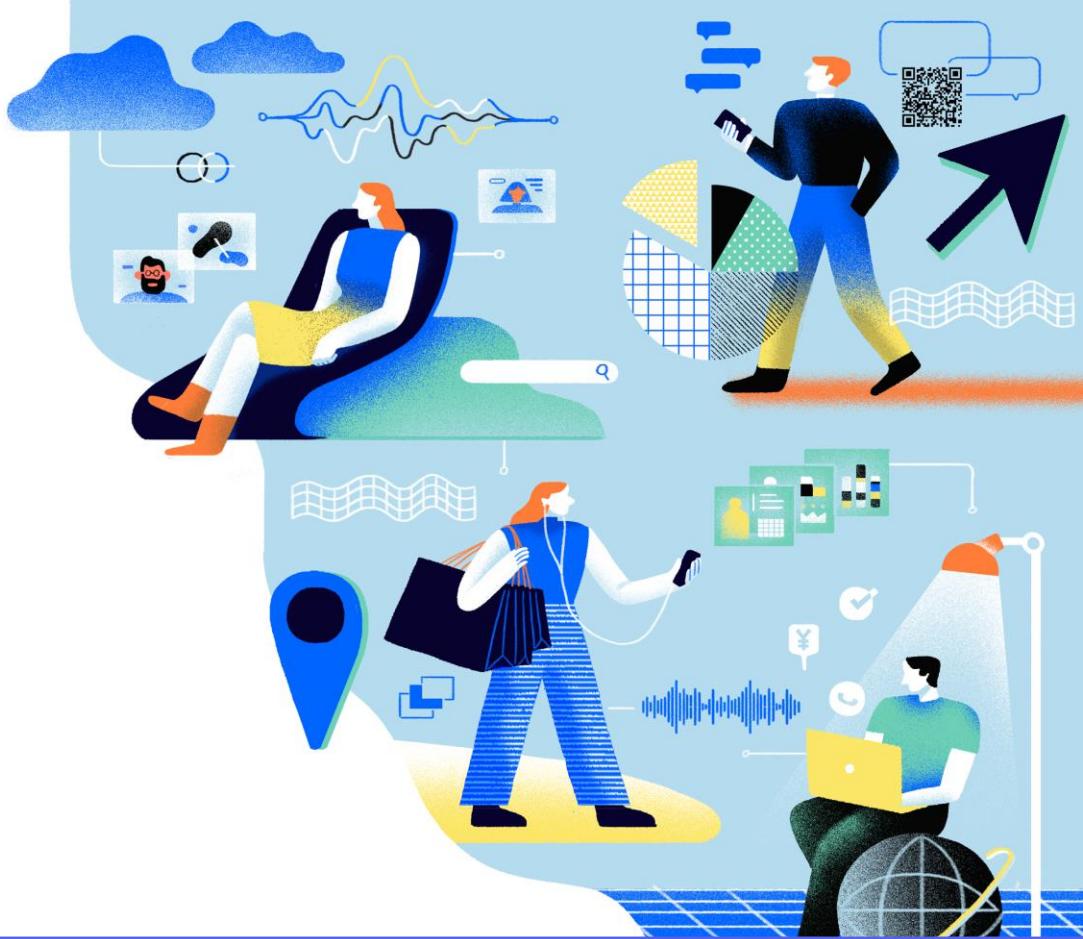


# China Internet Report 2019



[www.scmp.com/china-internet-report](http://www.scmp.com/china-internet-report)



South China Morning Post



abacus

EDITH  
YEUNG



**China has emerged on the world stage with a brace of global tech companies that is innovative and competitive. And increasingly, their successes are being studied and replicated in other markets. This report, informed by on-the-ground reporting by the South China Morning Post and Abacus, offers insights into China's tech trailblazers and the big important trends shaping the world's biggest internet community.**

