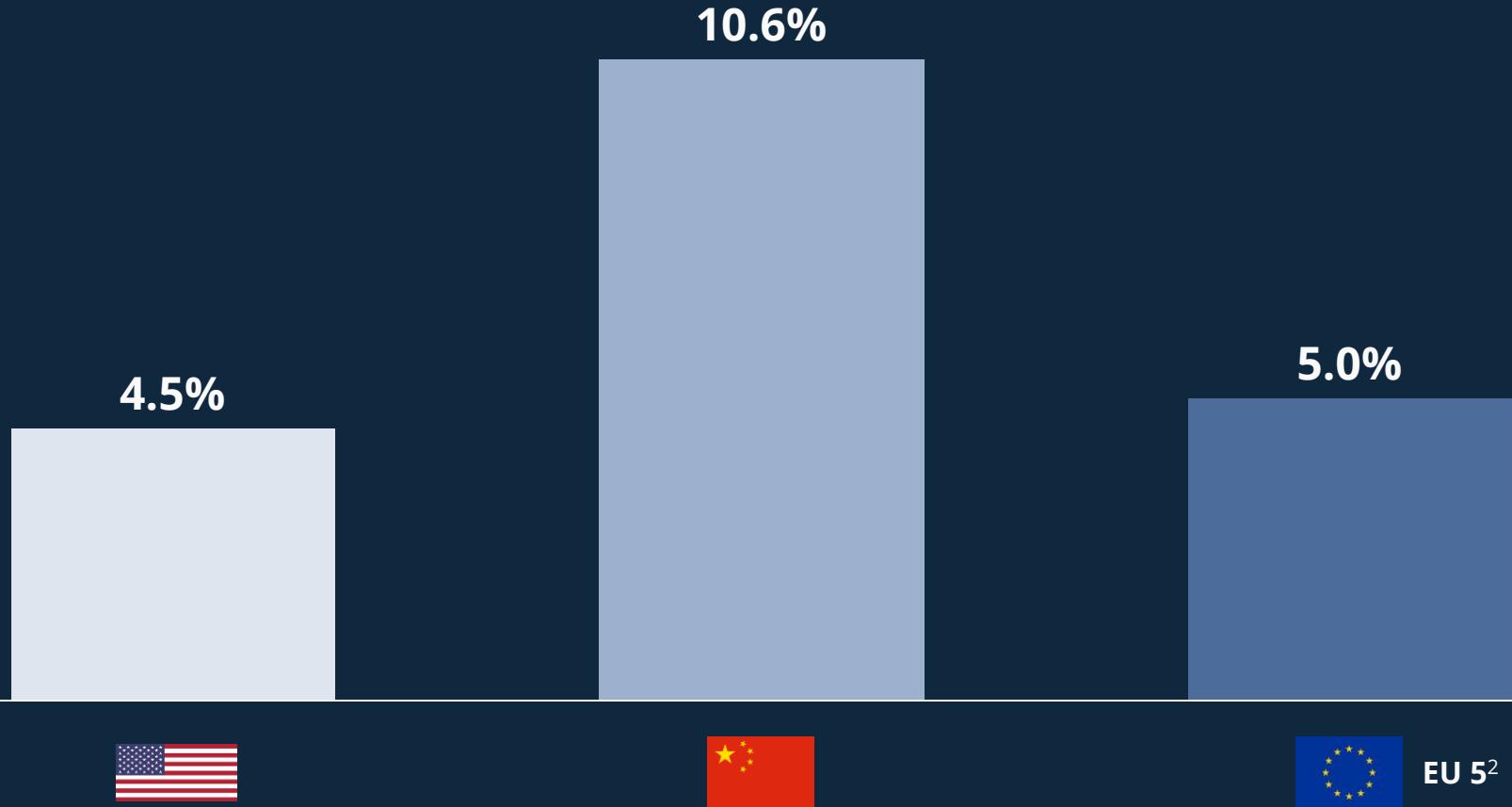
Source: [Statista Digital Market Outlook](#)

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 expenditure¹ as share of household consumption per capita in '16



Source: **Statista Digital Market Outlook**

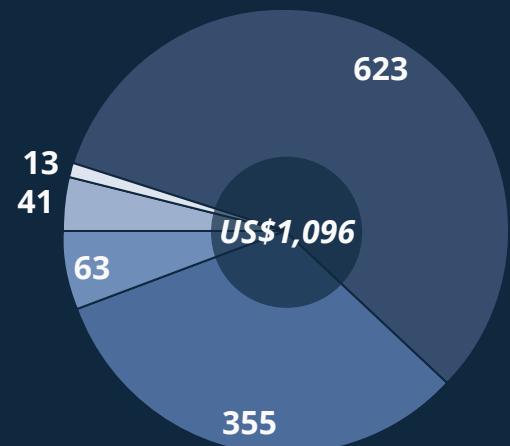
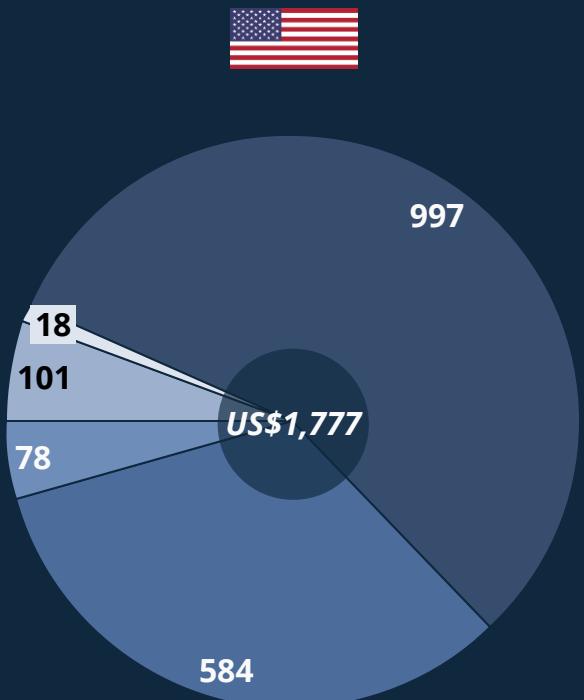
1: including all revenues generated within the e-Commerce, eTravel, eServices, Digital Media and Connected Car market

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



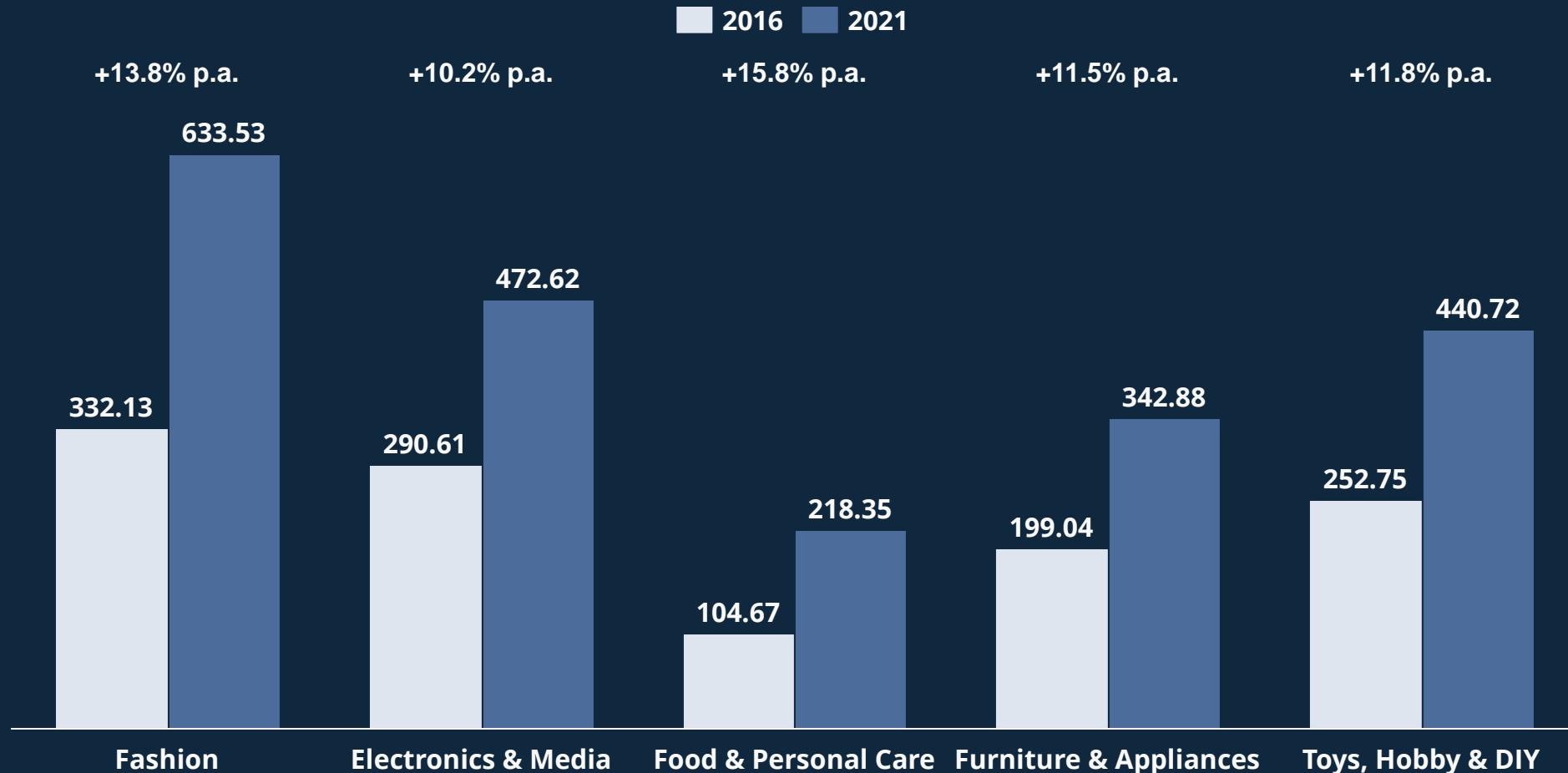
E-Commerce

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

Global¹ e-commerce revenue (in US\$bn) and CAGR² 16-21 by segment



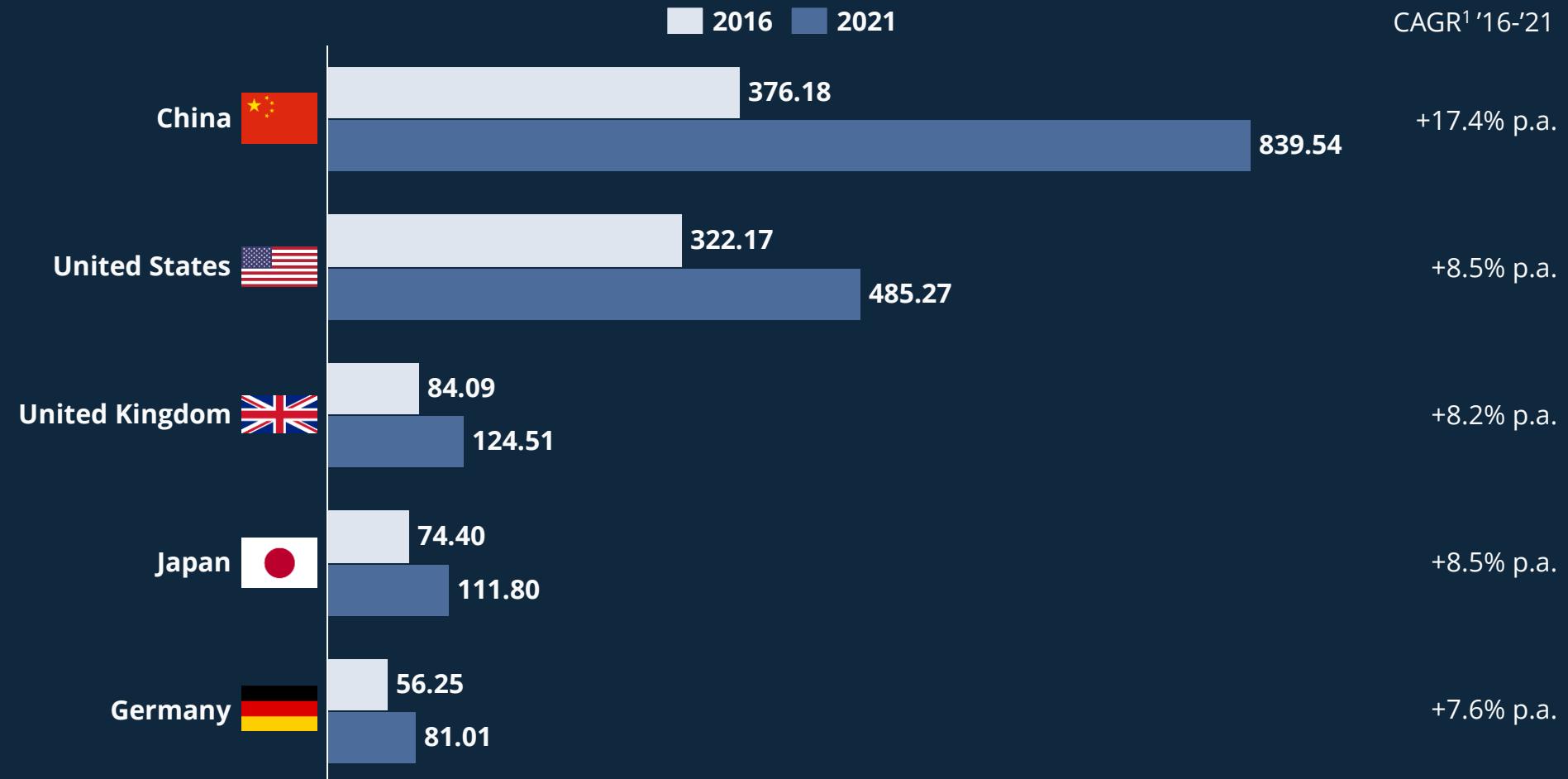
Source: [Statista Digital Market Outlook](#)

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
Market Places	vente-privee.com	newegg	Alibaba Group		
Online Retailer	zalando	amazon	TESCO	Crate&Barrel	STAPLES
	NORDSTROM ★macy's asos next	BEST BUY Cdiscount ocado	Walmart	home24 houzz	Cabela's Office DEPOT ToysRus Argos SPORTS DIRECT.com
Direct Seller	ZARA VICTORIA'S SECRET H&M	DELL hp Lenovo	Hello FRESH WHOLE FOODS MARKET SAFEWAY	wayfair IKEA POTTERY BARN	asics LEGO NIKE

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

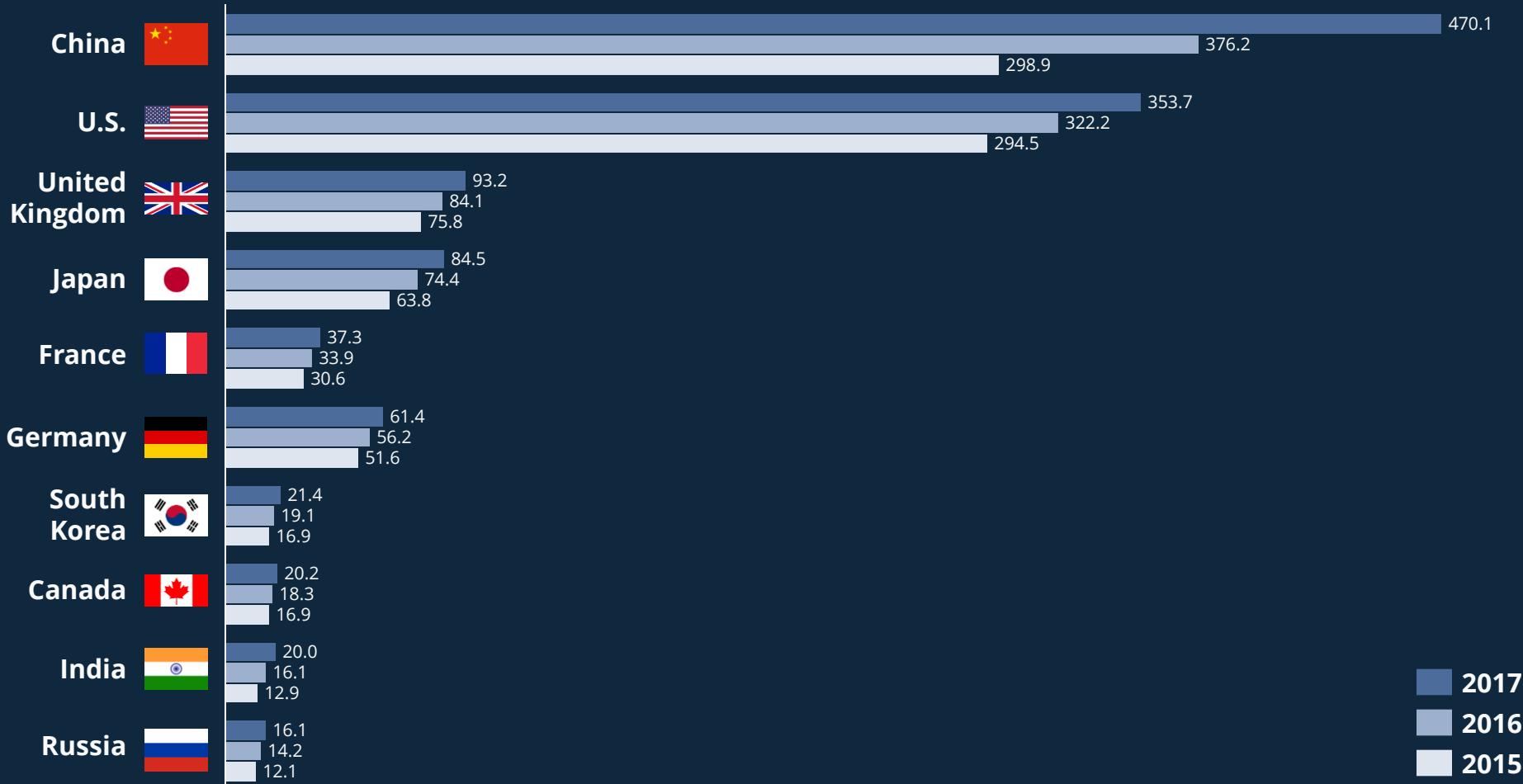
Projected online turnover from fashion (in US\$ billion)



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 2017¹ in US\$ billion



Source: [Statista Digital Market Outlook](#)
1: Prediction

Transparency and simple processes are most important for online shopping delivery

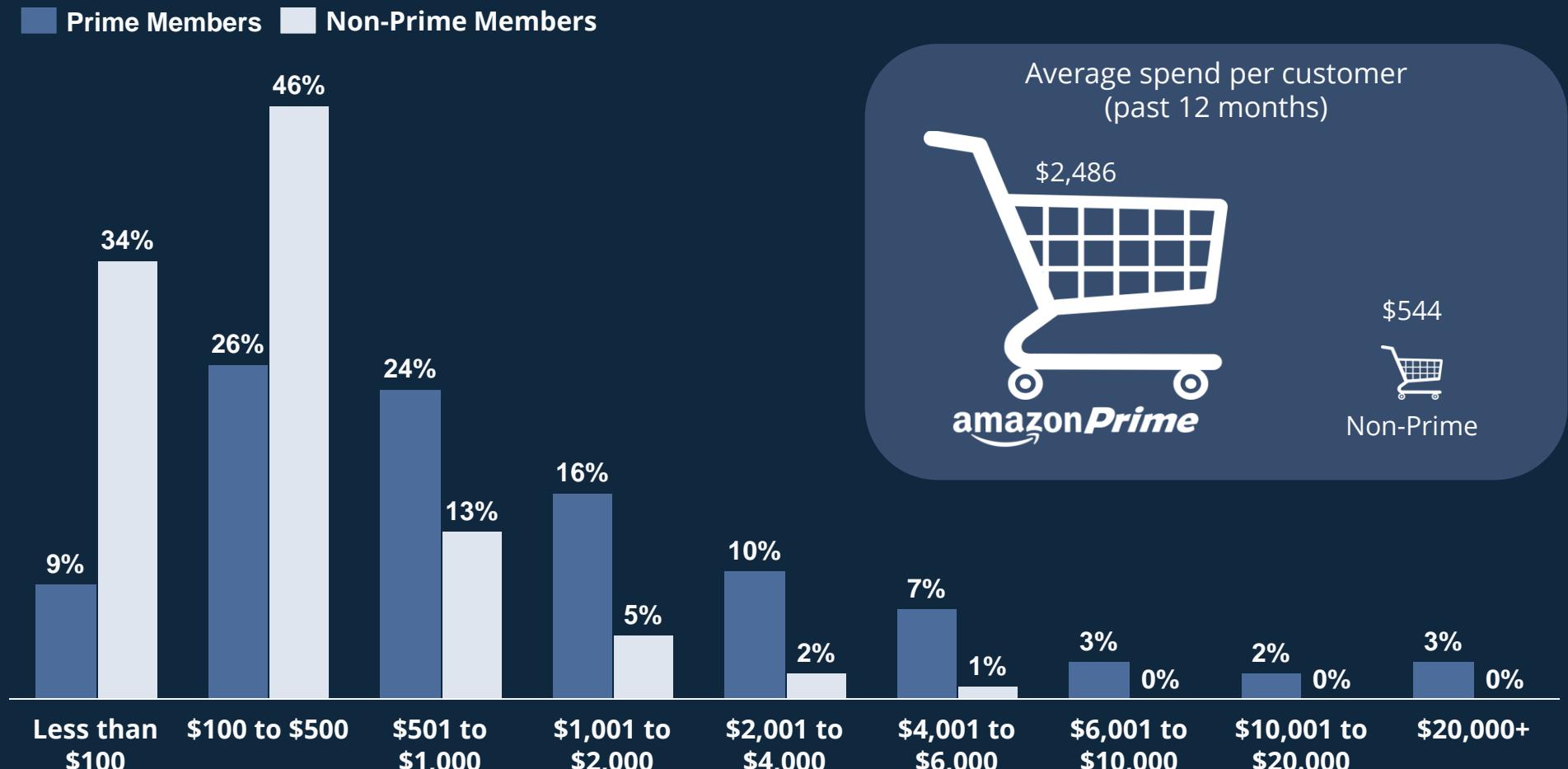
Most important aspects of online shopping delivery for customers