*Special thanks to our contributors in alphabetical order:*

<b>CHEN Chi</b> CEO Xiaozhu Duanzu	p54	<b>Dada</b> Co-founder Pinduoduo	p27	<b>Eric XU</b> Managing Partner GGV	p27	<b>GONG Yu</b> CEO iQiyi	p38	<b>James PENG</b> CEO Pony.ai	p89	<b>JIANG Fan</b> President Tmall and Taobao	p27	<b>Johnson YEH</b> Head of Greater China and SEA Riot Games	p101		
<b>Dr. LEE Kai-Fu</b> CEO Sinovention Ventures	p69	<b>LI Kaizhu</b> Co-founder Helloworld	p54	<b>Miffy CHEN</b> General Manager Alibaba AI Labs	p83	<b>Phil CHEN</b> Chief Decentralized Officer HTC	p96	<b>TAN Min-liang</b> CEO Razer	p101	<b>Dr. XU Li</b> CEO SenseTime	p69	<b>XU Ziyang</b> CEO ZTE Corp	p64	<b>YANG Chaobin</b> President of 5G Product Line, Huawei	p64



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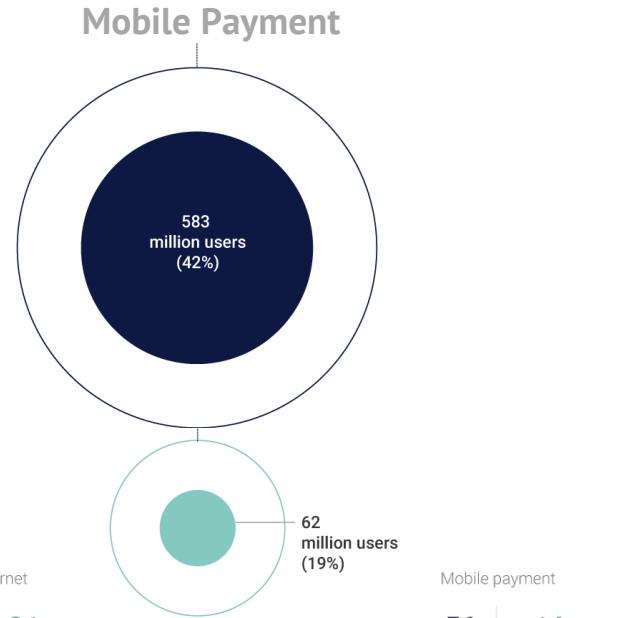
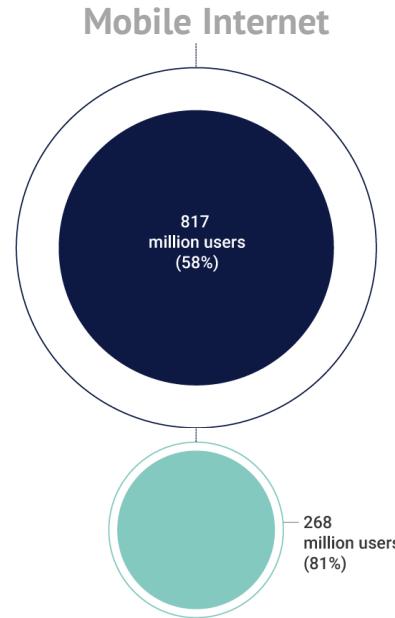
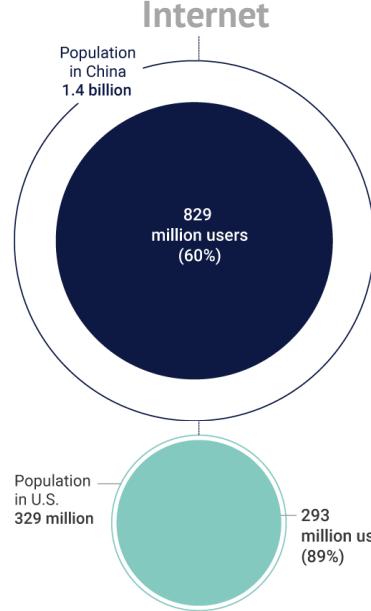
4

## DEEP-DIVE BY SECTOR

25

# At a Glance – China vs U.S. Internet

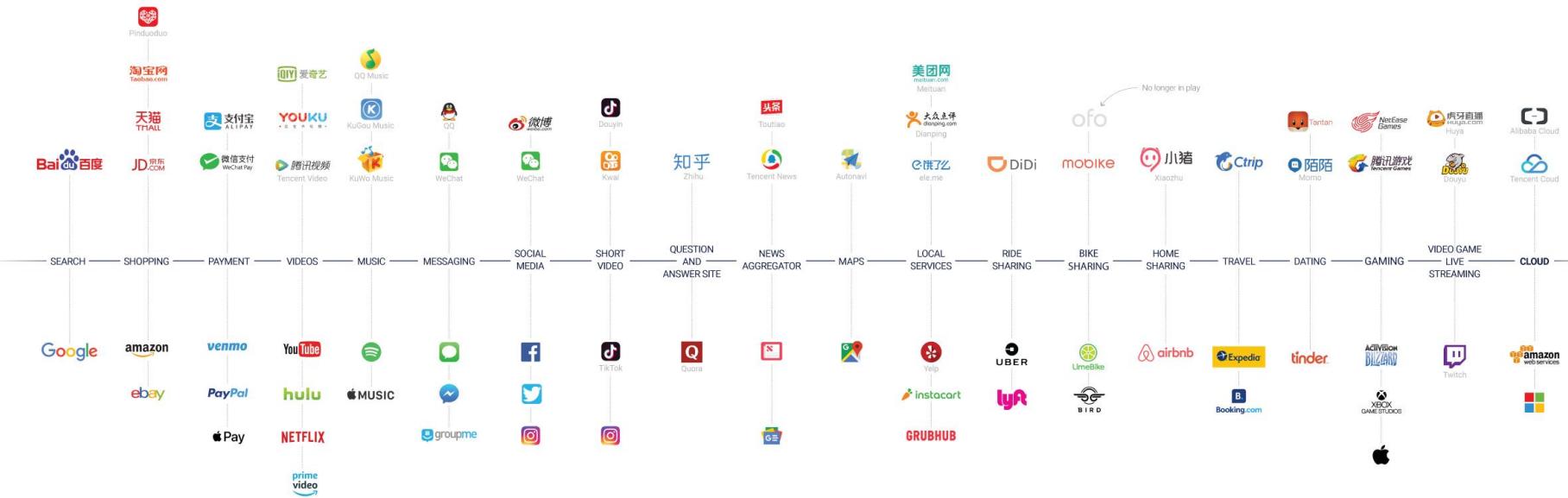
Although China's internet penetration rate is only 60%, its sheer scale means almost three times the number of internet users as the United States. In mobile payments, the gap is even wider: more people pay with their phones in China than there are people in the U.S.



# China vs U.S. – Top Players for Key Verticals

China and the U.S. operate in two separate technology ecosystems.

## IN CHINA



# A Year of Chinese Tech IPOs

56 Chinese TMT\* companies went public in 2018 with a total combined market capitalization of USD\$222 billion as of Jun 10, 2019.

## Number of Chinese TMT\* Company IPOs Over the Last 10 Years

■ US-listed ■ HK-listed



### Major 2018 IPOs

-  小米 produces and sells mobile phones, smartphone software, set-top boxes and related accessories worldwide. Market cap: US\$35 billion.
-  中国铁塔 provides telecommunication tower construction, tower maintenance, ancillary facilities management and other services. Market cap: US\$47 billion.

### Potential 2019 IPOs

-  ByteDance owns global short video hit app TikTok (500 million MAU worldwide) and news aggregator Toutiao. Its most recent financing round in Oct 2018 valued the company at US\$76 billion.
-  快手 is a short video app with 300 million MAU and is the primary competitor to TikTok. Latest market valuation: US\$25 billion.