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

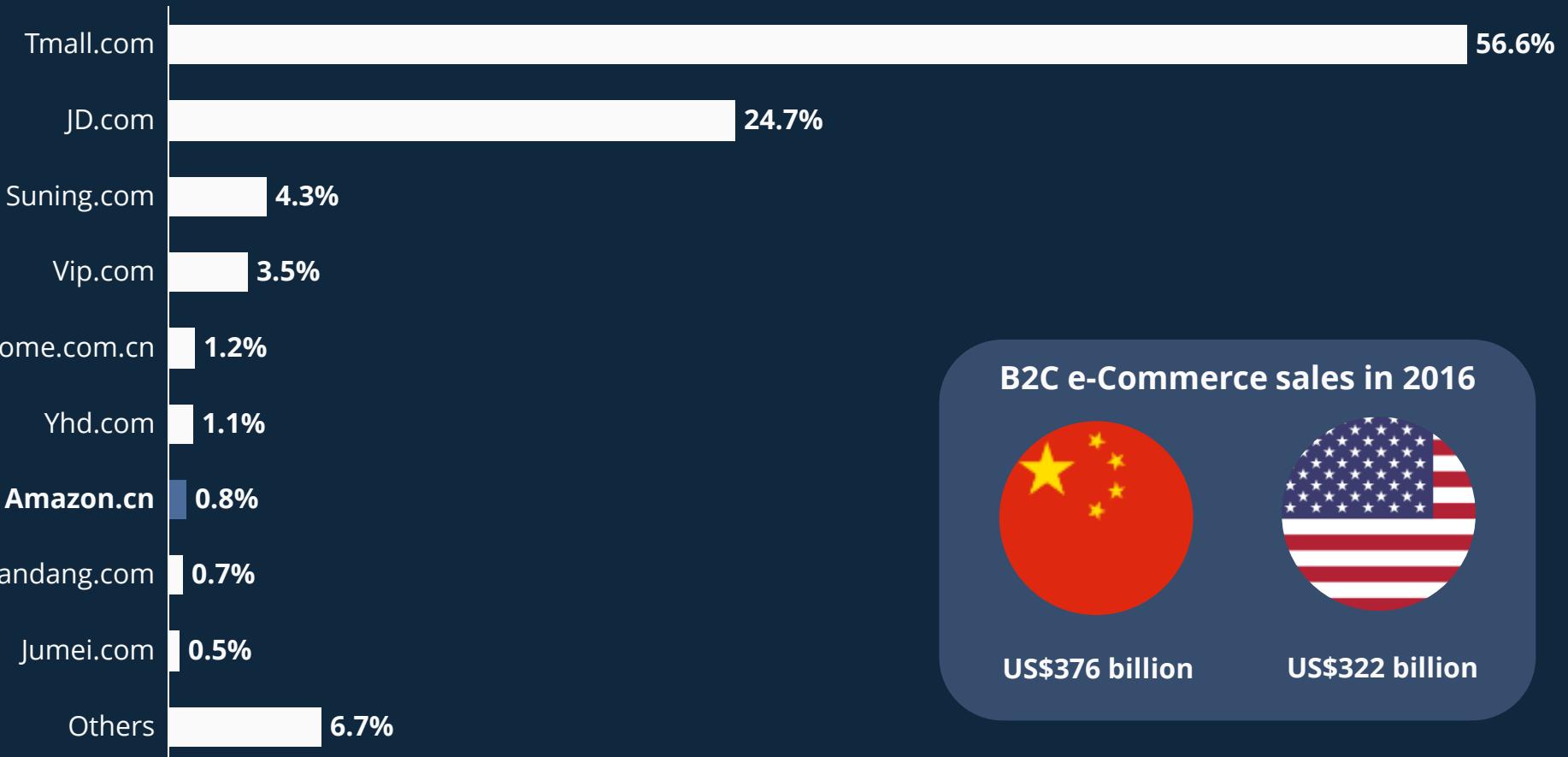
Amount spent by U.S. Amazon customers in the past 12 months



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

Discover more of our topic-related research for e-Commerce

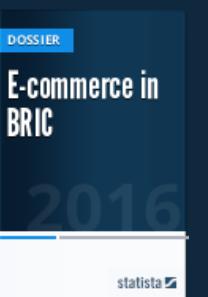


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- › **Food & Personal Care**
- › **Furniture & Appliances**
- › **Toys, Hobby & DIY**

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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

Global¹ eServices revenue (in US\$ billion) and CAGR² 16-21 by segment



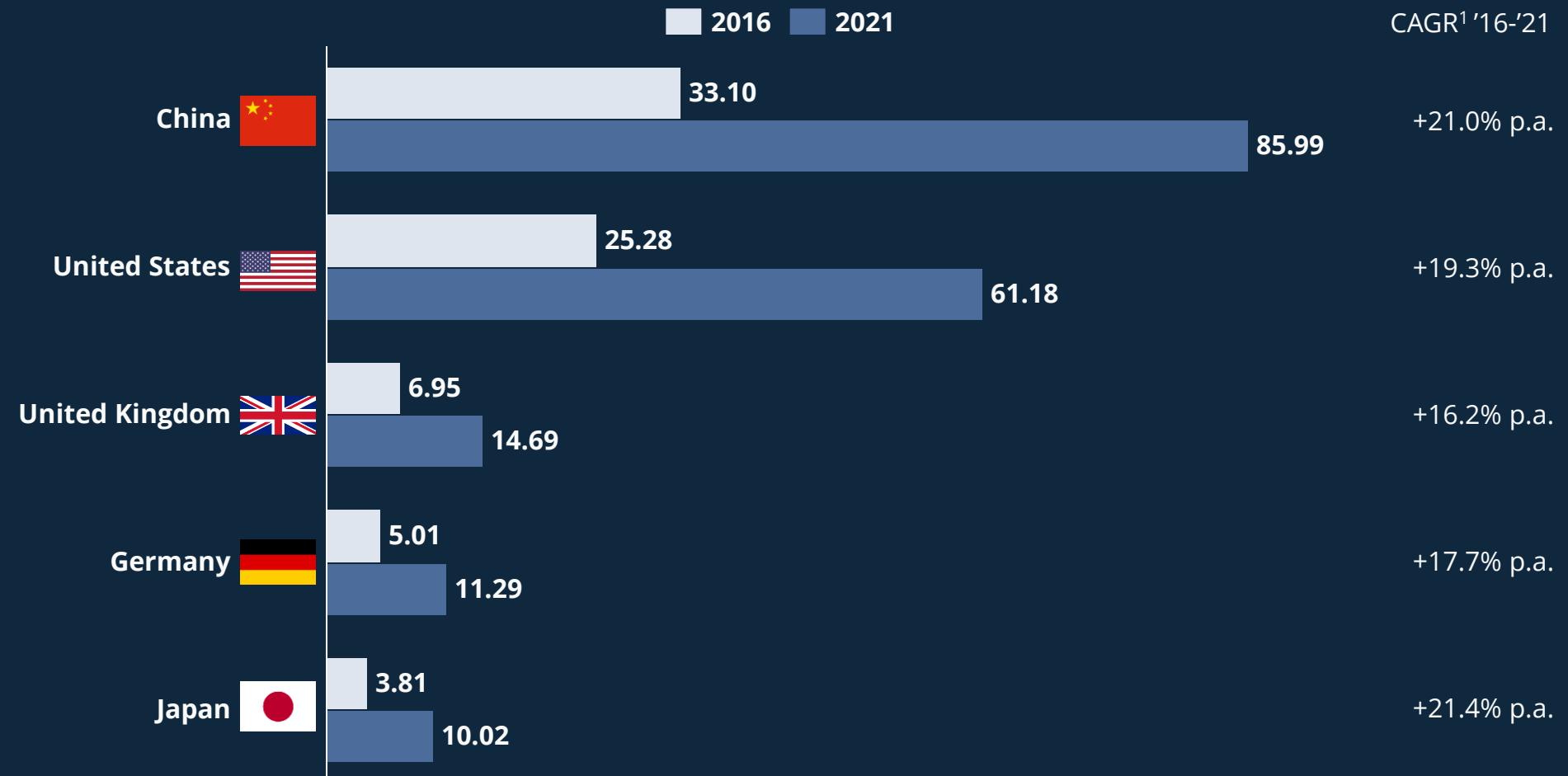
Source: [Statista Digital Market Outlook](#)

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

	Event Tickets	Fitness	Dating Services	Food Delivery
Startups ¹	     	        	         	      
Established players	        	       	        	       
Market complexity ²				

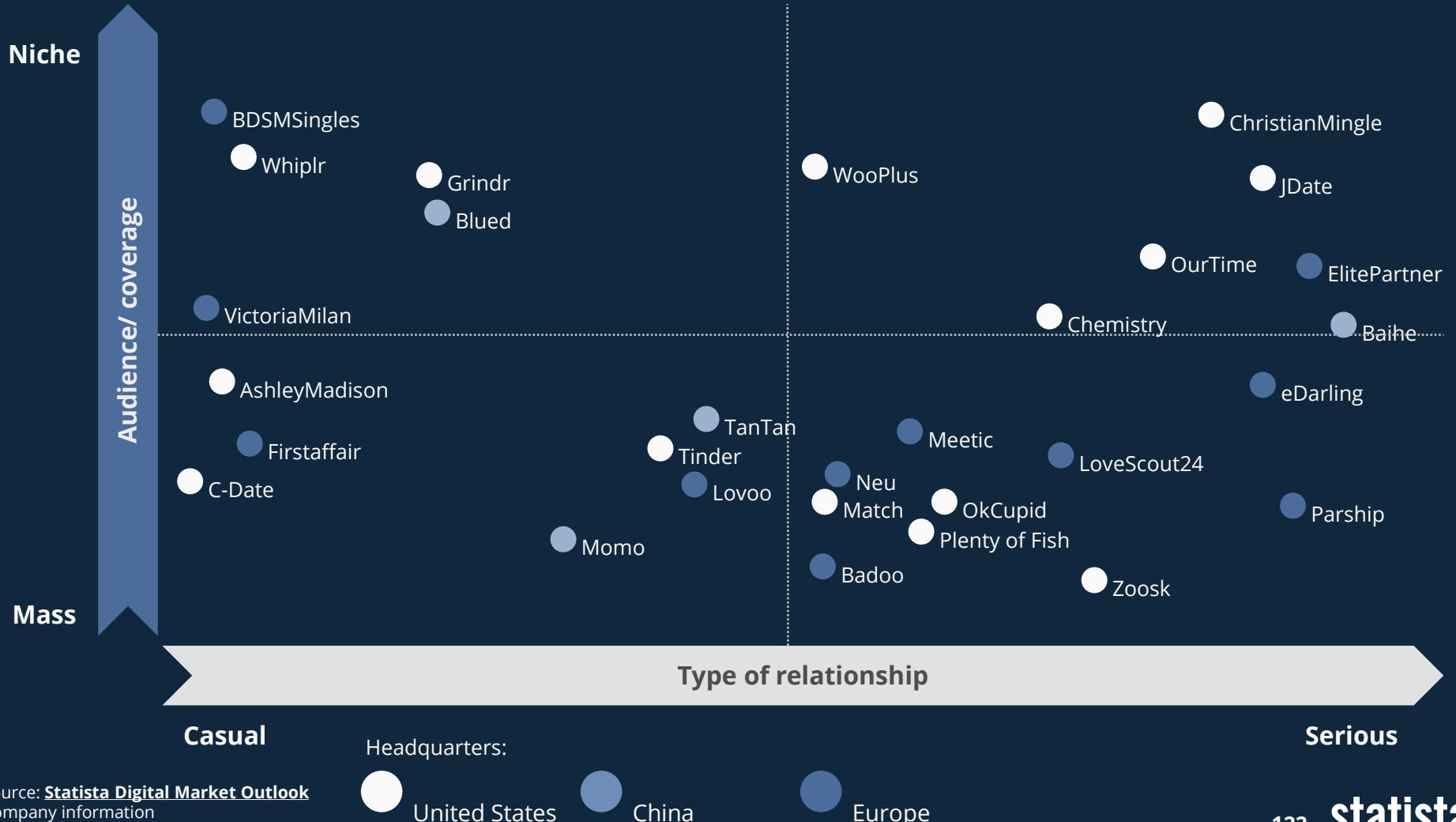
Source: [Statista Digital Market Outlook](#)

1: Founded after or in 2007

2: Estimate; considers value chain complexity and competitor landscape

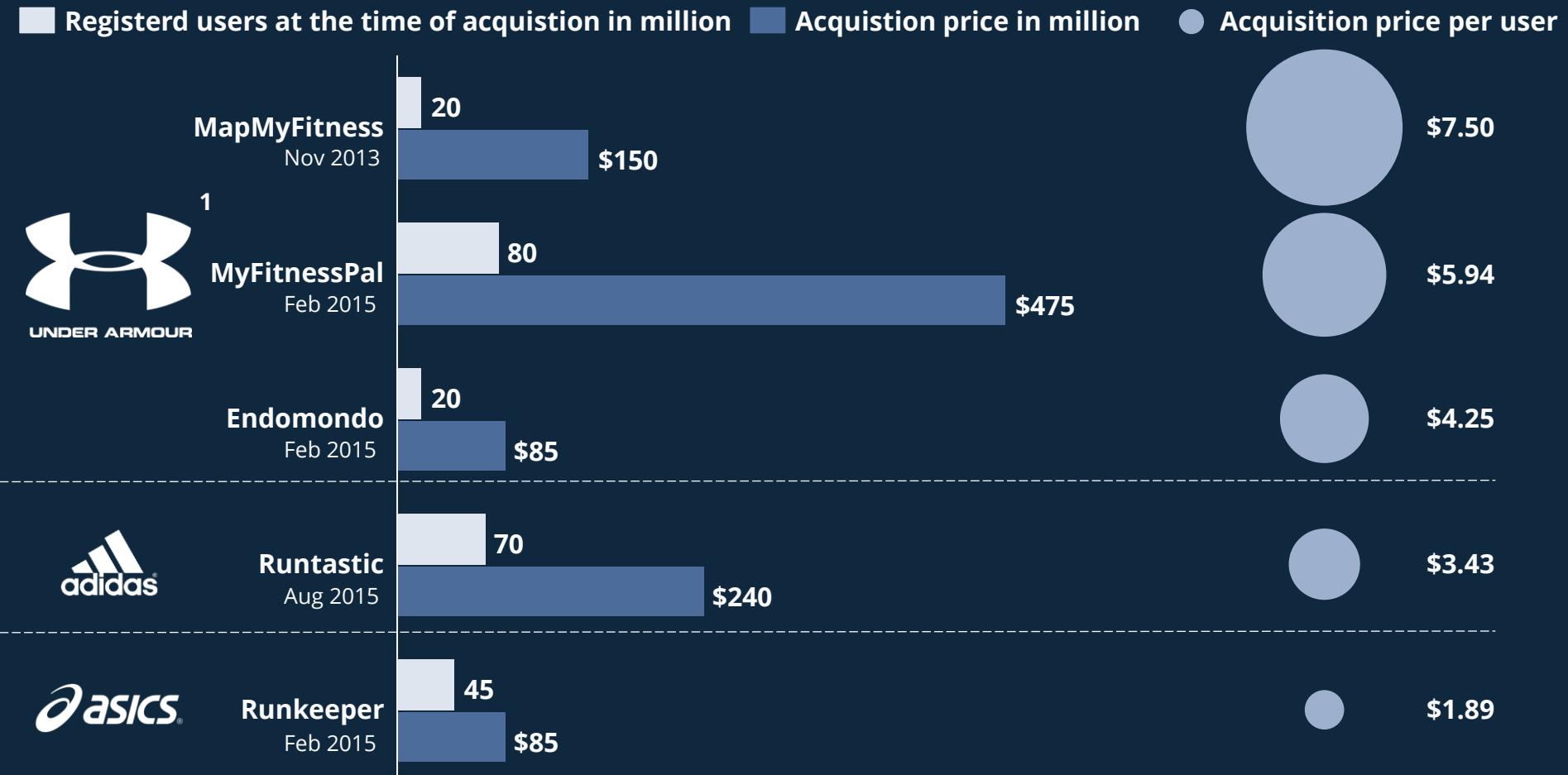
In Dating Services, different offerings are targeted at various audiences and types of relationship

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

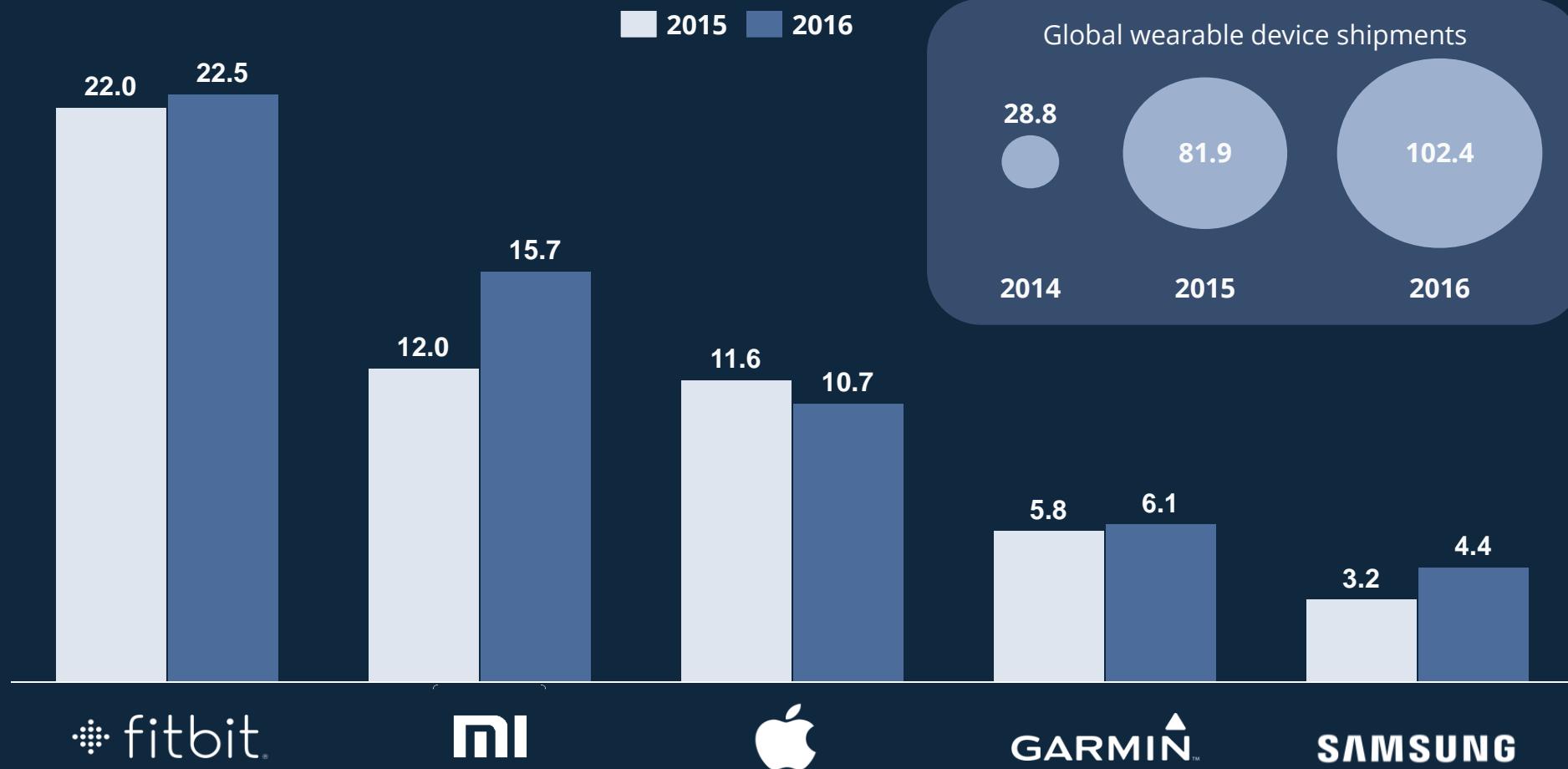


Sources: DC Reinmaker, Fortune, Runnersworld, **Statista Digital Market Outlook**

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

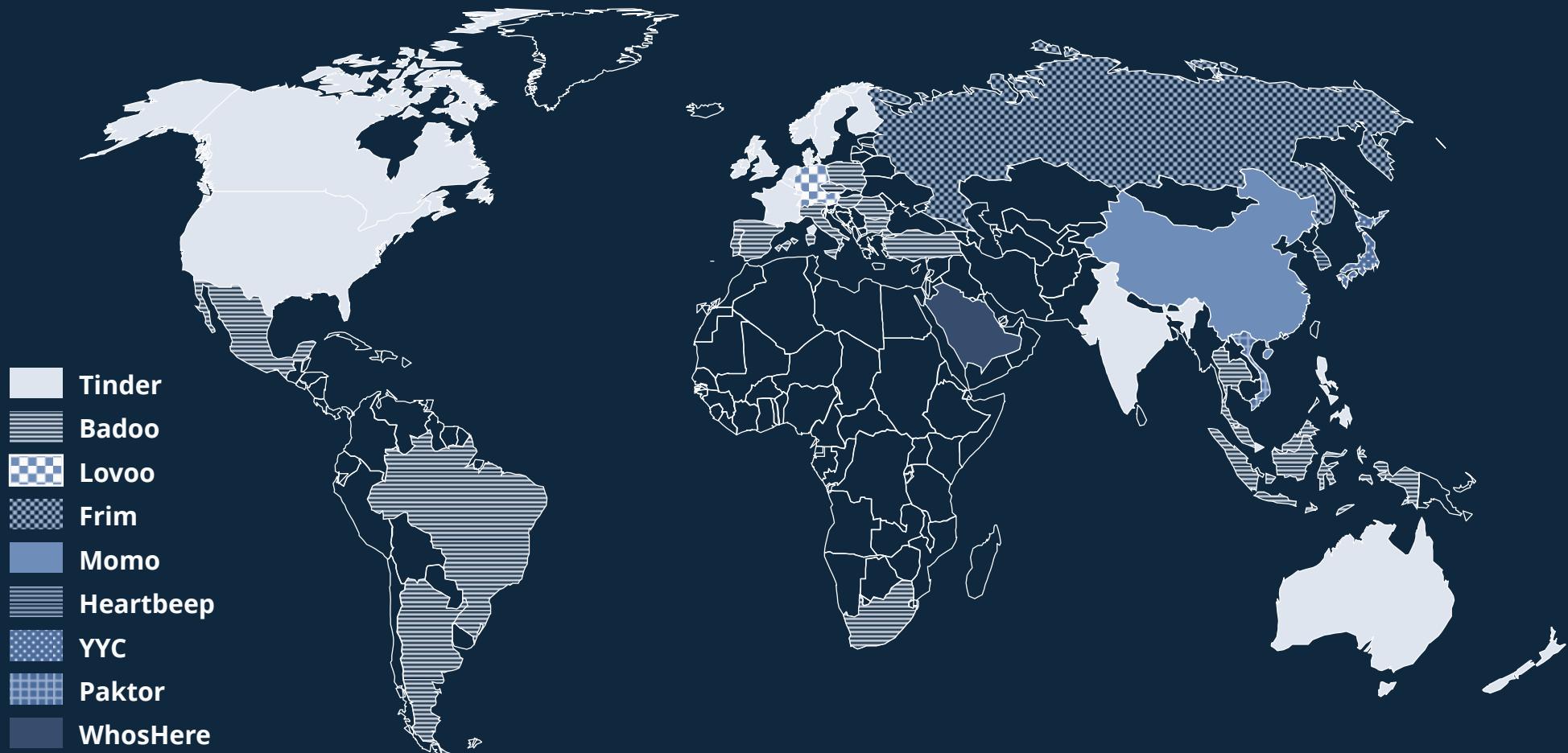
Fitbit leads the global wearables market; what can be expected from the Apple Watch?