Note: TMT = Technology, Media and Telecommunications

Source: 21Finance, company filings

# Top Chinese Internet Players (1 of 2)

	Company	CEO	Selected Investors	Listed on	Market Cap/ Valuation (US\$ bn)
1	Tencent Holdings	Pony MA	IDG Capital, Lippo Group, Naspers, PCCW	HKG: 700	418
2	Alibaba Group	Daniel ZHANG	DST Global, GGV Capital, Goldman Sachs, SoftBank, Temasek Holdings	NYSE: BABA	416
3	Ant Financial	Eric JING	Alibaba Group, NSSF, CDIB, CCB International	Private	150
4	Toutiao (Bytedance)	ZHANG Yiming	Sequoia Capital China, SIG Asia Investments, Sina Weibo, Softbank Group	Private	75
5	Didi Chuxing	CHENG Wei	Matrix Partners, Tiger Global Management, Softbank Corp.,	Private	56
6	Meituan-Dianping	WANG Xing	Alibaba Group, General Atlantic, Hillhouse Capital Group, Northern Light Venture Capital, Sequoia Capital China	HKG: 3690	45
7	JD.com	Richard LIU	DST Global, Google, Sequoia Capital China, Tiger Global Management, Walmart	NASDAQ: JD	40
8	Baidu	Robin LI	DFJ, Google, ePlanet Capital, Peninsula Capital, Integrity Partners	NASDAQ: BIDU	39
9	Lufax	Gregory D GIBB	CICC, COFCO, Arbor Ventures, BlackPine Private Equity	Private	39
10	NetEase	DING Lei	SoftBank Capital	NASDAQ: NTES	34

# Top Chinese Internet Players (2 of 2)

	Company	CEO	Selected Investors	Listed on	Market Cap/ Valuation (US\$ bn)
11	Xiaomi	LEI Jun	DST Global, Goldman Sachs, JP Morgan Chase & Co., Morgan Stanley, Temasek Holdings	 HKG: 1810	30
12	Pinduoduo	Colin HUANG	IDG Capital, Sequoia Capital, Tencent Holdings, Gaorong Capital, Lightspeed Capital	 NASDAQ: PDD	23
13	Tencent Music	PANG Kar Shun	Spotify	 NTSE: TME	23
14	WeBank	GU Min	Tencent Holdings	Private	21
15	Ctrip	Jane SUN	IDG Capital, SAIF Partners, Capital Today, SIIC Investment	 NASDAQ: CTRP	19
16	Kuaishou	SU Hua	Tencent Holdings	Private	18
17	Cainiao Logistics	Daniel ZHANG	GIC, Khazanah Nasional, Temasek Holdings	Private	15
18	JD Digits	CHEN Qiangsheng	JD, Sequoia Capital China, CICC, COFCO, China Taiping Insurance	Private	15
19	iQiyi	GONG Yu	Baidu, Xiaomi, Providence Equity Partners, Sequoia Capital	 NASDAQ: IQ	13
20	Bitmain Technologies	WANG Haichao	Coatue Management, Sequoia Capital China, IDG Capital	Private	12

Jan 2018 -  
Jun 2019

# Top Chinese Startup Exits (IPO) (Jan 2018 - Jun 2019)

	Company	CEO	Listed on	Date of IPO	Headquarter	Market Cap (US\$bn)
1	Meituan-Dianping	WANG Xing	HKG: 3690	20/9/2018	Beijing	45
2	China Tower	TONG JILU	HKG: 788	8/8/2018	Beijing	44
3	Xiaomi	LEI Jun	HKG: 1810	9/7/2018	Beijing	30
4	Pinduoduo	Colin HUANG	NASDAQ: PDD	26/7/2018	Shanghai	24
5	Tencent Music	PANG Kar Shun	NTSE: TME	12/12/2018	Shenzhen	23
6	iQiyi	GONG Yu	NASDAQ: IQ	29/3/2018	Beijing	13
7	Bilibili	CHEN Rui	NASDAQ: BILI	28/3/2018	Shanghai	5
8	Ping An Healthcare	WANG Tao	HKG: 1833	4/5/2018	Shanghai	5
9	Luckin Coffee	QIAN Zhiya	NASDAQ: LK	17/5/2019	Xiamen	4
10	Nio	William LI	NYSE: NIO	12/9/2018	Shanghai	3

# Most Active VC Firms in China in 2018

## Number of Investments in 2018



## BAT vs TMD

The Chinese tech giants known as BAT (Baidu, Alibaba, Tencent) have built ecosystems while challengers TMD (Toutiao\*, Meituan-Dianping, Didi) are strengthening their core businesses.

	Ecommerce	Content & Media	Social & Messaging	Mobility/Logistics	Travel	Fintech	Gaming	Autonomous Cars	Artificial Intelligence	Enterprise Services
Baidu	我的网  汽车								百度	
Alibaba										
Tencent										
ByteDance										
Meituan-Dianping										
Didi										

[www.scmp.com/china/internet-report](http://www.scmp.com/china/internet-report)

Note: Toutiao is the product of the Beijing-based company ByteDance

Source: SCMP analysis



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# Looking Back at 2018

We identified four overarching themes last year. Here's why they're still relevant today.

Still in  
2019?

## Recap of Last Year's Trends

1

### Chinese Internet Giants are Doing Everything

- Baidu, Alibaba and Tencent have been stepping up their investments over the past few years, with more of these investments in overseas companies.
- BAT invested in 252 companies in 2017; in 2018, that number rose to 280 with 42 of those being overseas investments.



2

### Chinese Internet Empowers Rural Population

- The number of internet users in rural China increased by 13 million to 222 million in 2018, increasing the penetration rate from 35% to 38%.
- Time spent online increased by 30% last year.



3

### Chinese Internet Companies Embrace 'Social+'

- Social+ refers to the model where a business is anchored by a social pillar that drives user engagement and growth.
- Tech giants, including Alipay and JD.com, are extending their Social+ plans, launching group-buy functions within their apps.



4

### Government is the Visible Hand

- Fintech, gaming, and content-driven internet companies continue to face tight restrictions by government authorities.
- The number of P2P online lenders has halved within a year to 1,027 in 1Q 2019.
- The Chinese government suspended licensing for new games for 9 months last year, causing the gaming industry to experience its slowest revenue growth in over a decade.
- In Jan 2018, the Cyberspace Administration of China scrubbed the web of more than 7 million items, deleting more than 9,300 smartphone apps to screen out information deemed inappropriate or harmful.
- President Xi Jinping urged China to go all in on scientific self-reliance and make breakthroughs in core technologies.





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# Four Top Trends for 2019

1



**China's 'Copycat' Tech Industry is Now Being Copied**

2



**China is Racing Ahead With 5G**

3



**China is Using AI on a Massive Scale**

4



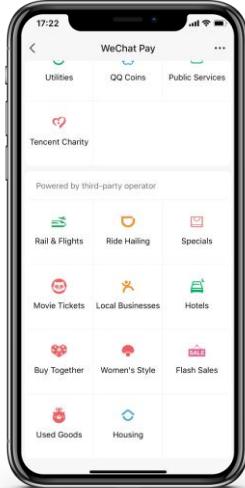
**Social Credit Is Becoming a Reality in China**

# China's 'Copycat' Tech Industry is Now Being Copied

Global technology companies are now replicating successful concepts from their Chinese counterparts, from the Super App to social+ ecommerce to short video.

WeChat

1bn+ MAU



Alipay

1bn+ MAU



Meituan

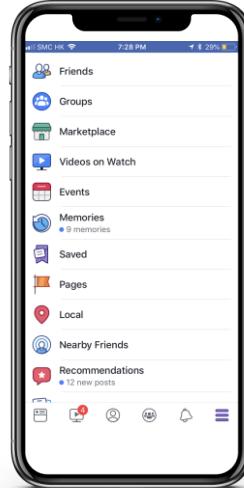
289mn MAU



## The Super App

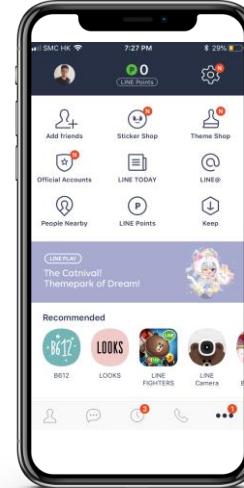
Facebook

1bn+ MAU



LINE

220mn MAU



Go-Jek

27mn MAU



China has pioneered the “Super App,” a one-stop shop for services from shopping to ride hailing to money transfers to flight bookings.

Facebook's standalone messaging app now has multiple features including chatbots, games and mobile payments.

LINE started as a messaging platform and now offers services, including a digital wallet, news streaming, video on demand and digital comic distribution.

Go-Jek started as a motorcycle ride-hailing service but has since expanded its offering to 18+ services, including food delivery, mobile payments and massage services.