Worldwide wearable device shipments by the Top 5 vendors in million



Tinder and Badoo are the top 2 dating apps in terms of global¹ downloads

The most downloaded dating app by country 2015

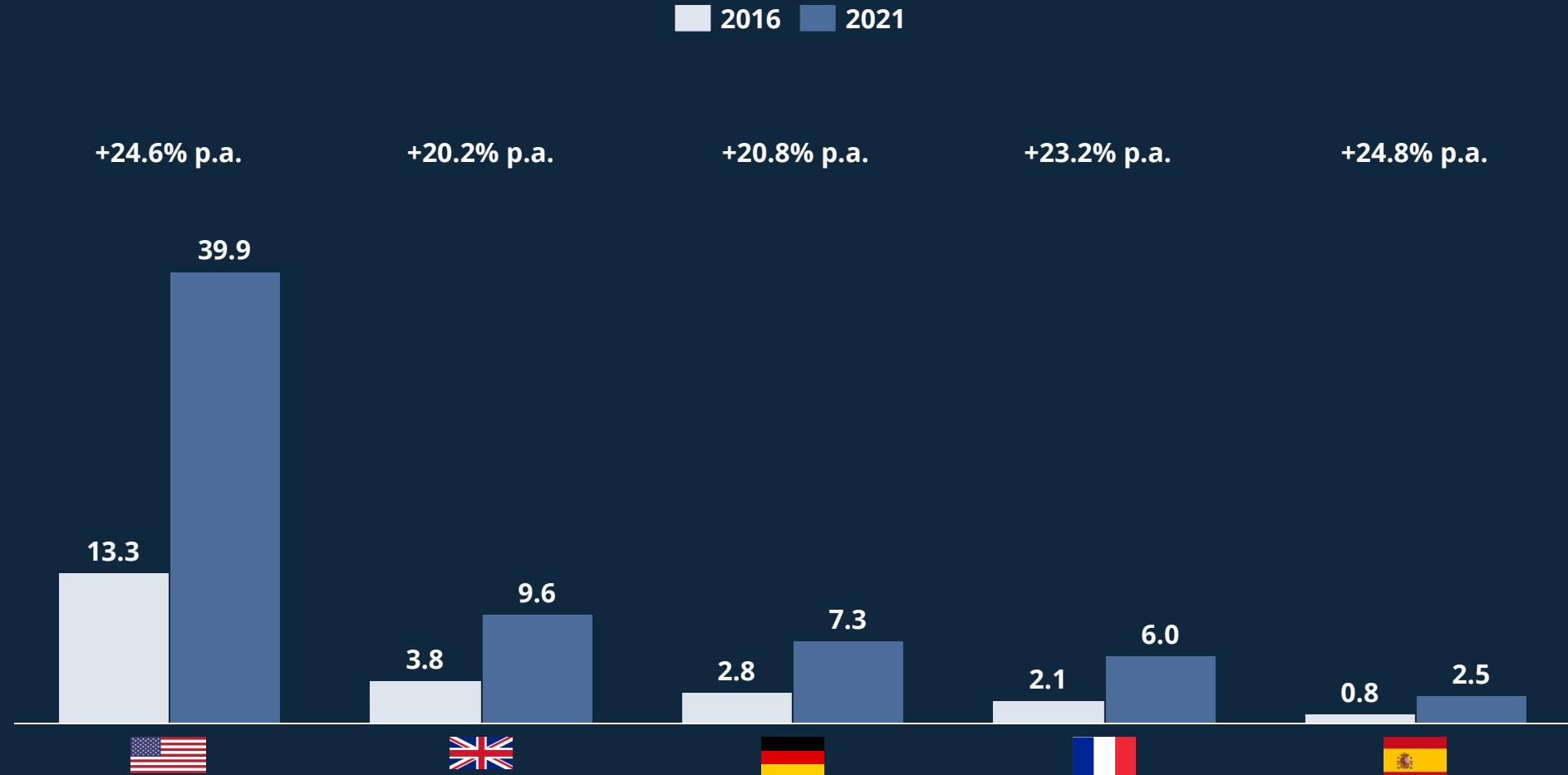


sources: BBC News, App Annie, [Statista Digital Market Outlook](#)

1: only includes countries of the Digital Market Outlook

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

Online food delivery¹ revenue forecast (in US\$ billion)

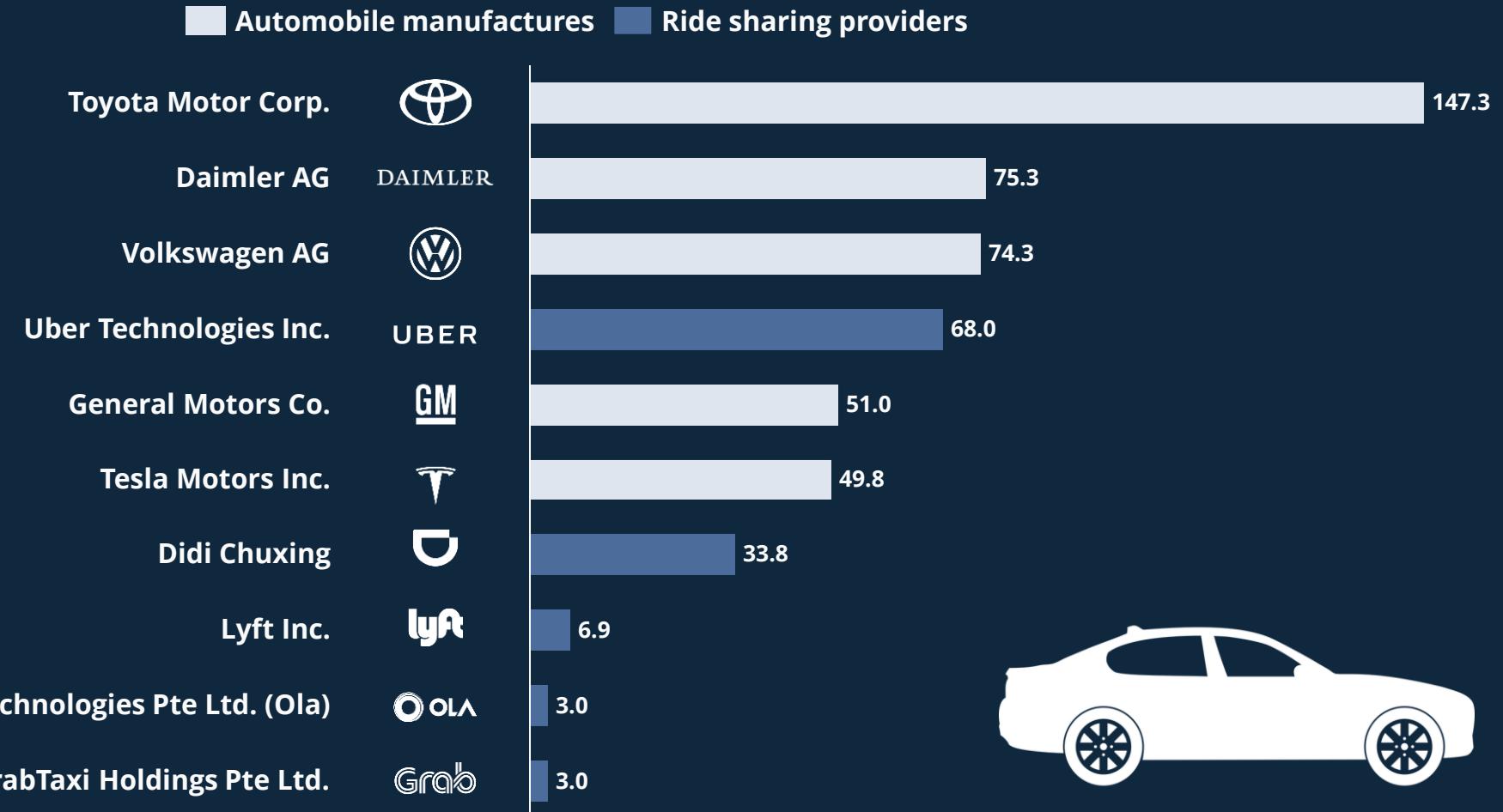


Source: **Statista Digital Market Outlook**

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)



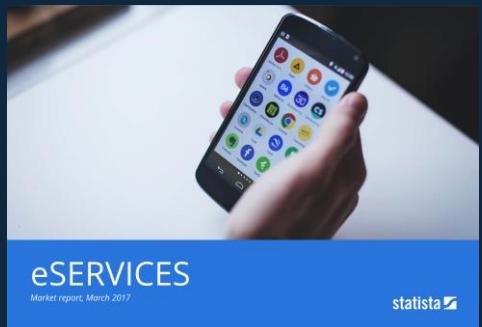
source: Yahoo! Finance, CB Insights, livemint

Note: Market cap as of 04-20-2017



Everyone is taking a stab at online food delivery

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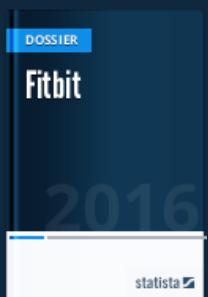


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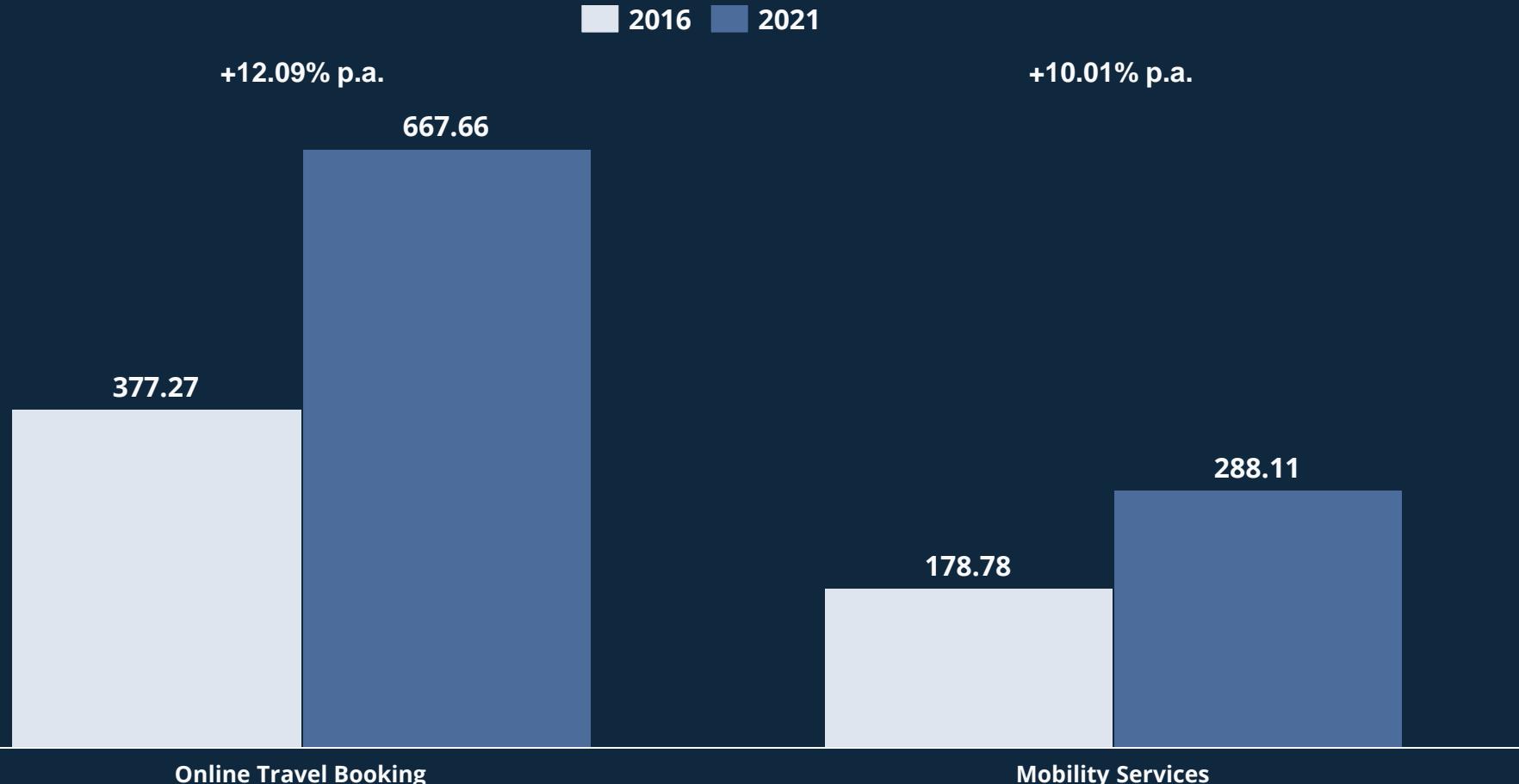
eTravel

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

Global¹ e-commerce Revenue in US\$ billion and CAGR² 16-21 by segment



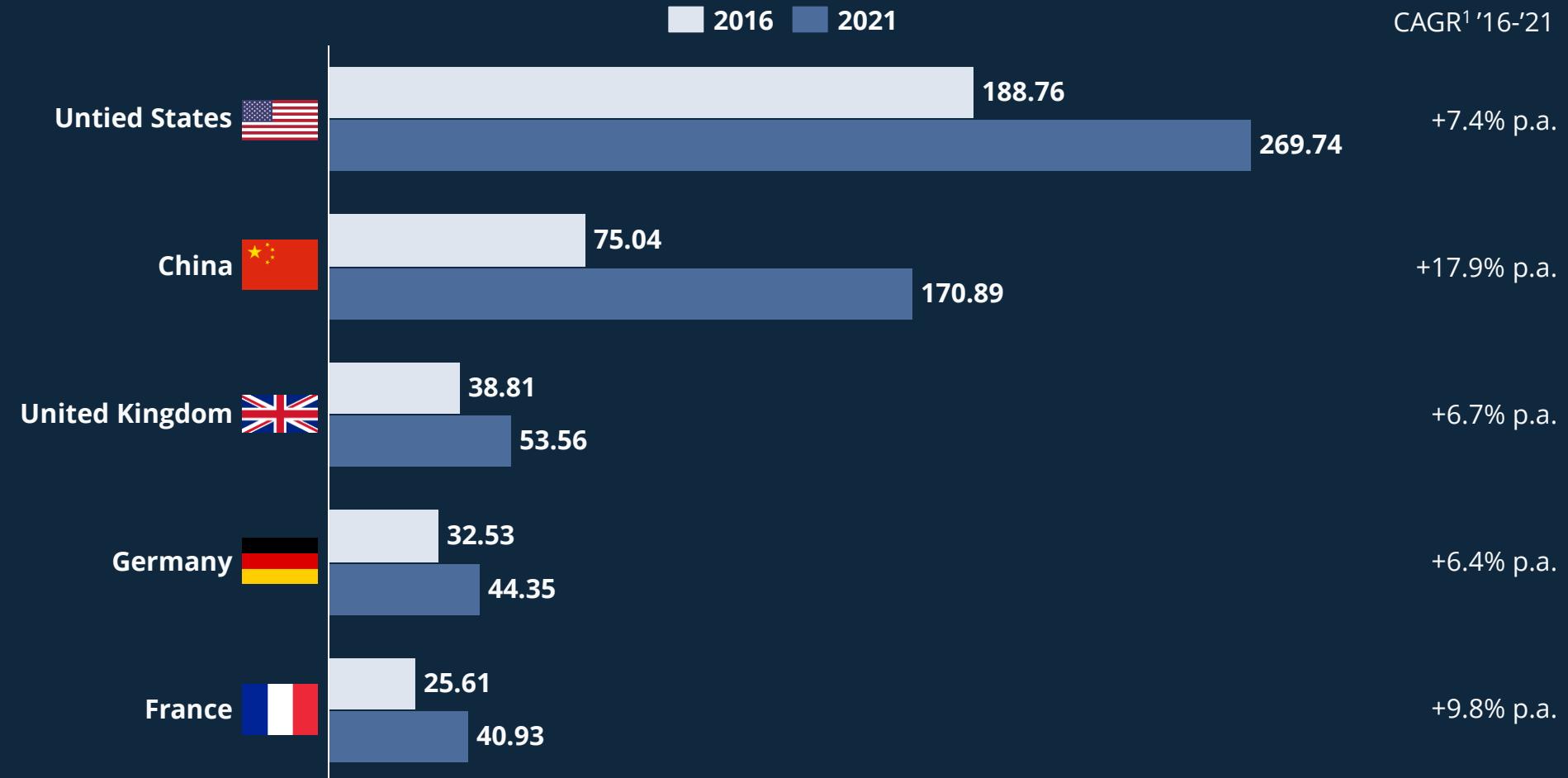
Source: **Statista Digital Market Outlook**

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)

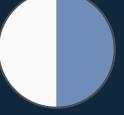


Source: **Statista Digital Market Outlook**

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 ¹	 airbnb  lola  Hotel Tonight   OYO  VOSSY.   	  OLA  FLIXBUS  Bla Bla Car    zimride   
Established players	 HomeAway [®]  eDreams  ODIGEO  Expedia [®]  Hotels.com     Ctrip    	            
Market complexity ²		

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

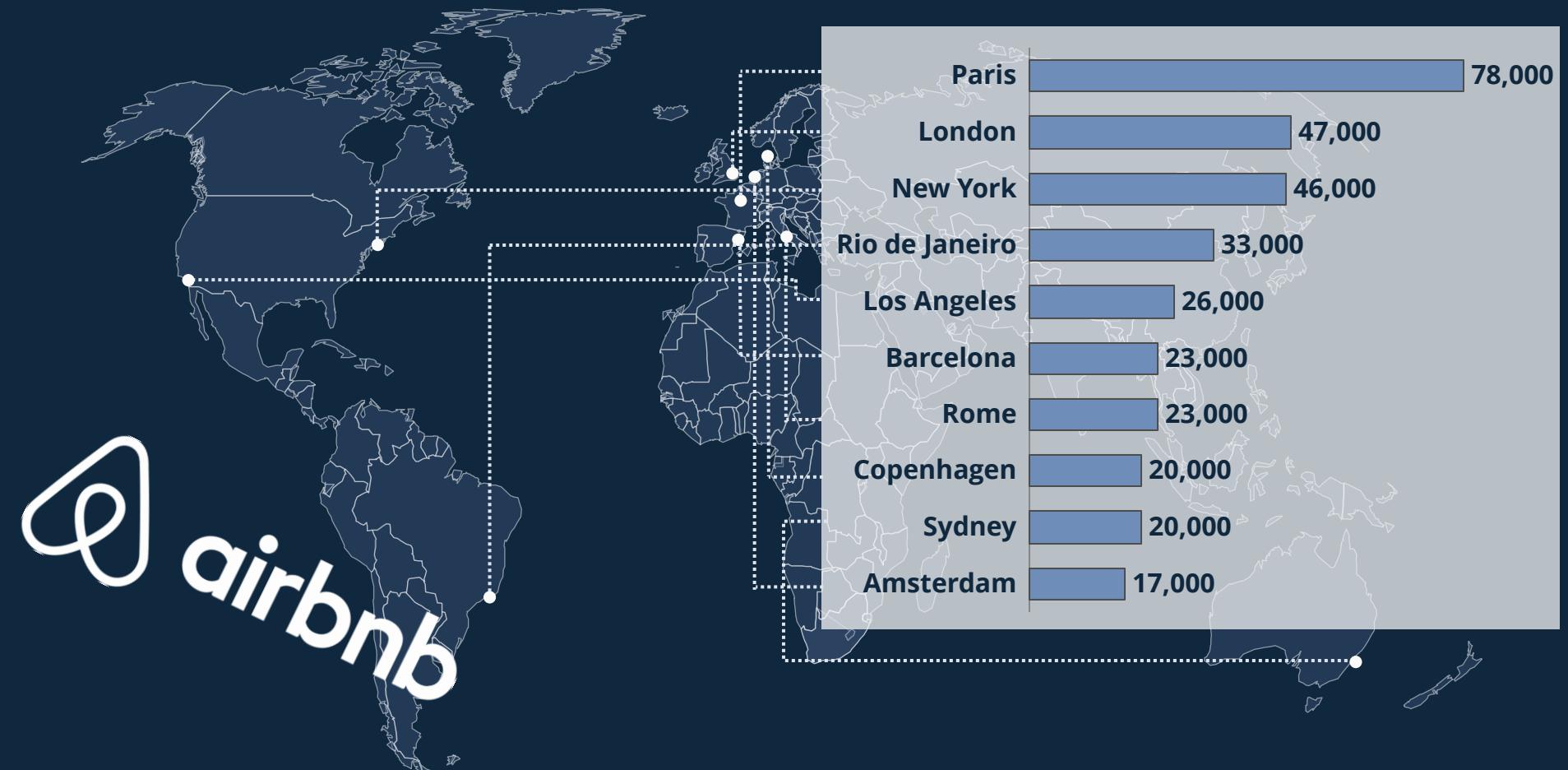
Selected players and selected acquisitions/ investments

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 2016¹



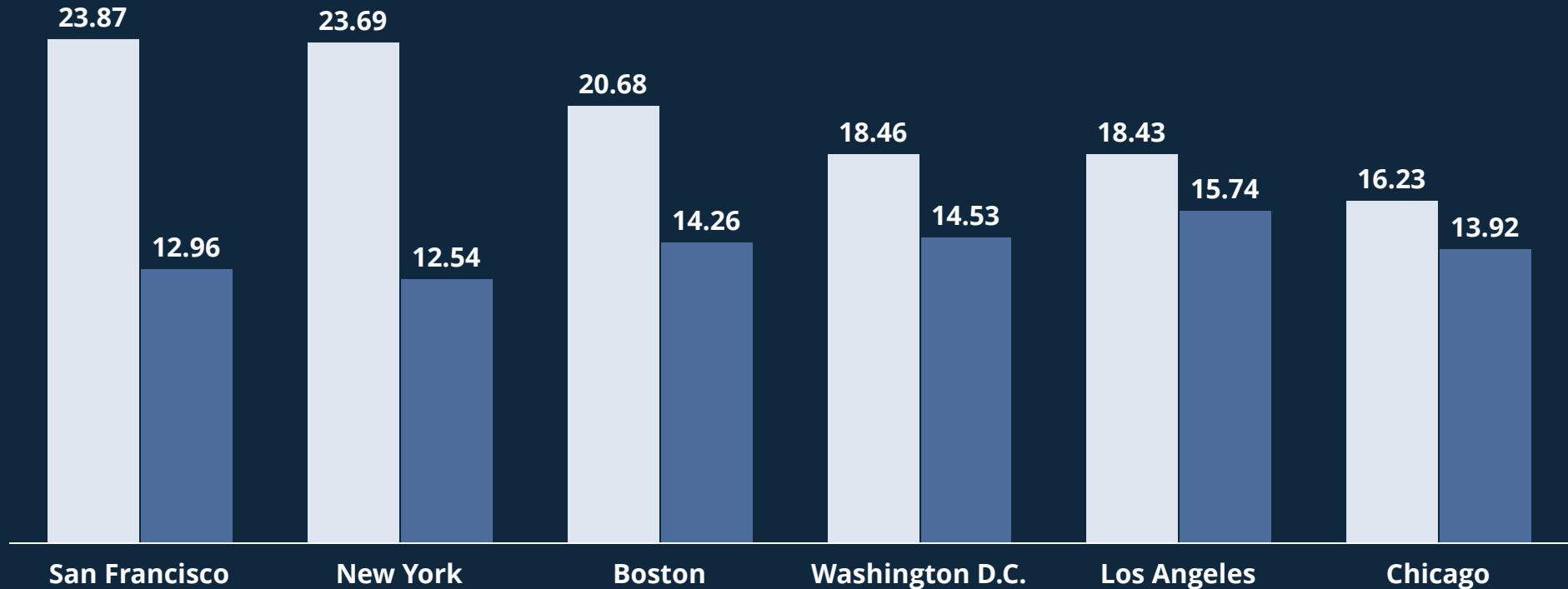
source: Airbnb Data & Analytics

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

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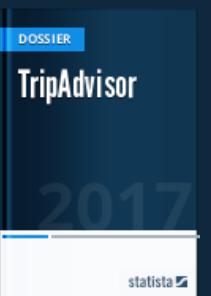


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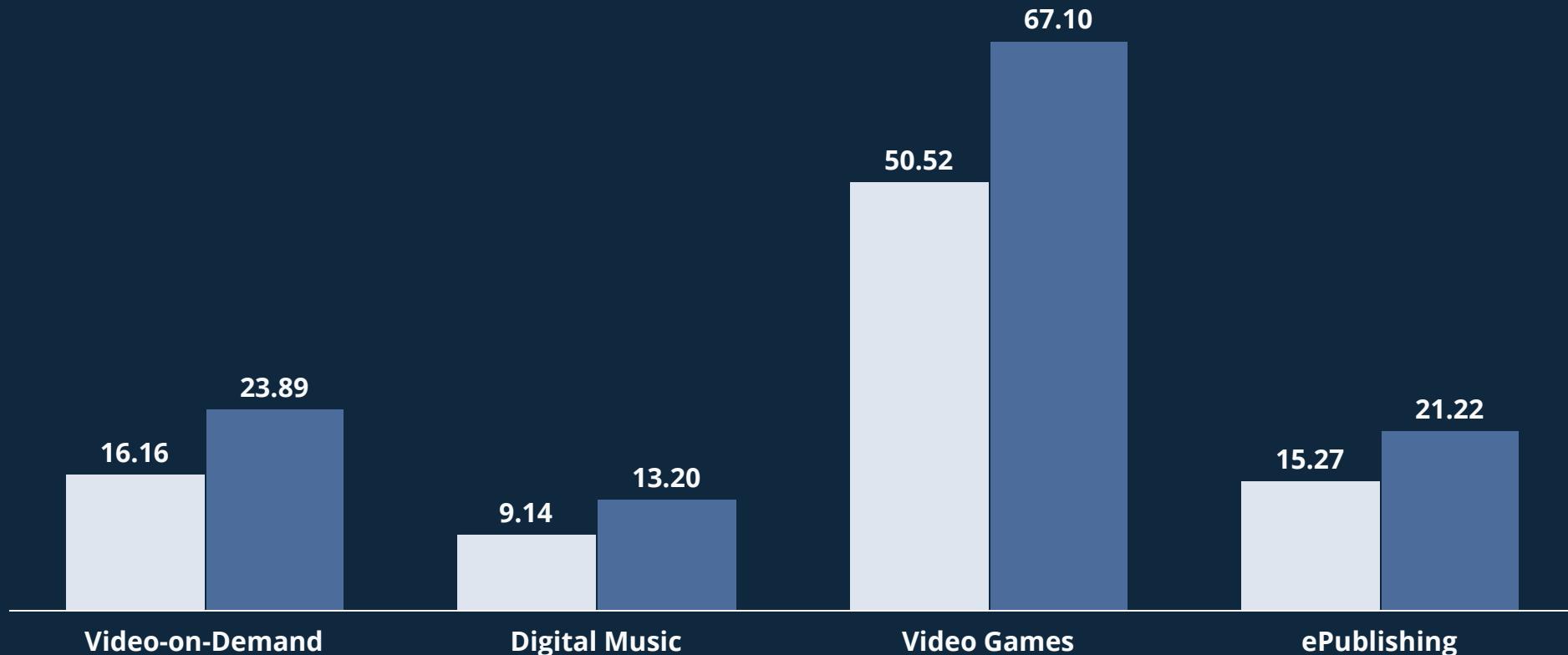
Digital Media

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

Global¹ Digital Media revenue (in US\$ billion) and CAGR² 16-21 by segment



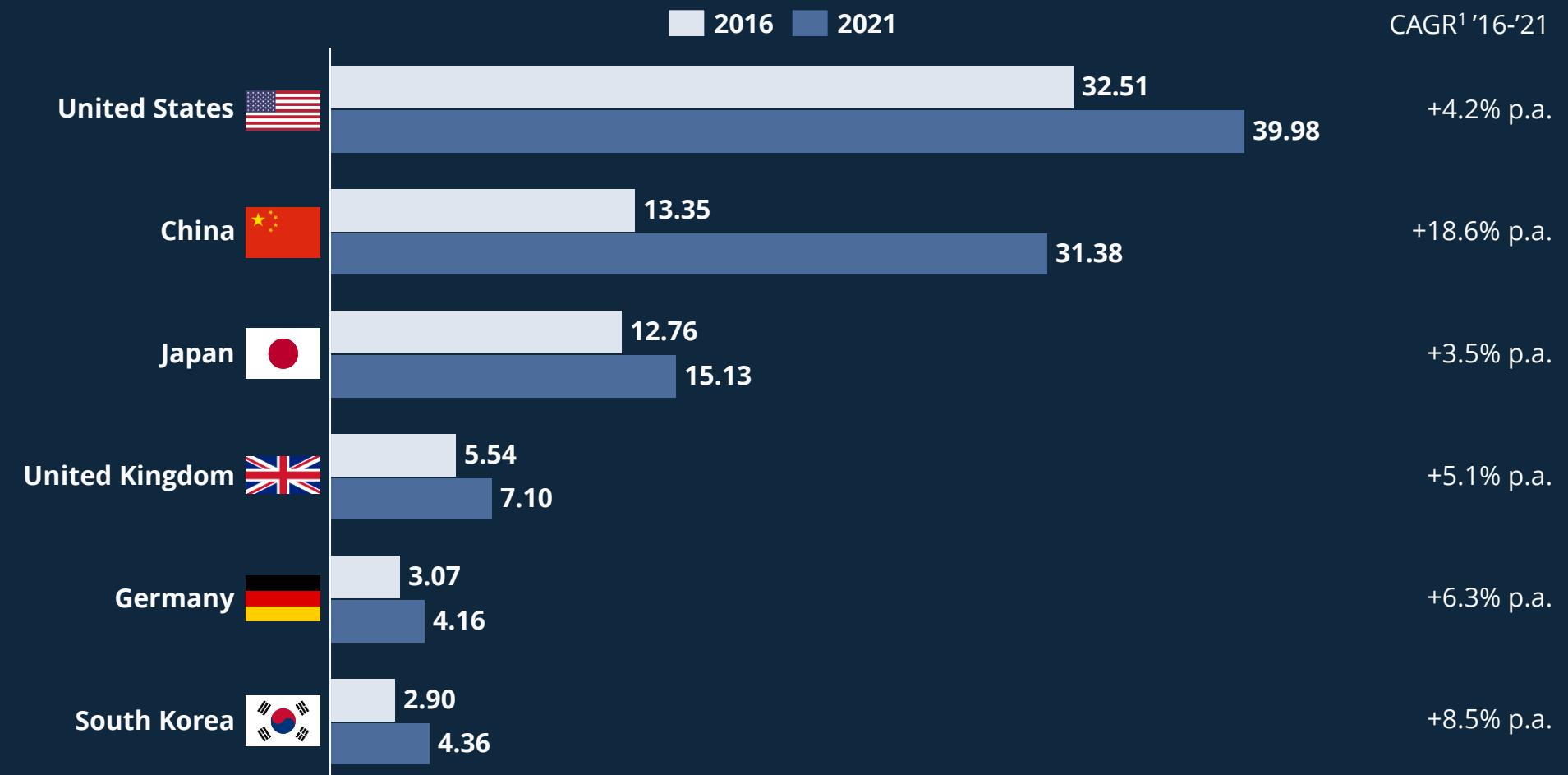
Source: Statista Digital Market Outlook

1: only includes countries of the Digital Market Outlook

2: CAGR: Compound Annual Growth Rate

The 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
 napster •           	     	                 	    

Source: [Statista Digital Market Outlook](#)

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

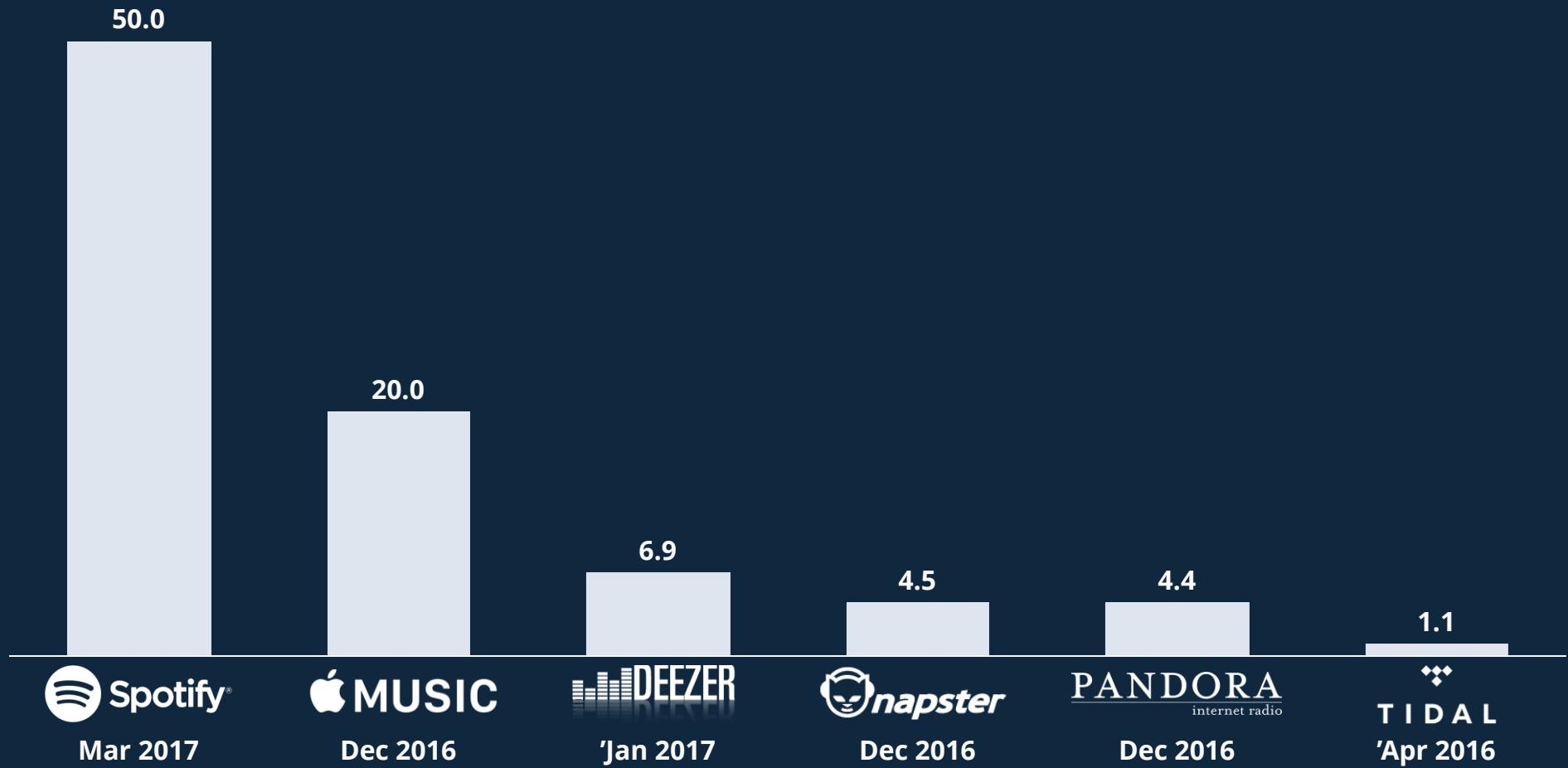
Largest services for online music consumption and their number of users



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

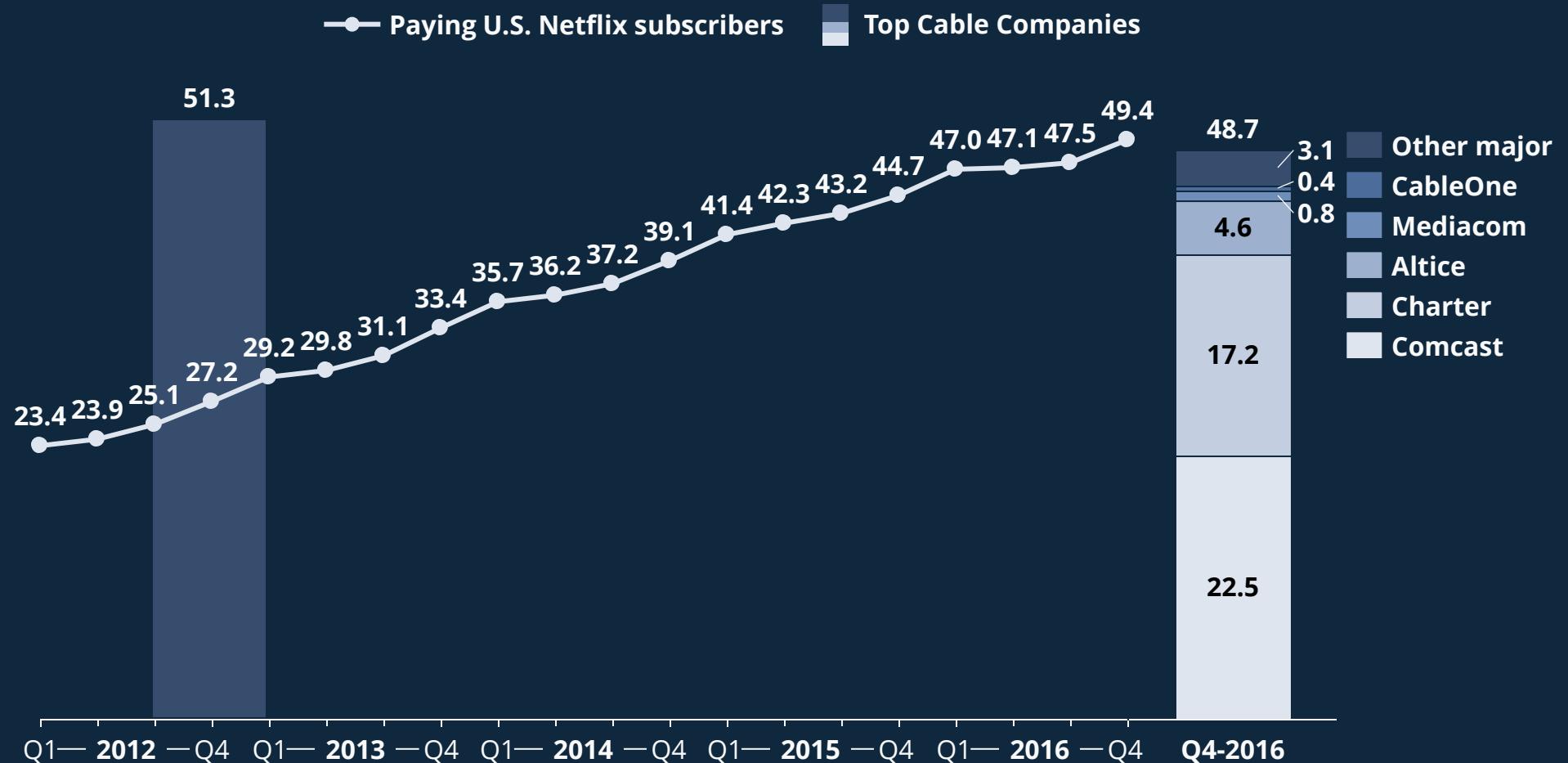
Worldwide paid subscribers of music streaming services (in million)



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\$)



What comes after subscription in digital media?

Discover more of our topic-related research for Digital Media



DIGITAL MEDIA

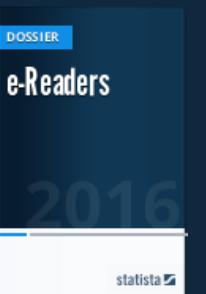
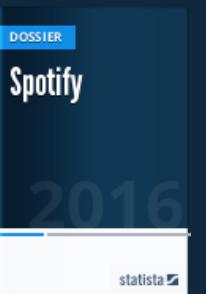
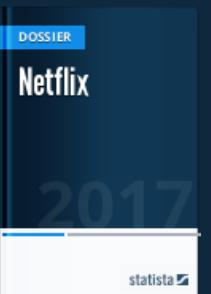
statista

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- › ePublishing

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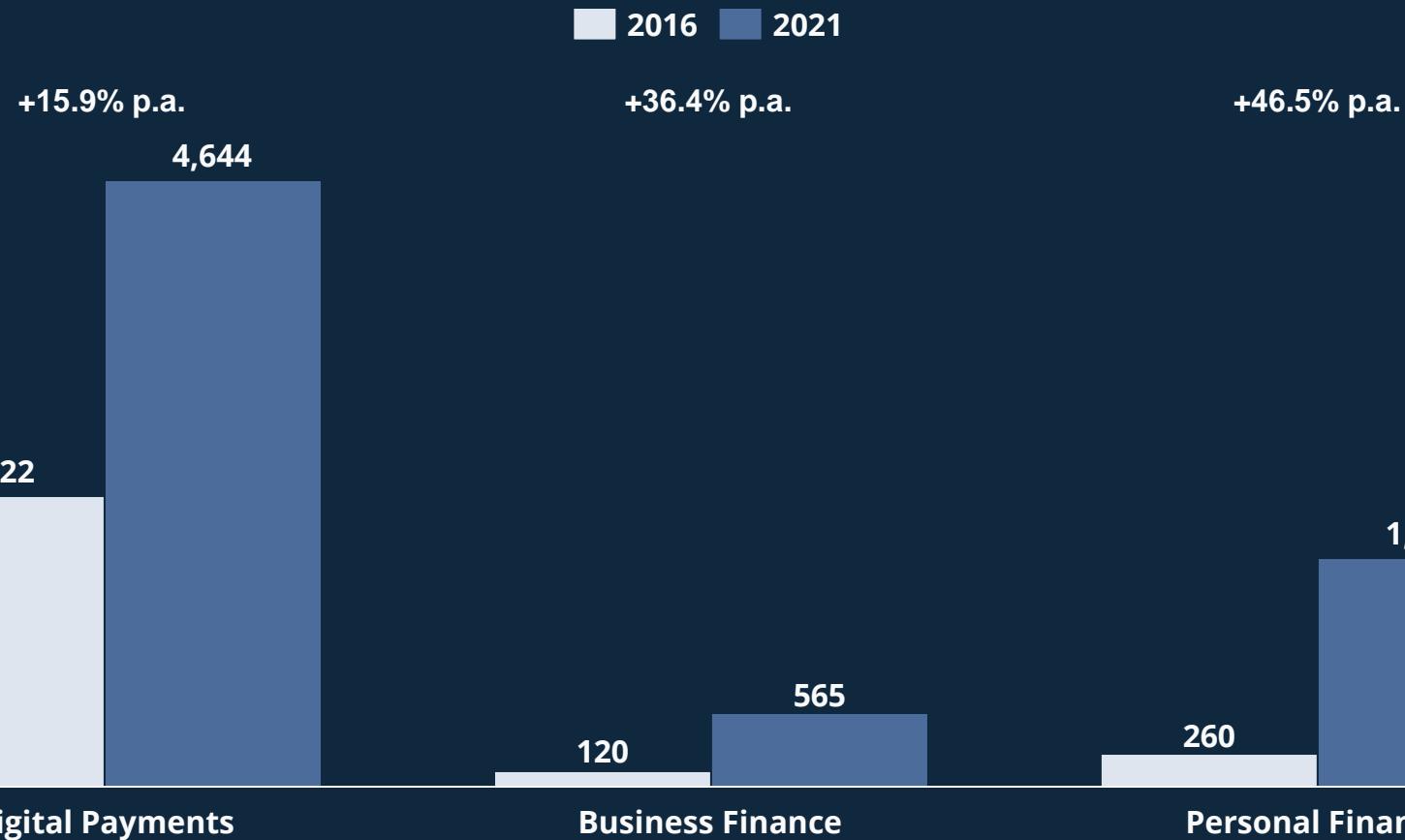
FinTech

“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

Global¹ Digital Payments are expected to more than double by 2021

Global¹ FinTech transaction value and Assets under Management (in US\$ billion) and CAGR² 16-21 by segment



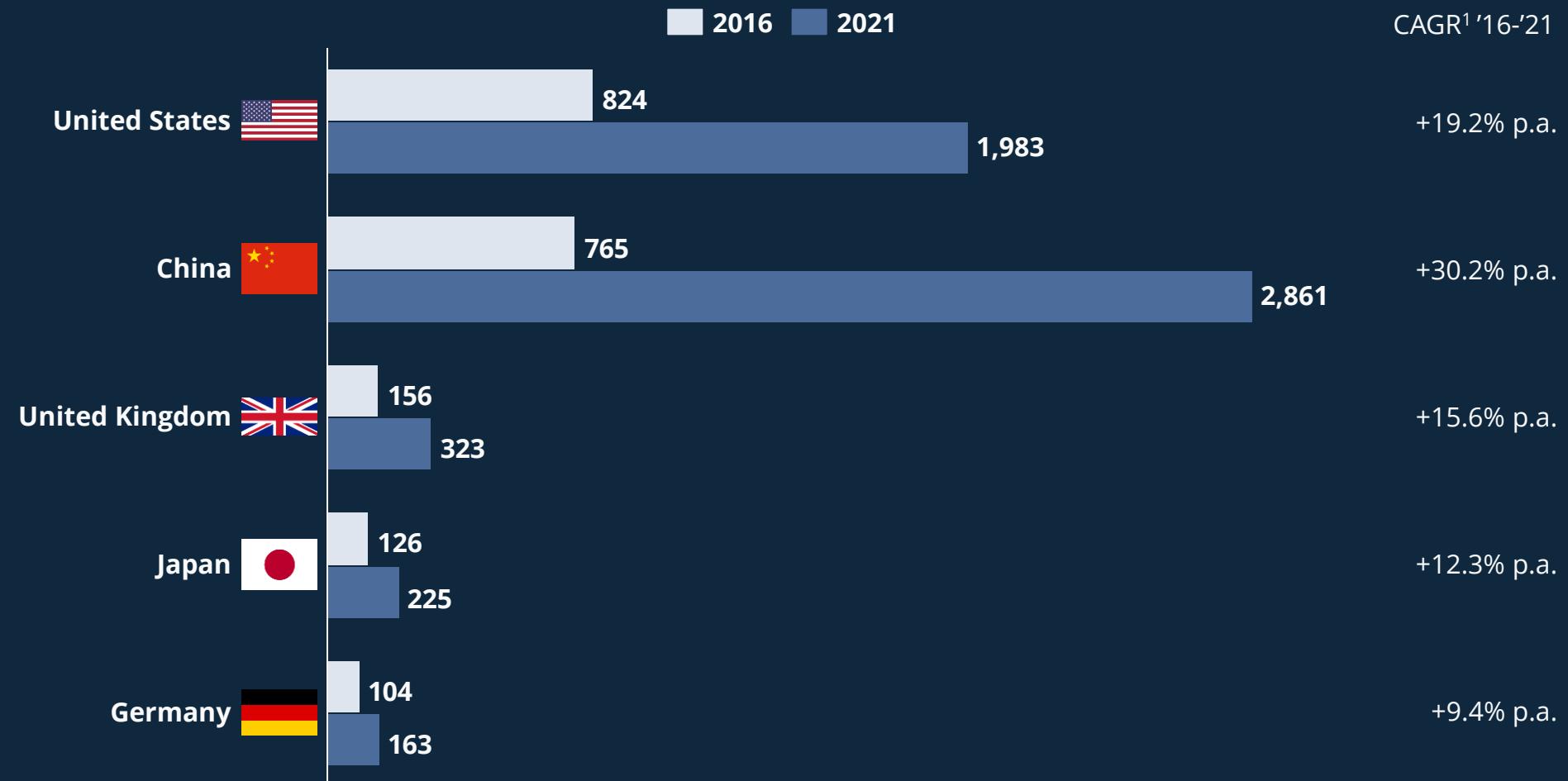
Source: [Statista Digital Market Outlook](#)

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)

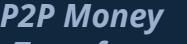


Source: [Statista Digital Market Outlook](#)