# China's 'Copycat' Tech Industry Is Now Being Copied

## Social+ for Ecommerce

Taobao



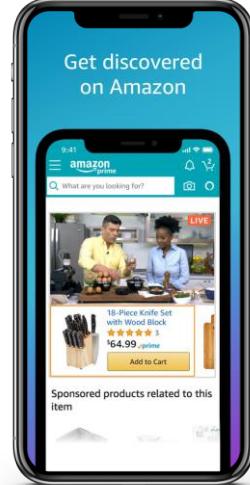
Pinduoduo



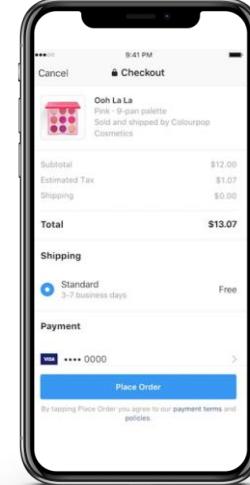
Mogu



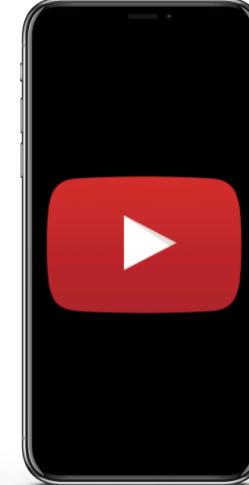
Amazon Live



Checkout with Instagram



YouTube Shopping



China's online shopping giants and start-ups have pioneered concepts such as group buying and live streaming.

Launched in February 2019, Amazon Live features **live-streamed video of hosts demonstrating products, which viewers can buy directly** from a carousel that displays under the video.

Launched in March 2019, Checkout with Instagram has enabled 130 million users to **buy items by tapping on product tags**, all without leaving the app.

Google plans to add new shopping features to YouTube. Later this year, YouTube will **give shopping recommendations, share affiliate fees, and enable brands to include shoppable ads**.

# China's 'Copycat' Tech Industry Is Now Being Copied

## Short Video

TikTok



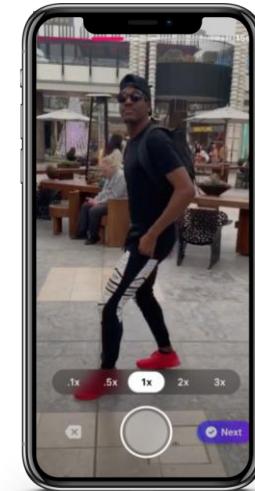
Kuaishou



Snapchat



Facebook's Lasso



TikTok, the short video app from Chinese company ByteDance, has taken the world by storm, becoming the most downloaded app on the iOS App Store for five consecutive quarters. While products like Vine pioneered this format back in 2012, Chinese companies have been the first to turn the short video concept into a success.

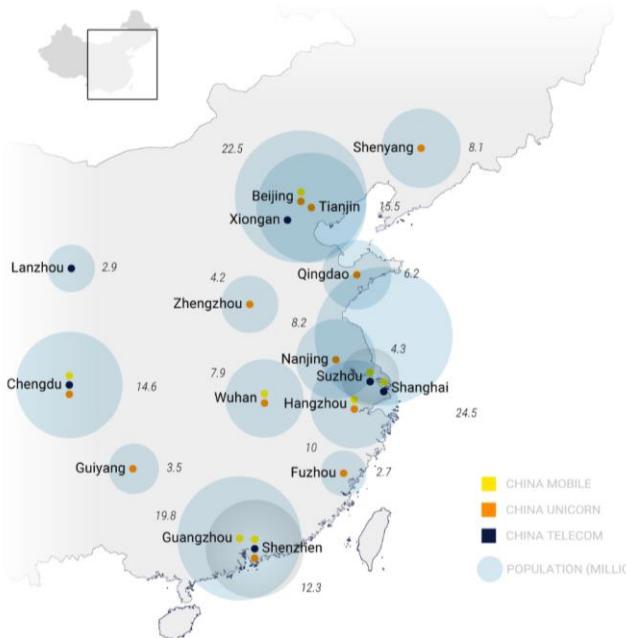
In February, Snapchat added TikTok to the list of companies that it considers to be competitors. Snapchat's "Lens Challenges", which let users lip sync to songs, seem to be inspired by TikTok.