1: CAGR: Compound Annual Growth Rate

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

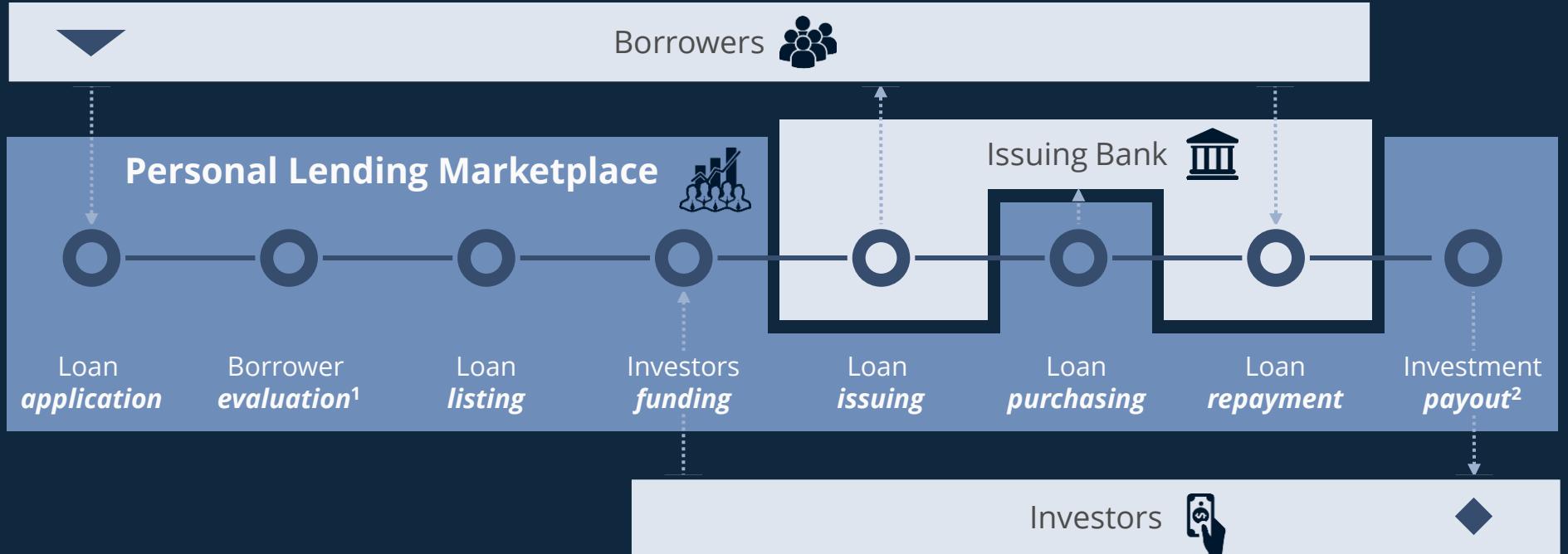
Representative FinTech key player by segment

Digital Payment	Business Finance	Personal Finance
 amazonpayments <i>Digital Commerce</i>                      	 Kabbage <i>LENDINGKART</i> <small>Think Cash, Think Lendingkart!</small>                  	                  

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 issuance³

Investor:
Return on investment
from Marketplace

Source: [Statista Digital Market Outlook](#)

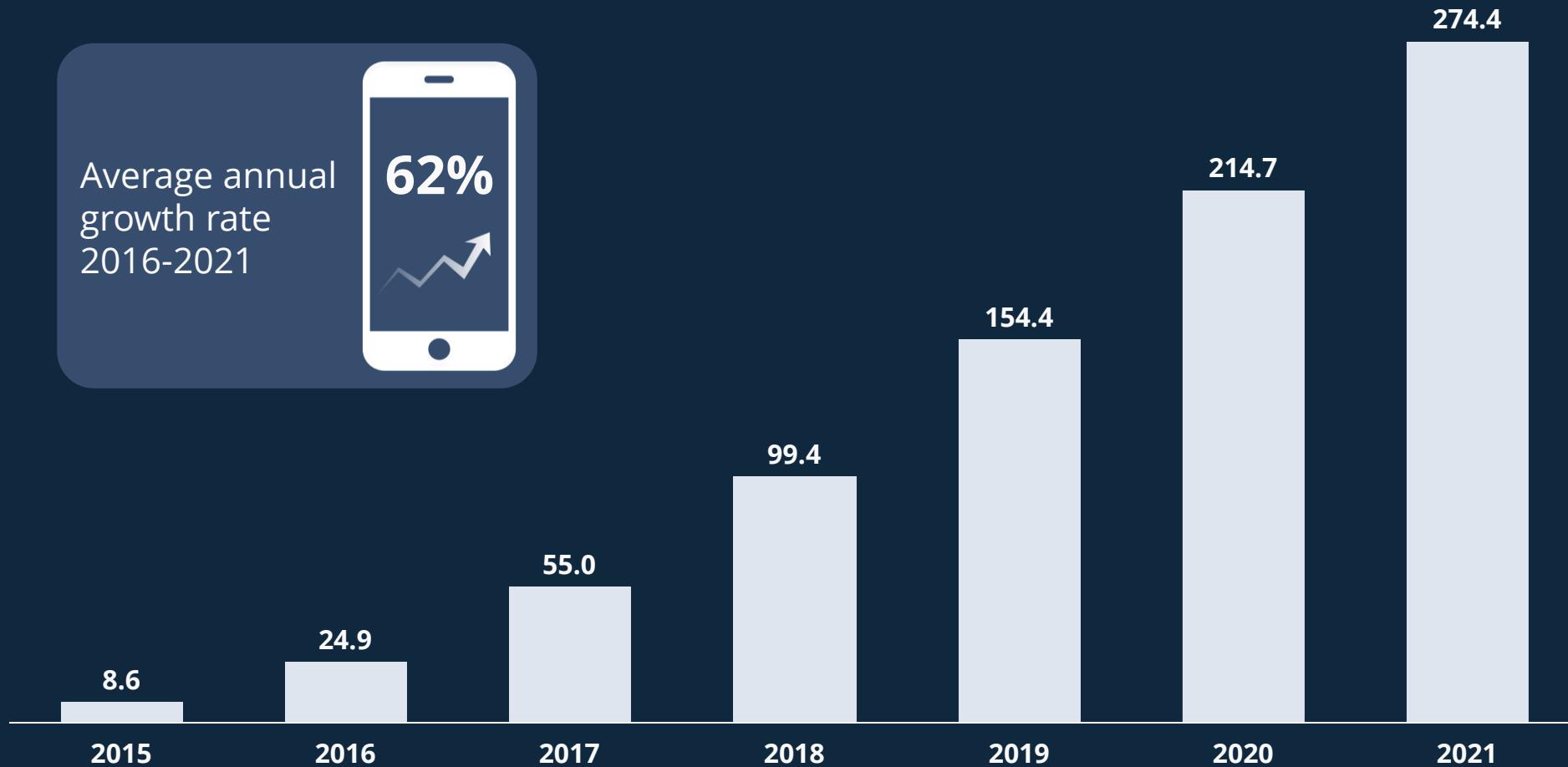
1: Includes determination of loan interest rates, based on a prior credit scoring

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

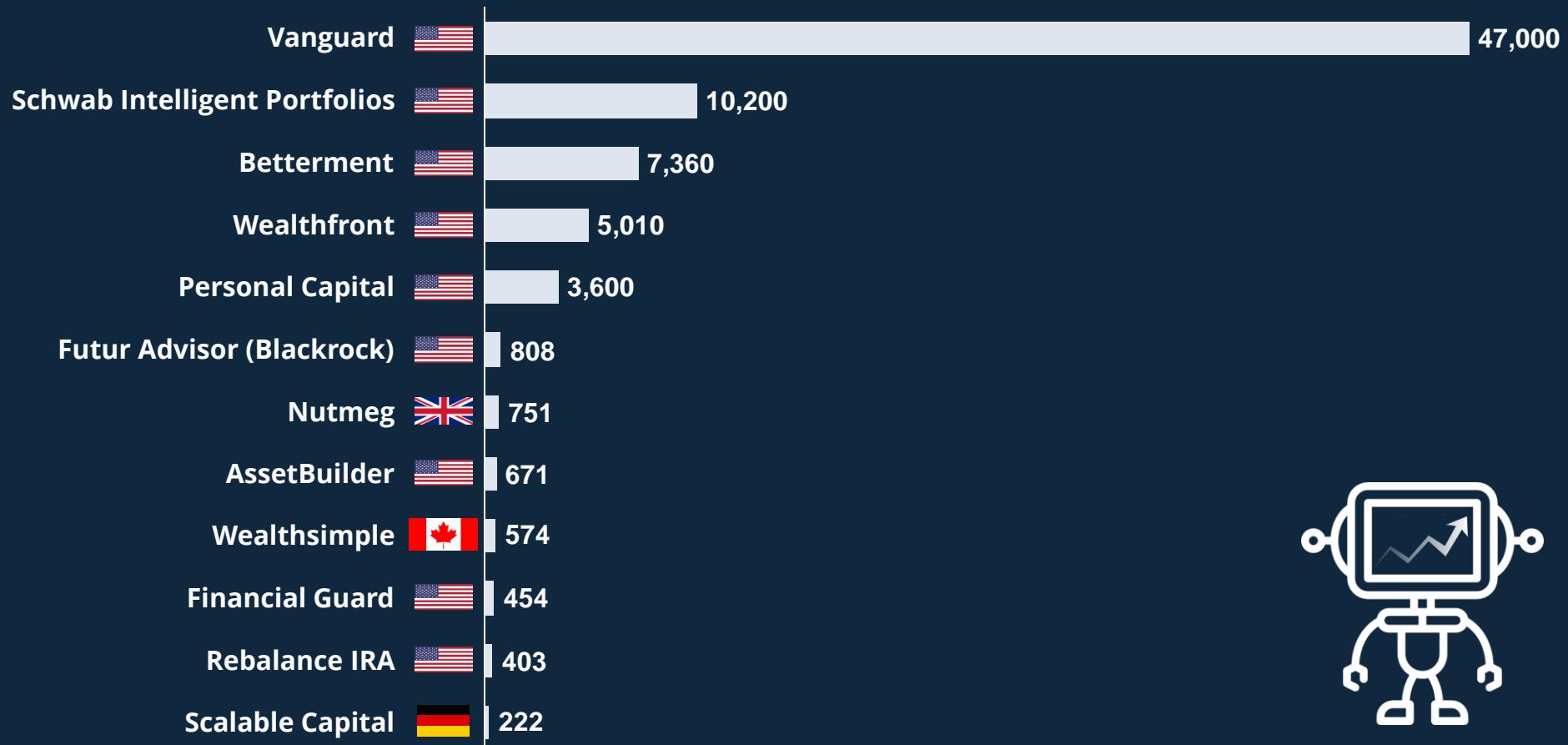
Estimated U.S Mobile Payment transaction volume (in US\$ billion)



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)

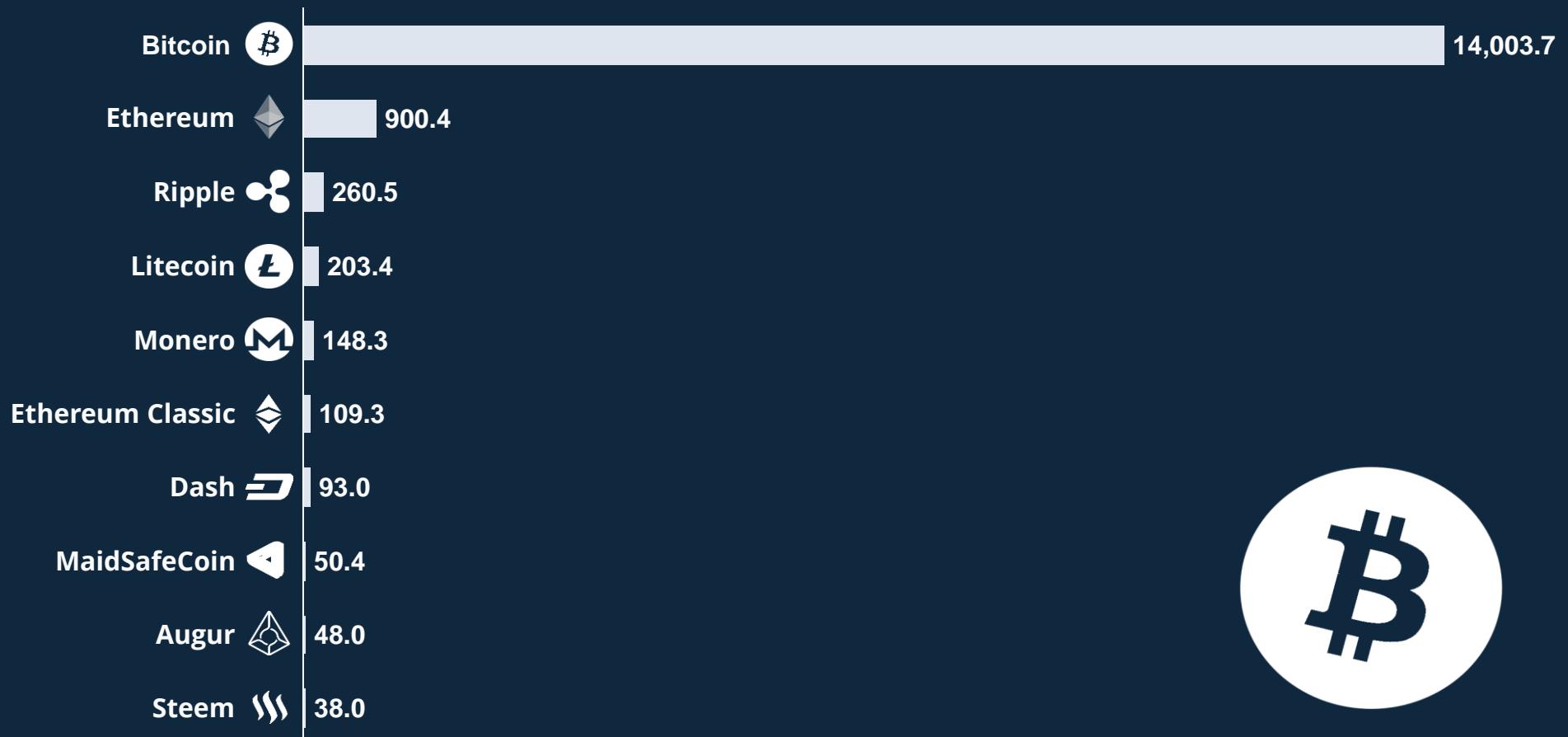


Sources: Statista estimates based on company information, Press Releases, Graphiq, Nerdwallet, CNBC, Business Insider
Information based on latest available data, as of February 2017. We do not claim that the information provided is complete.



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\$ million¹)

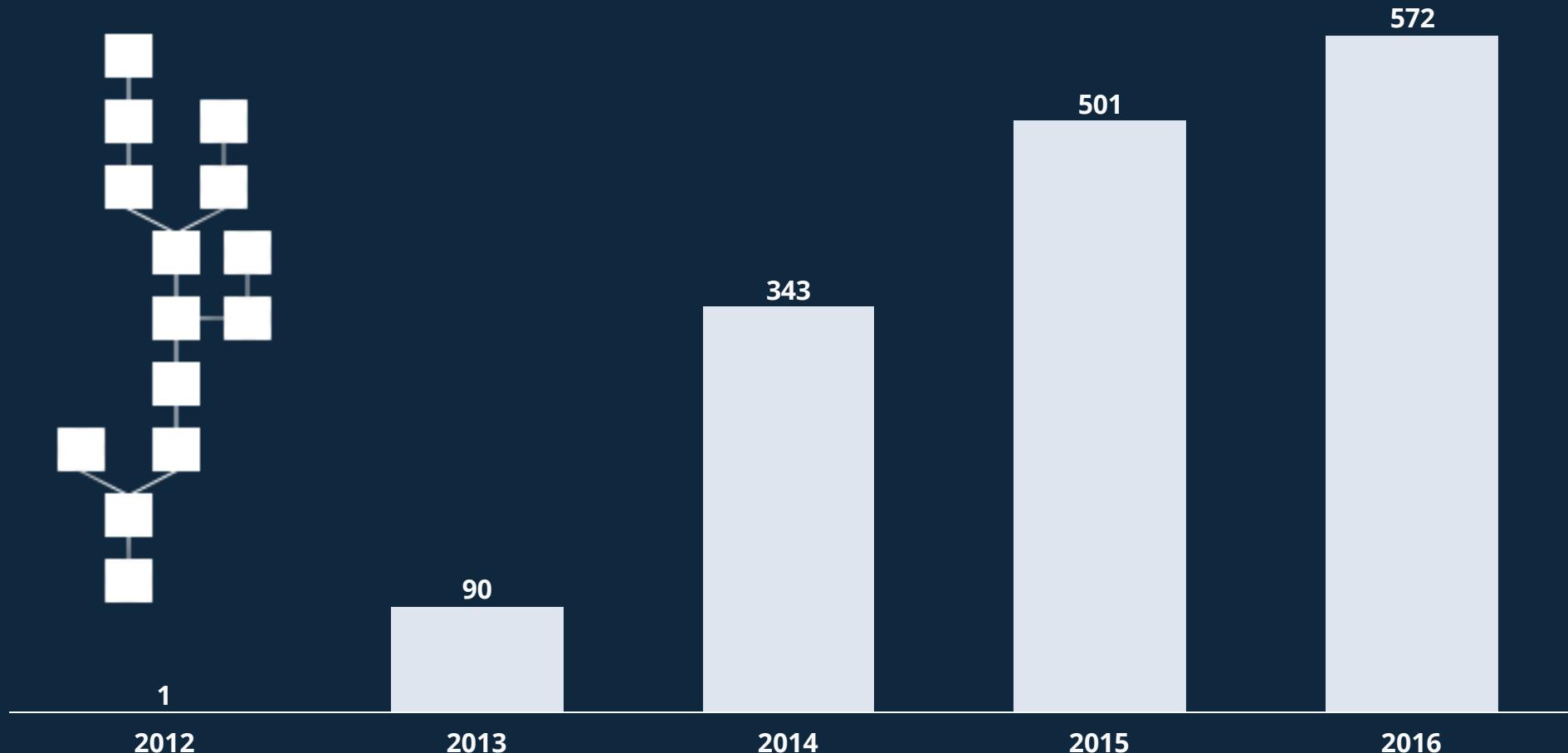


source: CoinMarketCap
1: as of January 16th, 2017



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)



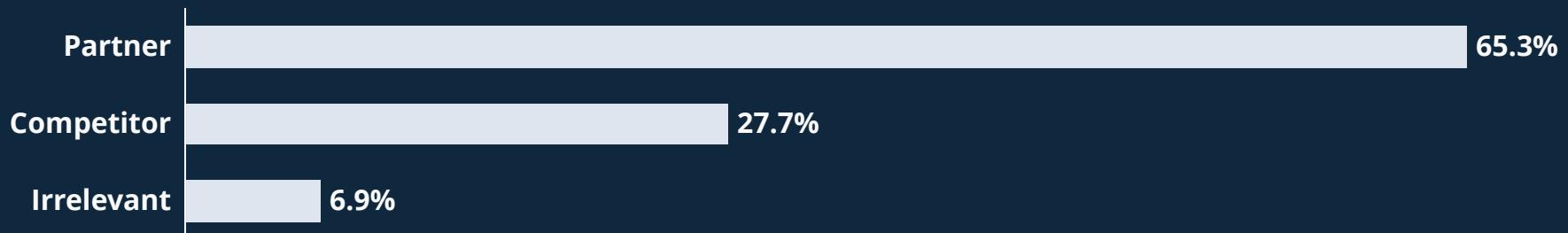
source: CB Insights

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 firms¹



sources: KPMG, CB Insights, Capgemini

1: Worldwide survey; 2016

How FinTech is reshaping the financial world

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Digital Advertising

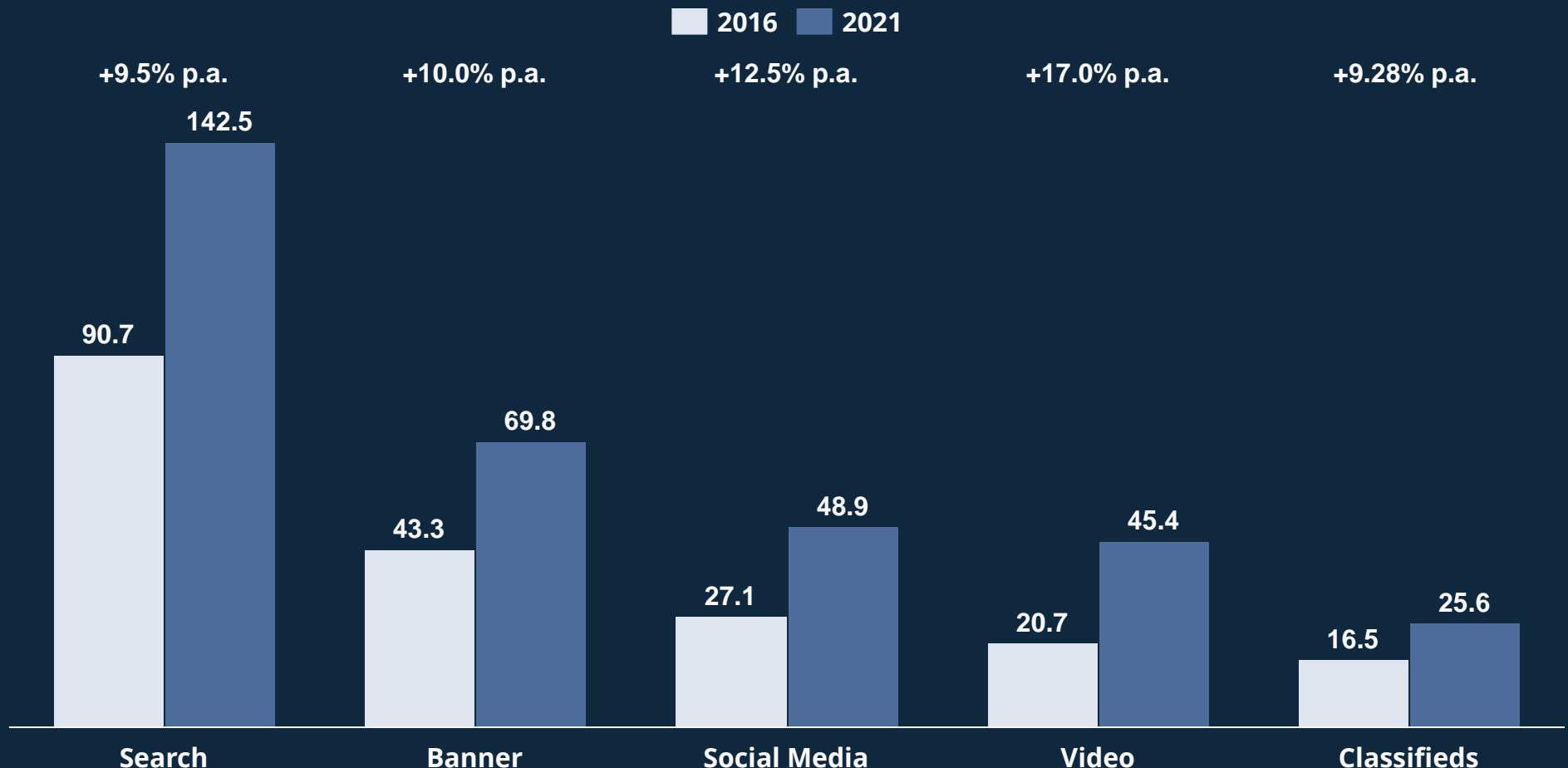
A dark, semi-transparent background image of a man in a suit and bow tie, sitting at a desk with a laptop. He is wearing a watch on his left wrist. The image serves as a backdrop for the text.