In November 2018, Facebook launched Lasso, its short video app designed to compete with TikTok.

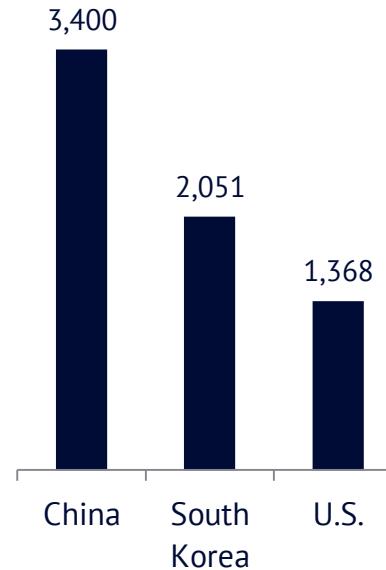
# China is Racing Ahead With 5G

China regards next-generation 5G networks - which offer faster data rates, reduced latency, energy savings, cost reductions, higher system capacity and massive device connectivity - as a chance to get out in front for the first time.

**China's three telecoms operators are piloting 5G in more than a dozen cities with a total population of 167 million**

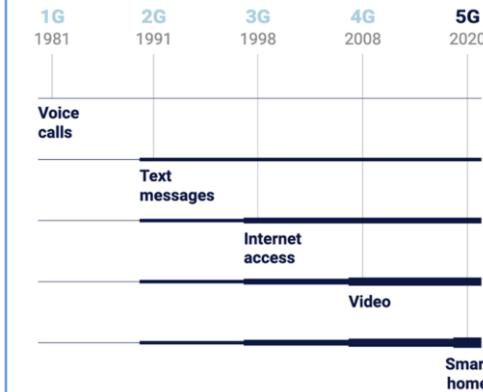


**China also leads the world in 5G patents**



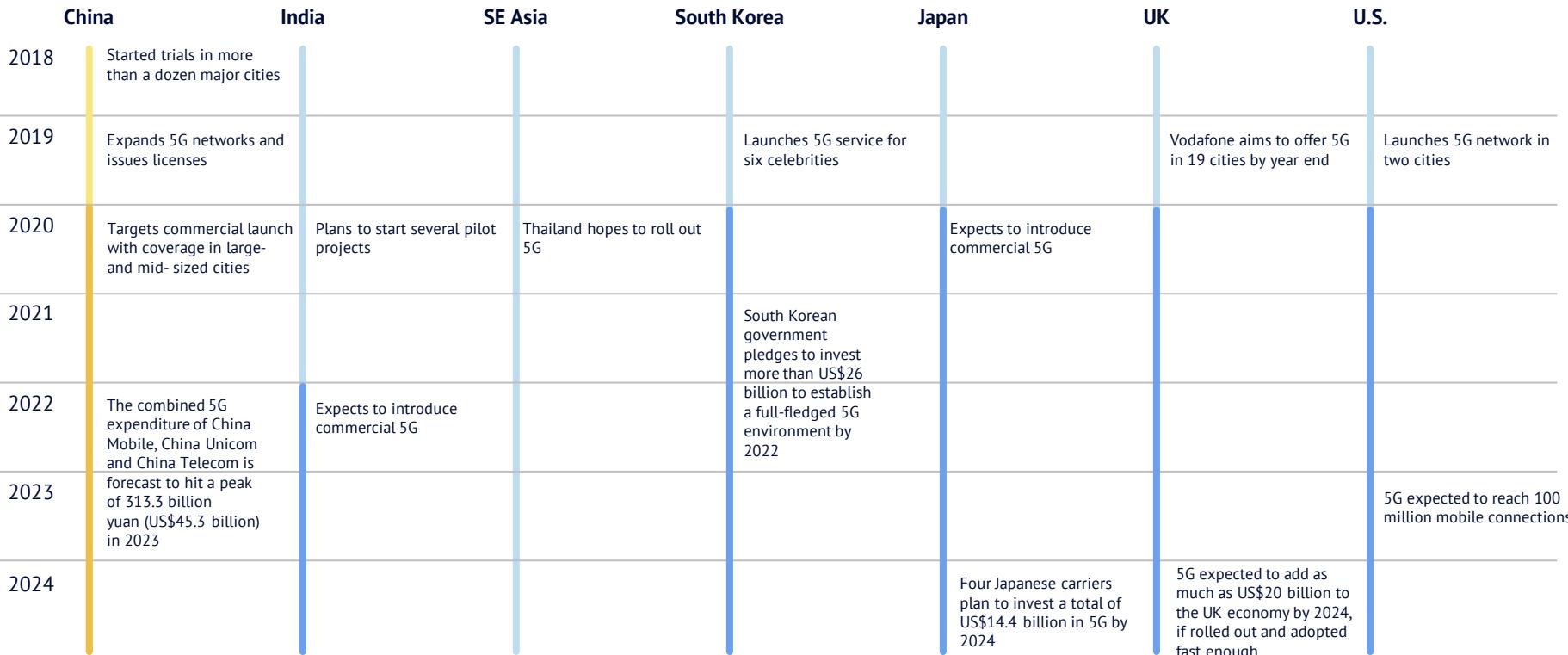
## What is 5G?