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

Global¹ digital advertising revenue forecast (in US\$ billion)



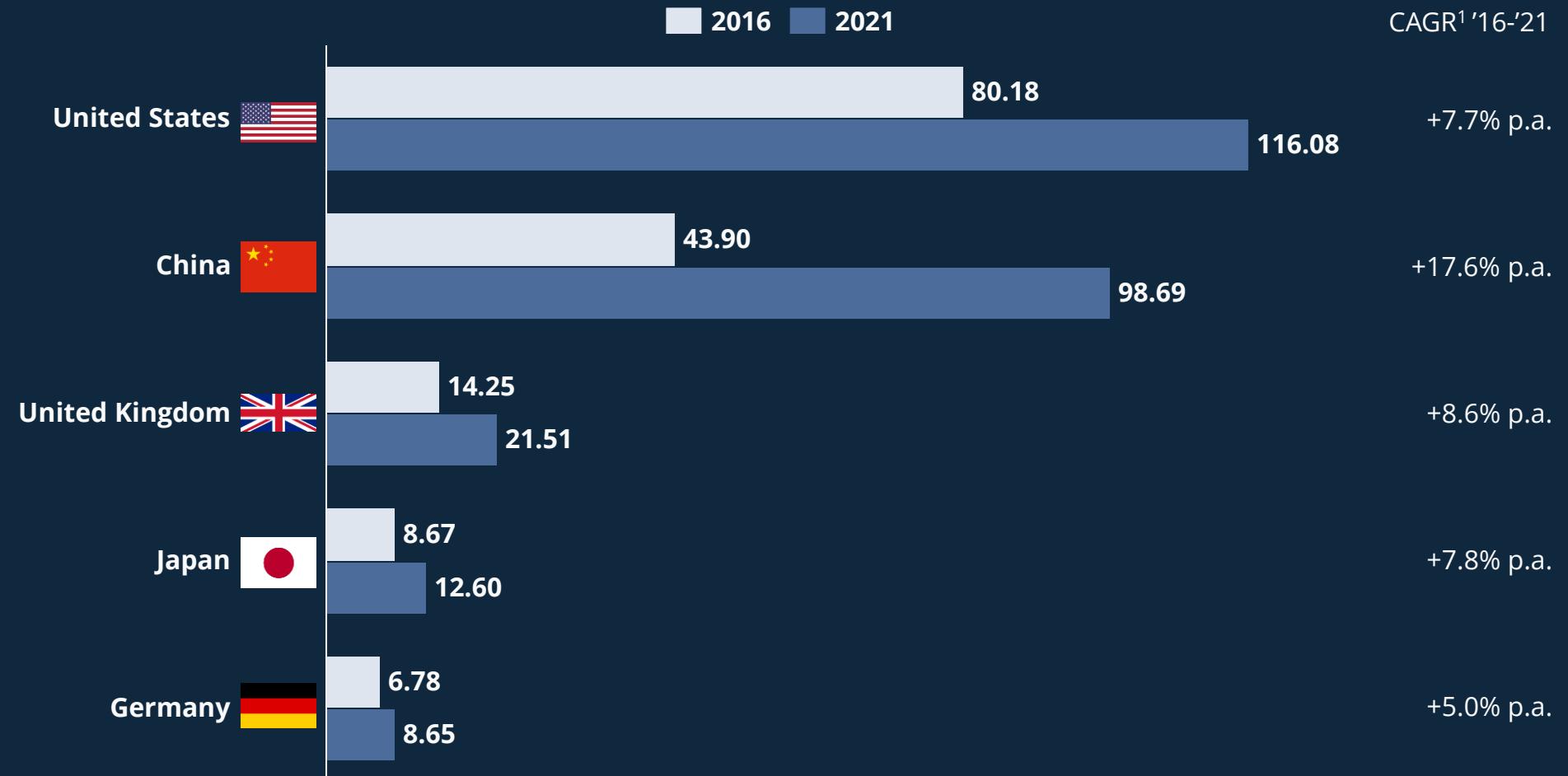
Source: [Statista Digital Market Outlook](#)

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)

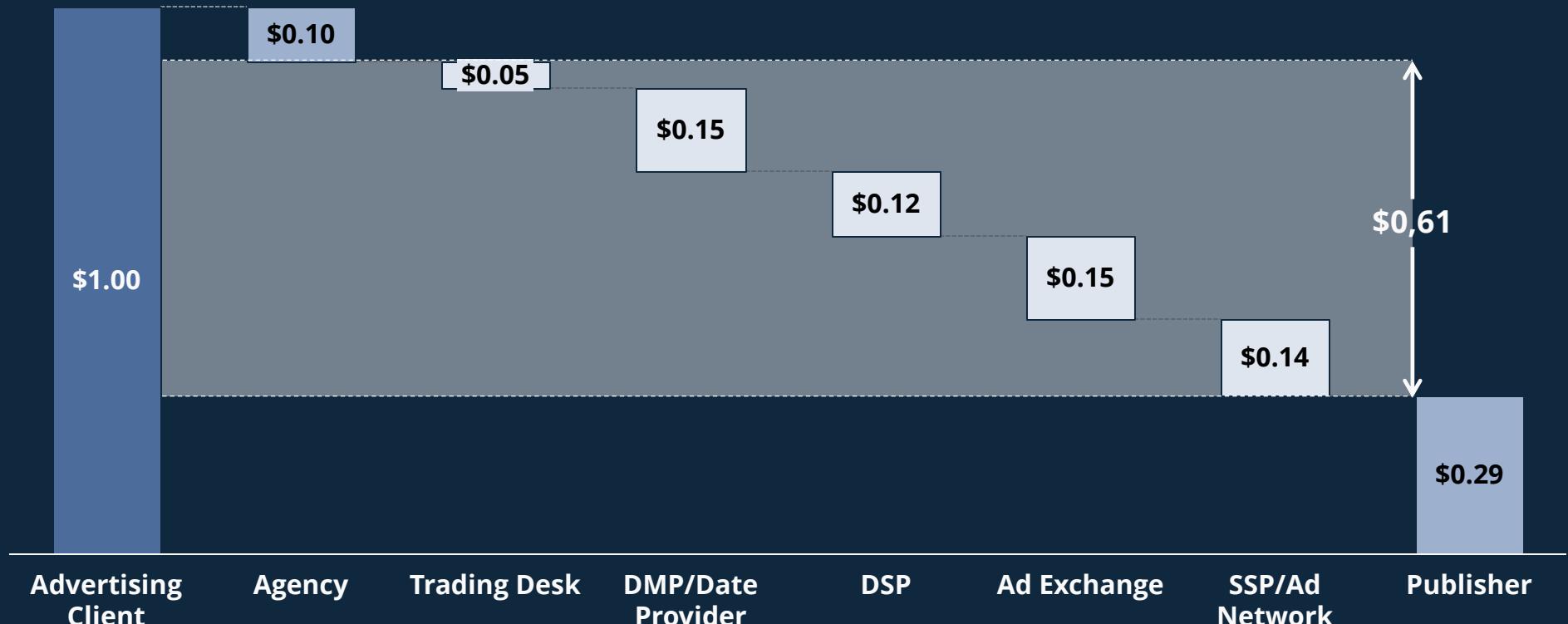


Source: **Statista Digital Market Outlook**

1: CAGR: Compound Annual Growth Rate

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

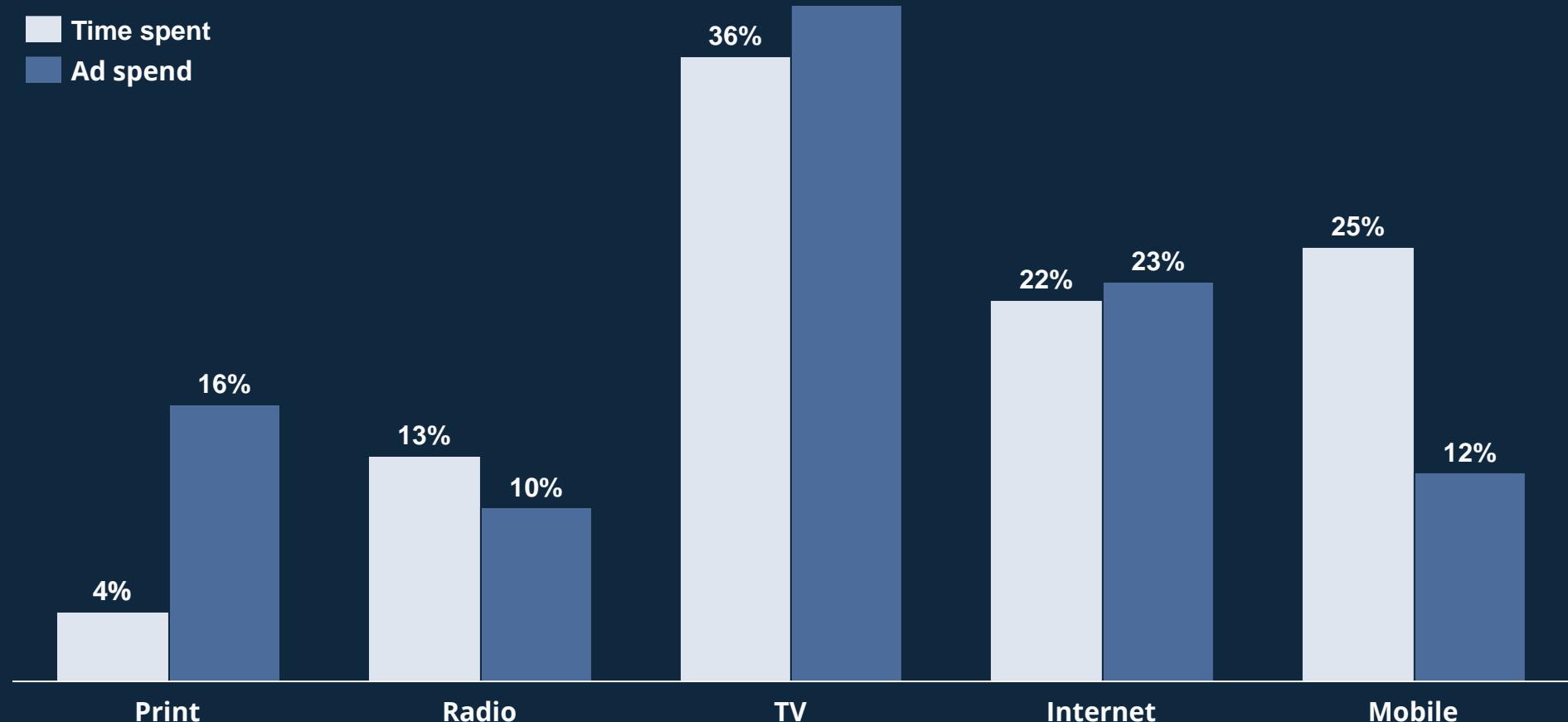
Allocation of US\$1 in programmatic advertising



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

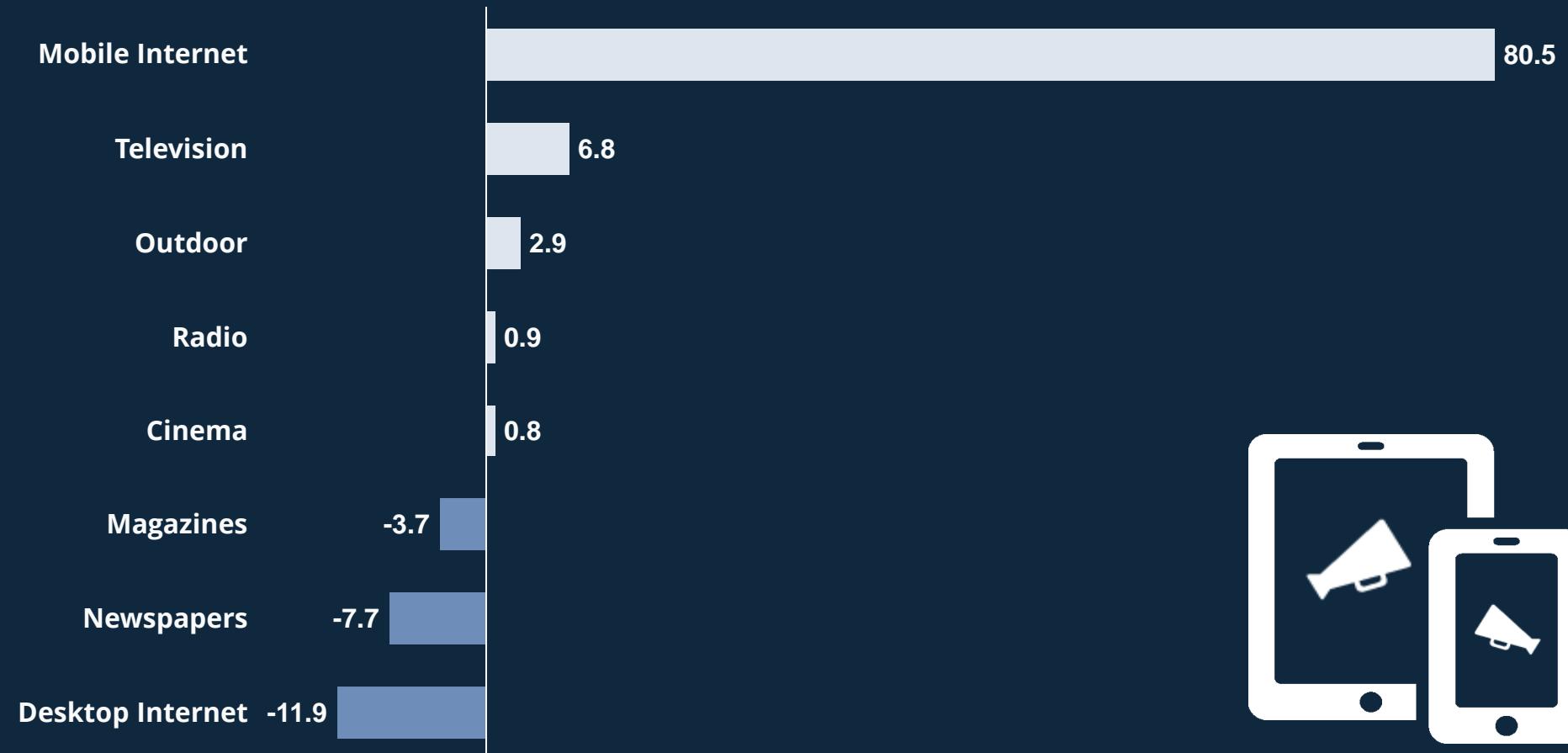


source: KPCB

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

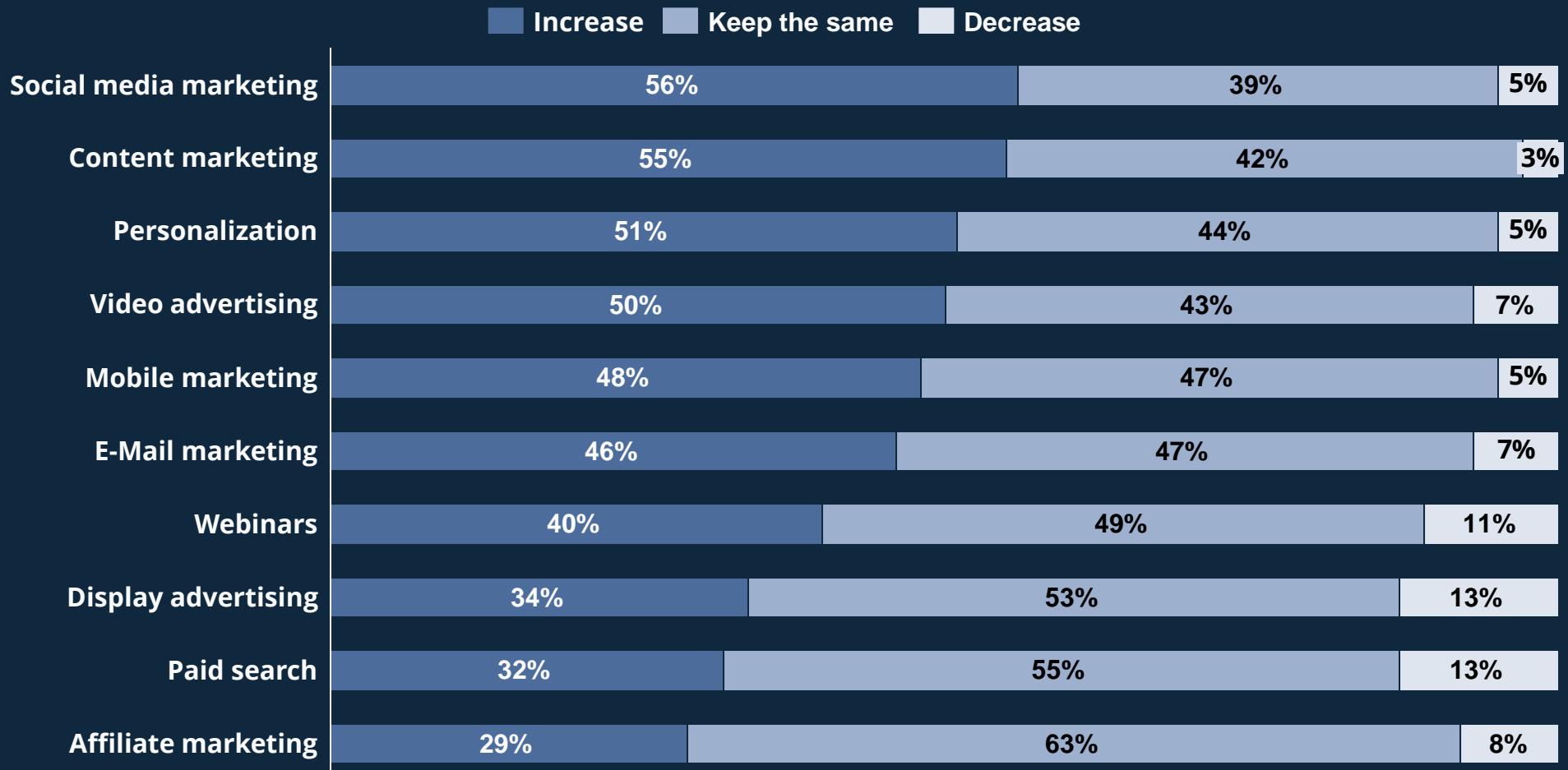
Estimated change in advertising spending between '16 - '19 in US\$bn p.a.



source: Zenith Optimedia

Social media & content marketing are top priorities for marketers

Digital marketing budget plans for 2017 (in % of respondents)¹

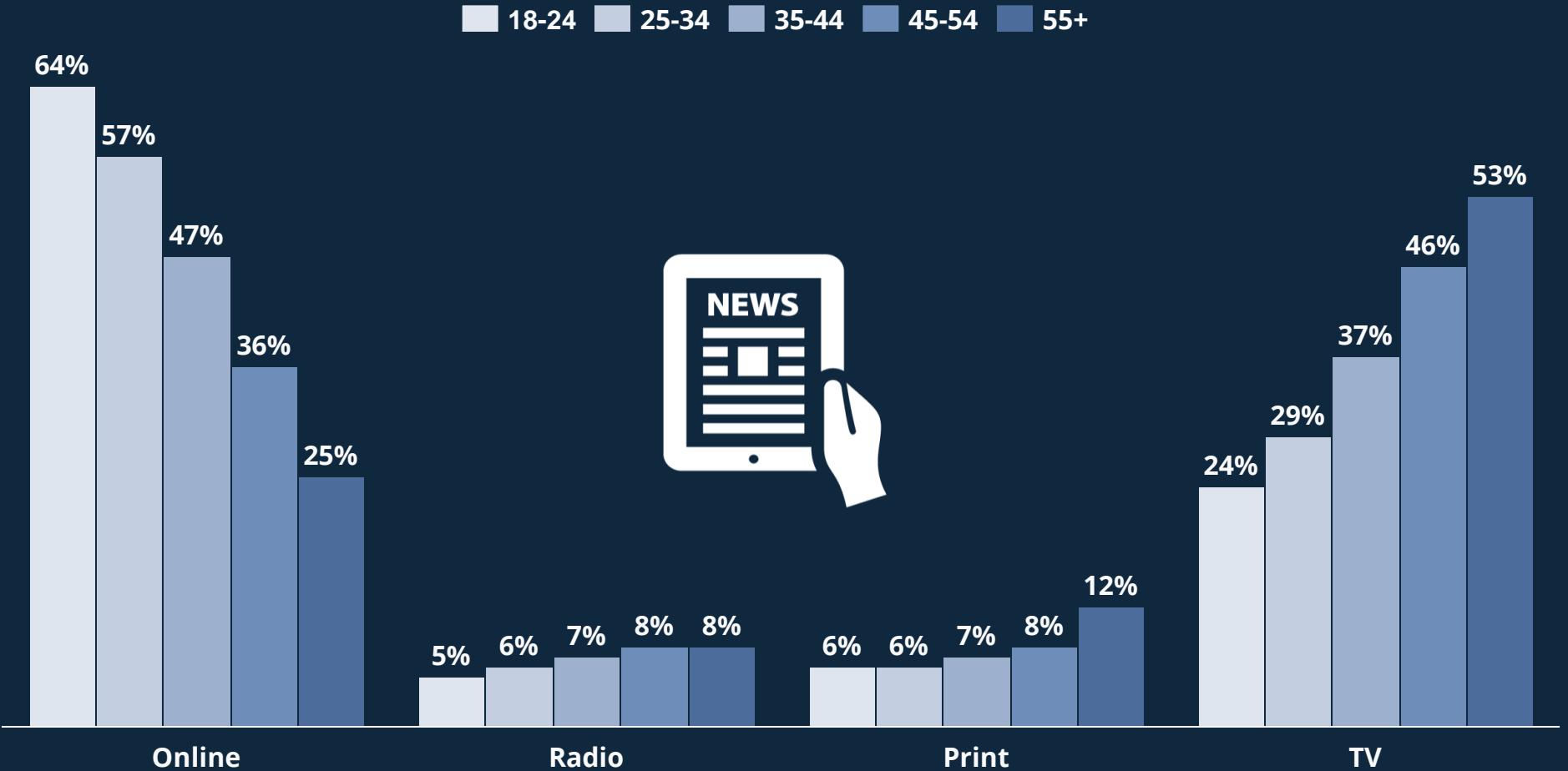


source: Econsultancy, Adobe

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

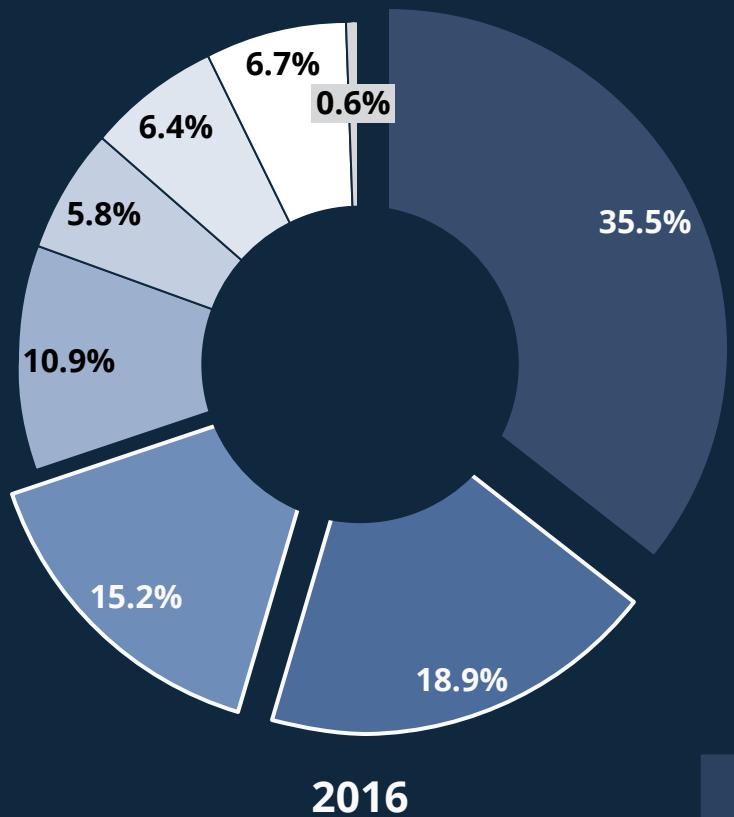


source: Reuters Institute for the Study of Journalism

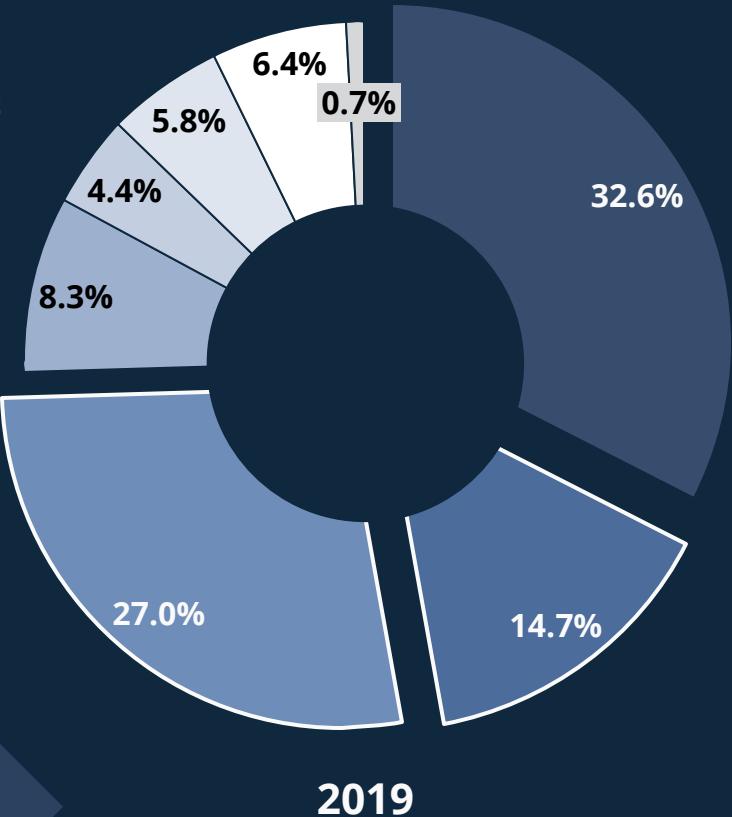
Note: Based on a survey of 52,225 news consumers across 26 countries; numbers may not add up to 100% due to rounding

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

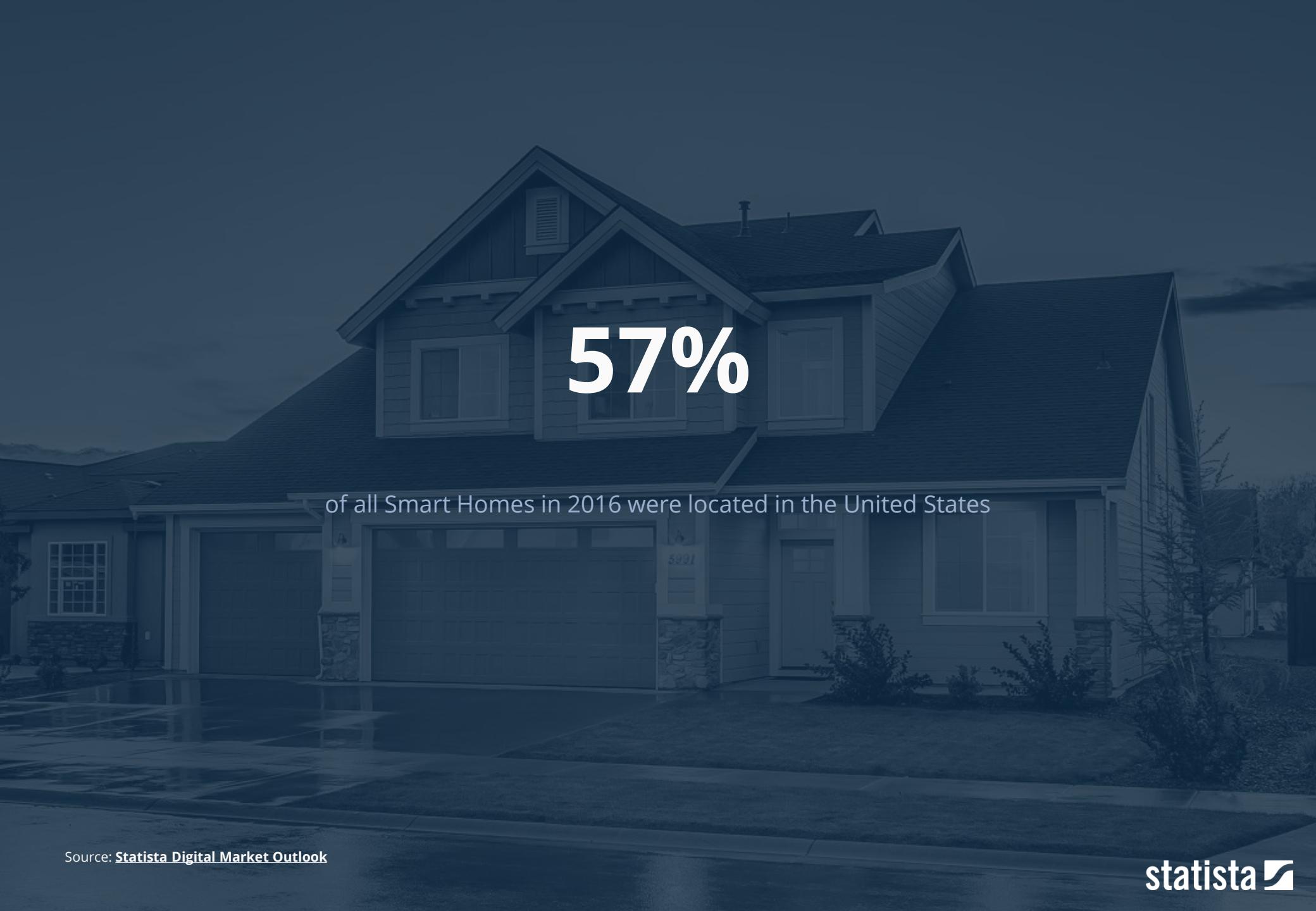
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Smart Home

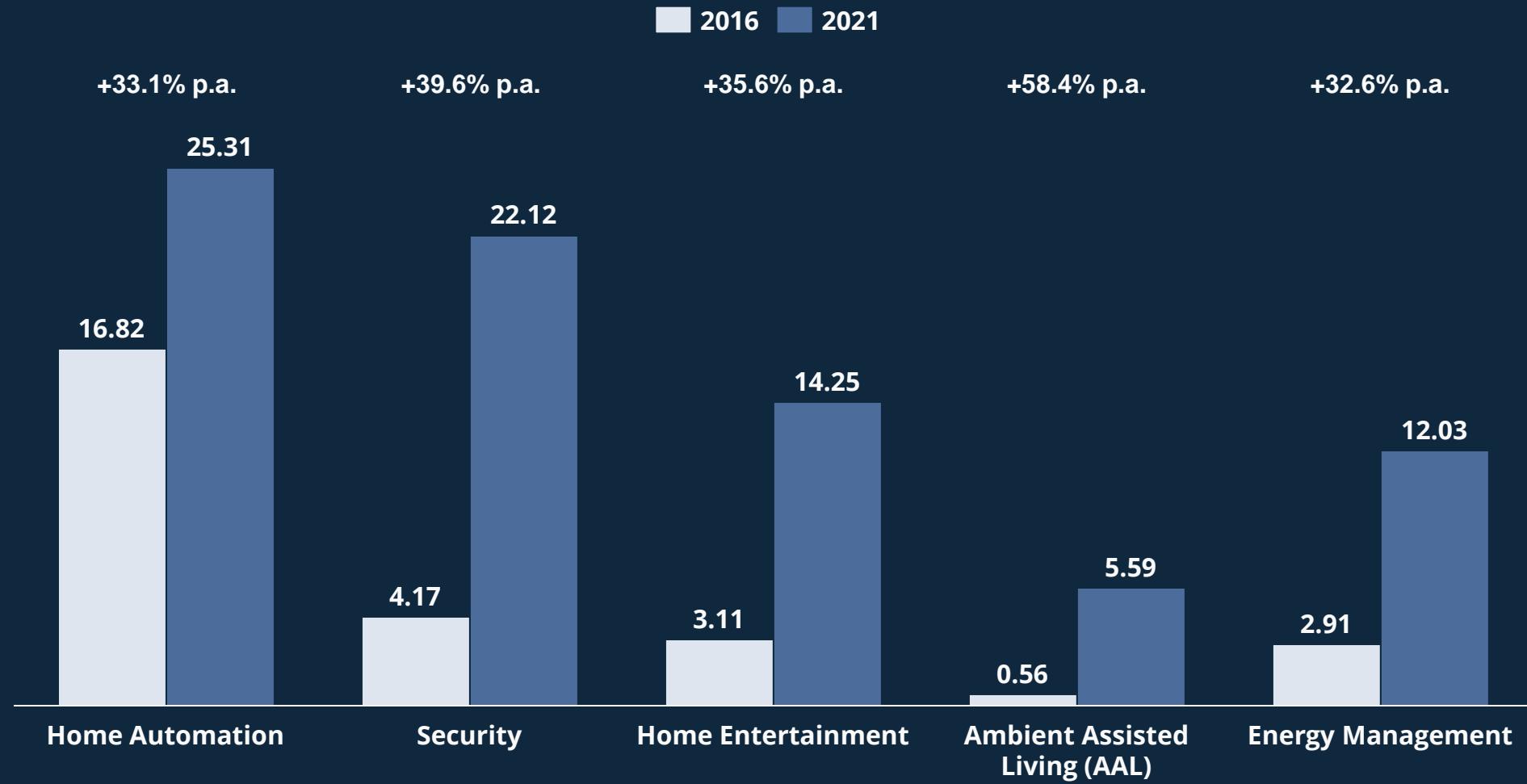


57%

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

The global Smart Home market will more than quadruple by 2021

Global¹ Smart Home Revenue (in US\$bn) and CAGR² 16-21 by segment



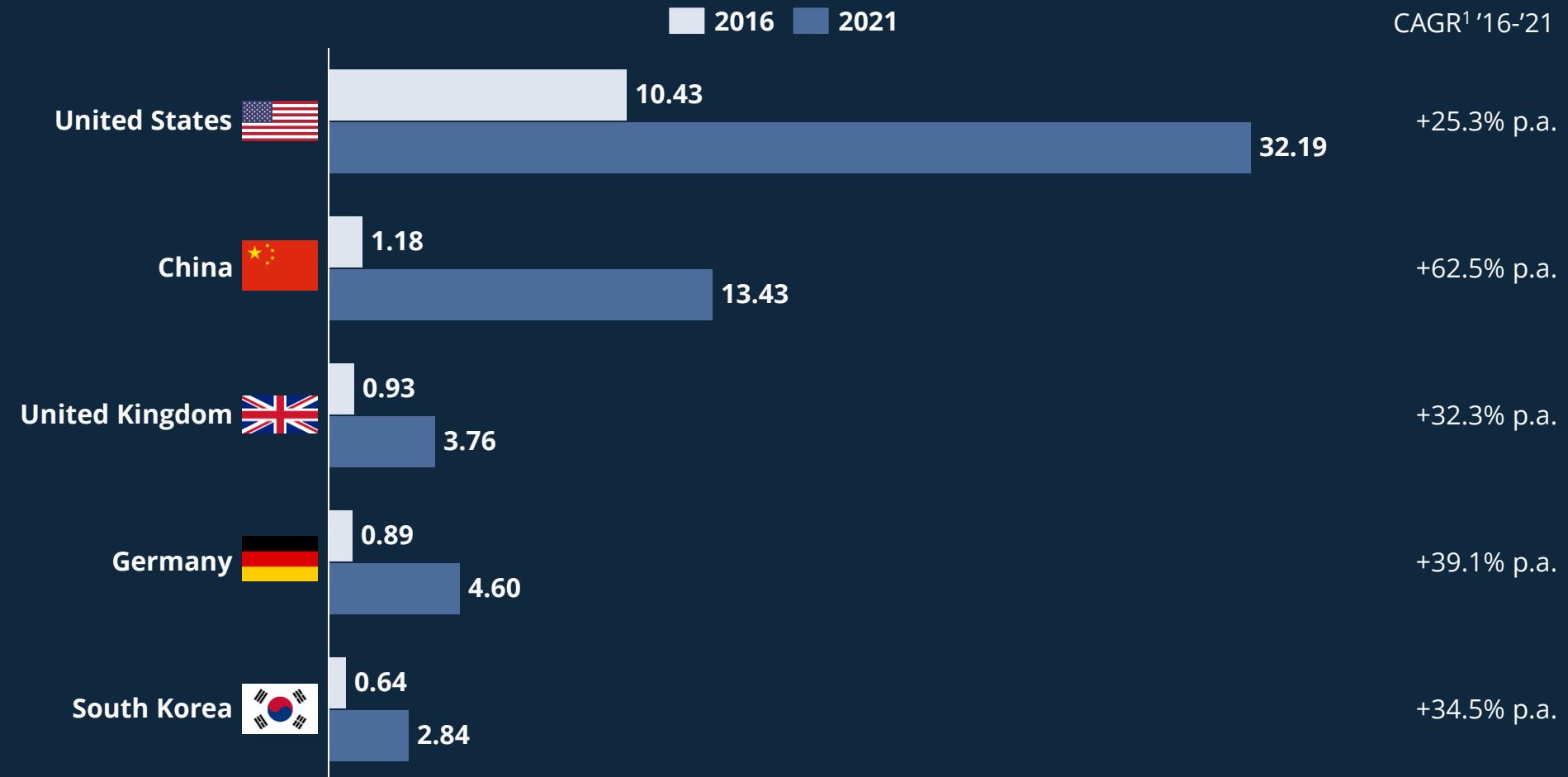
Source: [Statista Digital Market Outlook](#)

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



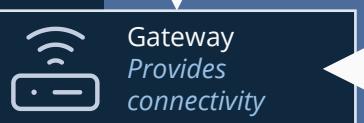
Stores
Owned or third party



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

Internet
Enables remote access

Gateway
Provides
connectivity

Devices and/ or services

data and/ or revenue

↔: Data

The Smart Home company landscape comprises all kinds of origins

Key players by segment¹ and integration potential

	Generalists and Home Automation	Security	Home Entertainment	Ambient Assisted Living (AAL)	Energy Management
Dedicated Smart Home companies	         	     	   	 	   
Players entering the market from foreign industries	       	  	   	  	  
Integration potential²					

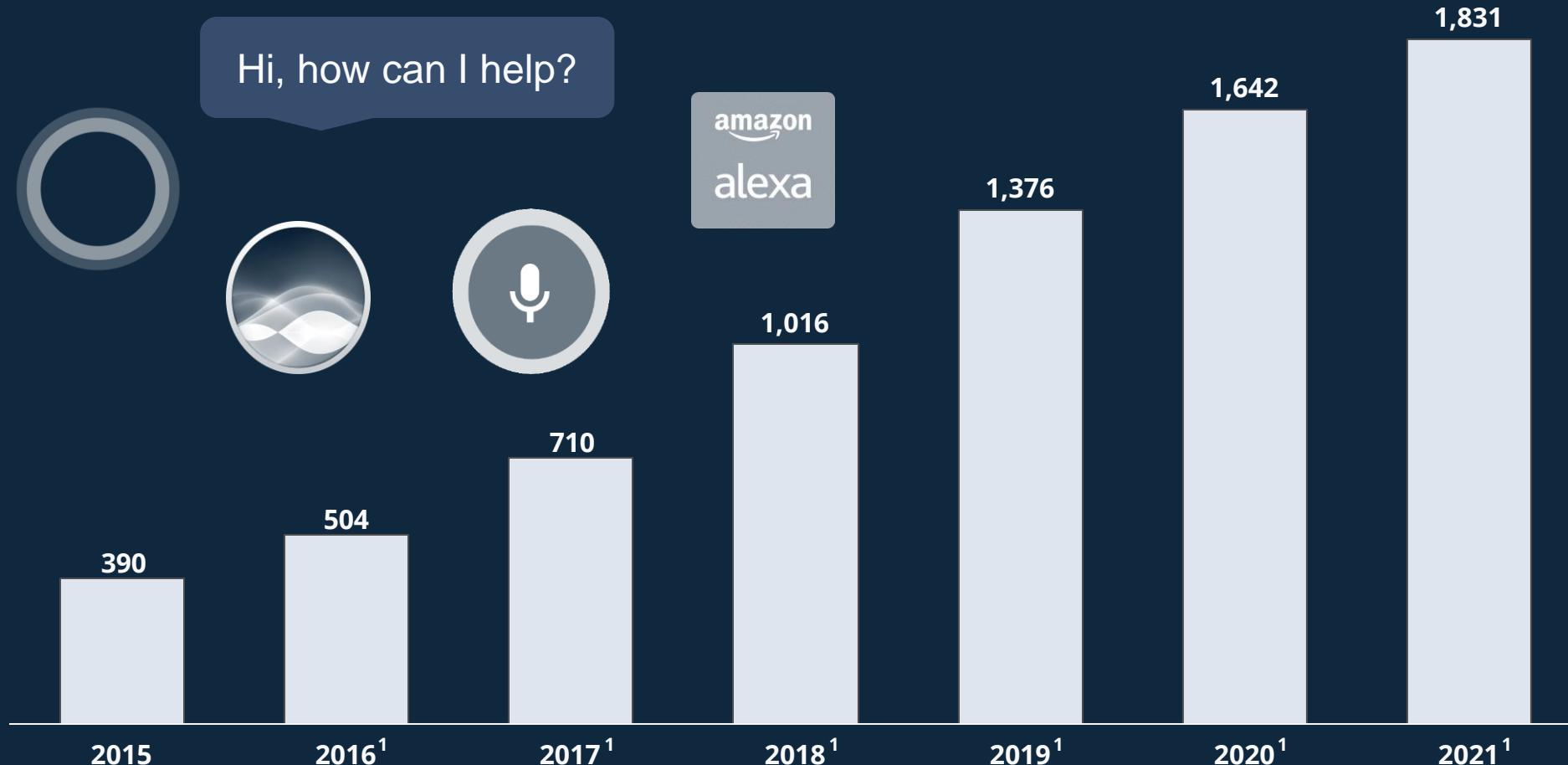
Source: **Statista Digital Market Outlook**

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)

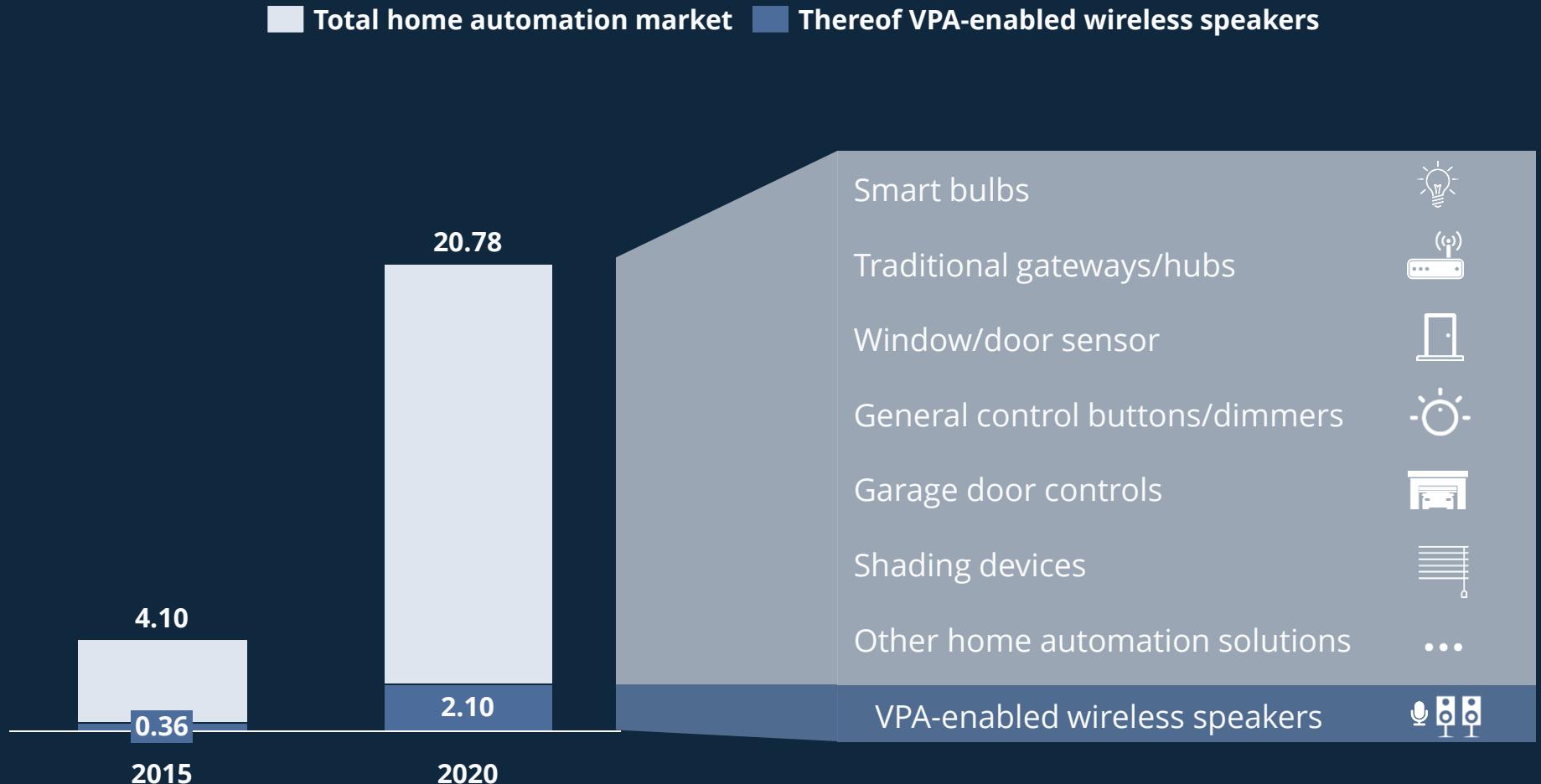


Source: **Statista Digital Market Outlook**; Tractica, 2015 to 3rd quarter 2016

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

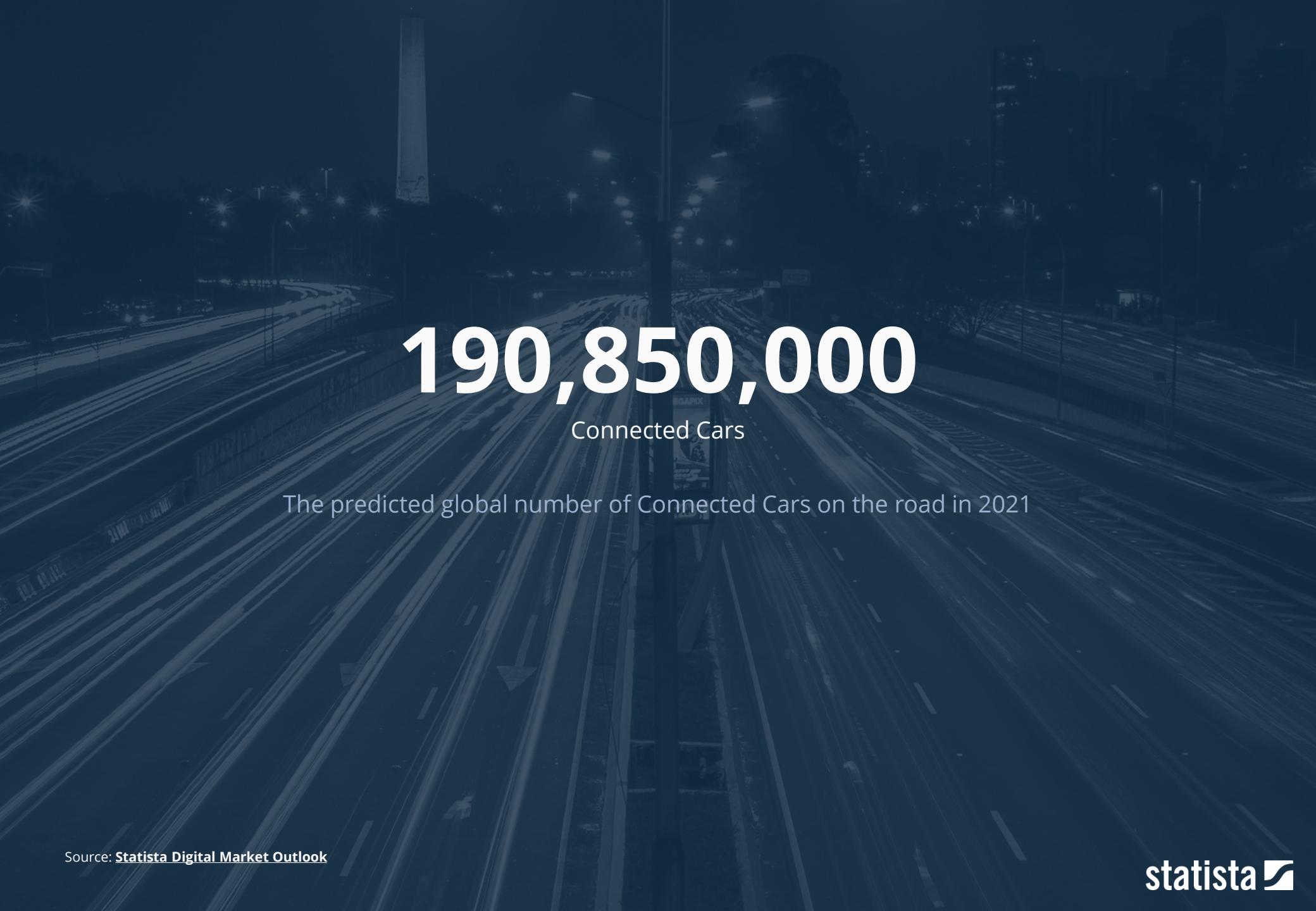
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Connected Car



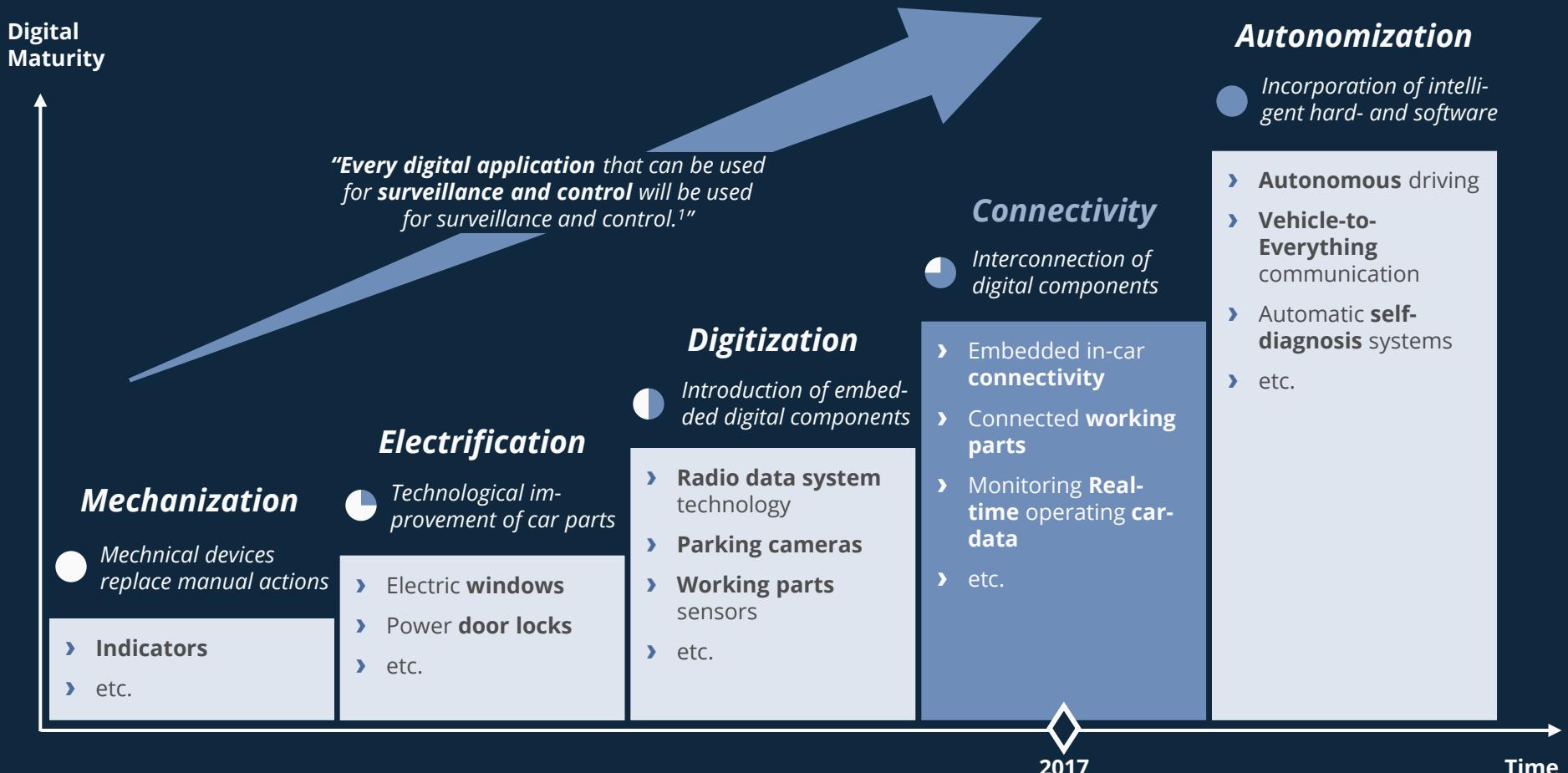
190,850,000

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

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

Global¹ Connected Car revenue in US\$ billion and CAGR² by segment

■ 2016 ■ 2021

+37.1% p.a.

71.82



+58.5.4% p.a.

14.83

0.19

1.92

+49.4% p.a.

7.91

1.06

Connected Hardware

Vehicel Services

Infotainment Services

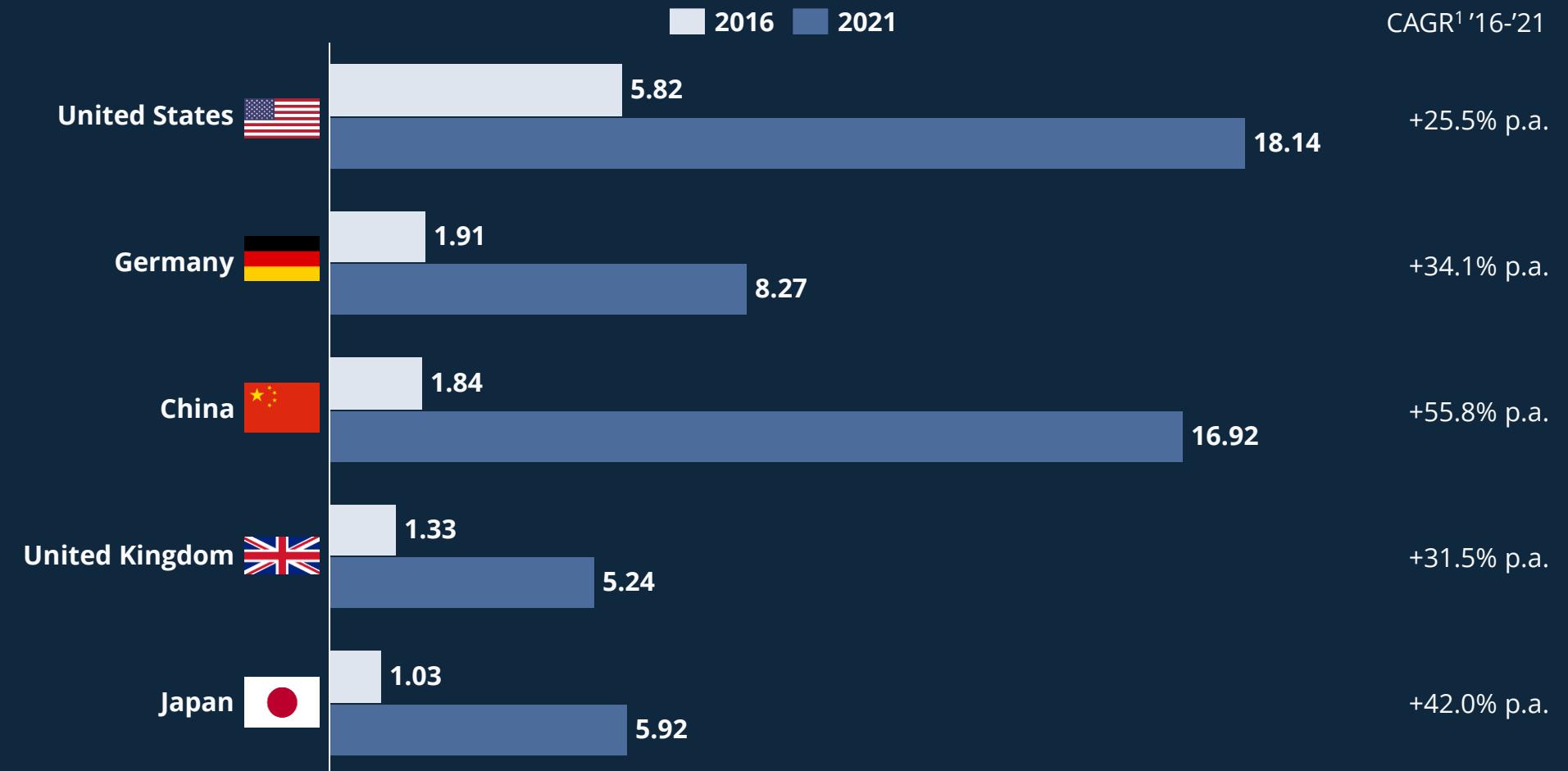
Source: **Statista Digital Market Outlook**

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

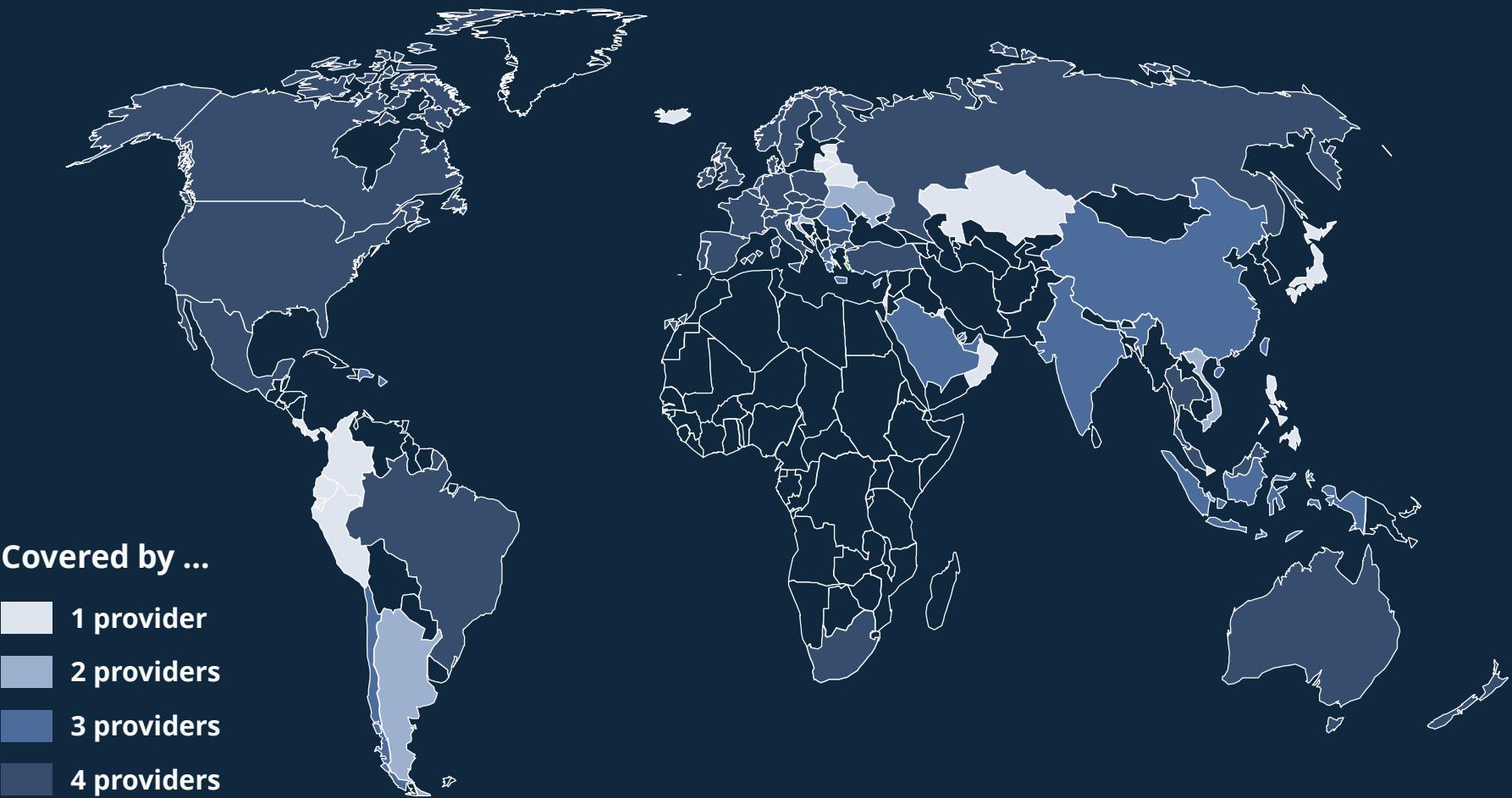
Key players and their digital service programs¹

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

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 providers¹

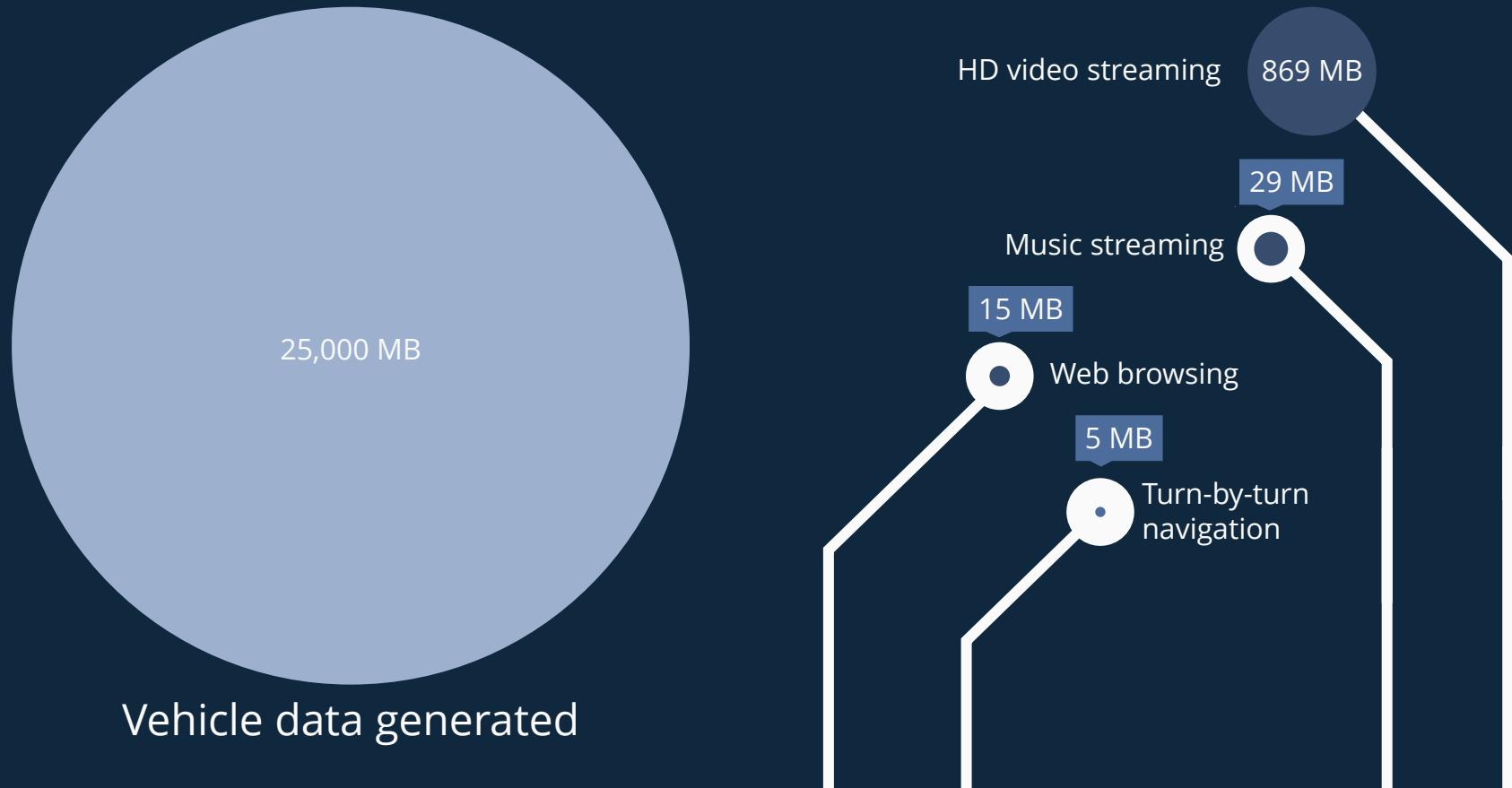


source: Company Information, [Statista Digital Market Outlook](#)

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

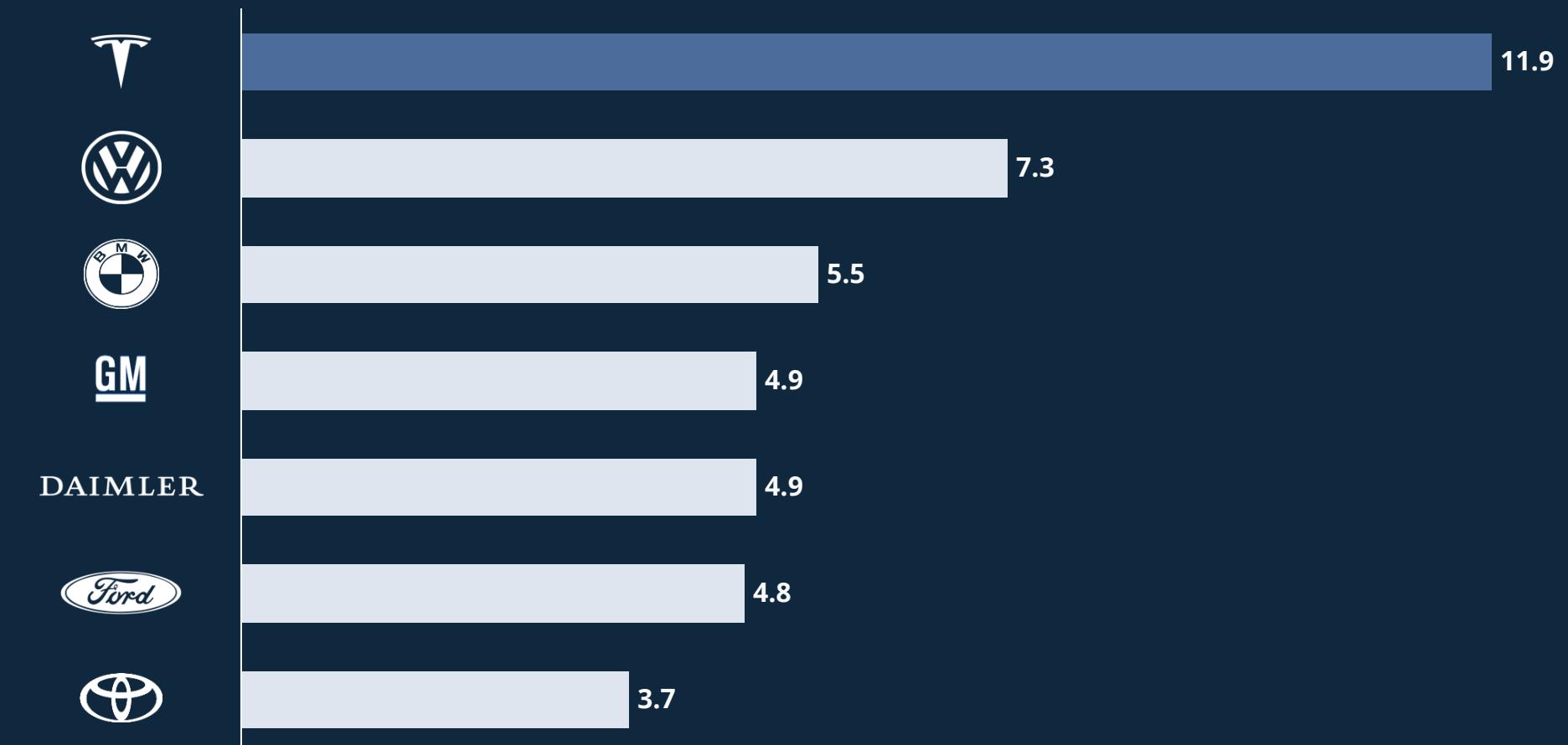
Data generate per hour by Connected Cars compared to online activities



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 2016¹



Sources: Company Information, Statista

1: 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

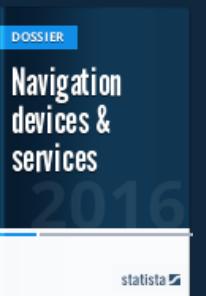


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- › Vehicle Services

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Contacts and authors



Felix Wegener



Tobias Bohnhoff



Sebastian Buss



Philipp Huhn



Kathrin Schreiber

E-MAIL
DMO@statista.com

WEB
statista.com/outlook

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Statista • Johannes-Brahms-Platz 1 • 20355 Hamburg • +49 40 413 49 89 0 • www.statista.com

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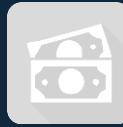
9 Markets, 34 segments & 85 sub-segments

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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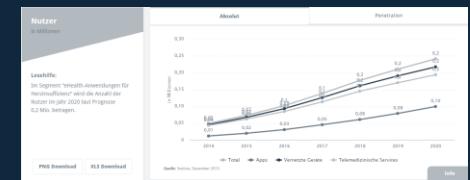
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