The fifth generation of mobile technology means more than just faster data speeds and greater network capacity. It also provides a foundation for connecting an unlimited number of machines to one another for day-to-day communication. A 5G network will support: a million connected devices per square kilometre; transmitting a package of data with a delay of just 1 millisecond and peak data download speeds of up to 20 gigabits per second.



# China is Racing Ahead With 5G

China is best positioned to win the global race to roll out 5G infrastructure, according to several research firms.



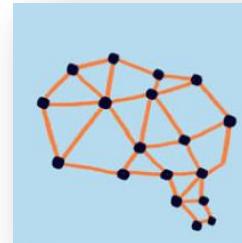
# China is Using AI on a Massive Scale

China is rolling out AI in many areas, including access control, customized recommendations, surveillance and smart city solutions.



## Access control:

Facial recognition and machine learning technology grant users faster and more reliable access to certain places, resources and information.



## Customized recommendations:

AI-driven recommendation engines offer users products and content tailored to their preferences.

## Paying subway fare:

At the Futian station in Shenzhen, instead of presenting a ticket or scanning a QR code on their smartphones, commuters can scan their faces on a tablet-sized screen mounted on the entrance gate and have the fare automatically deducted from their linked accounts.

## Checking into a hotel:

Alibaba's FlyZoo Hotel, opened in December 2018, features AI robots that look after room service and laundry and let you into your room via facial recognition.

## Shopping:

JD.com's 3D Fitting Room gives shoppers the ability to try on clothes through a customized avatar with similar hair, face and body dimensions.

## Browsing content:

Toutiao recommends personalized news articles to people with different interests based on its AI-driven algorithms.

# China is Using AI on a Massive Scale

China is rolling out AI in many areas, including access control, customized recommendations, surveillance and smart city solutions.



## Surveillance:

Computer vision, facial recognition and augmented reality technologies enable authorities to monitor individuals.

### Catching criminals:

Beijing-based DeepGlint Technology helped police authorities track down a criminal who had been evading justice for 20 years. The company specialises in the field of computer vision; its 3D image analysis and pattern recognition technology has led to the arrest of 100 suspects.

### Enforcing traffic laws:

Shenzhen-based Intellifusion uses proprietary high-definition cameras and AI technology to catch traffic rules violators, whether they are driving or on foot. In the 10 months after the system's debut, as many as 13,930 jaywalkers were displayed on the LED screen at one busy intersection in Futian district.

### Identifying citizens:

Beijing-based augmented reality company Xloong has developed smart glasses, which let police access real-time facial, identification card and vehicle plate information that are linked with a national database.

### Controlling crowds:

China's real-time crowd monitoring systems track the movement of people and vehicles and translate the size of a crowd into a thermal image in real-time, allowing traffic controllers to direct officers on foot.

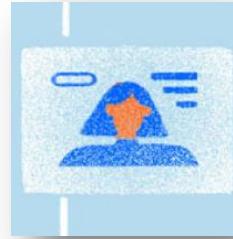
# China is Using AI on a Massive Scale

China is rolling out AI in many areas, including access control, customized recommendations, surveillance and smart city solutions.



## Smart city:

AI technologies enhance the quality and performance of urban services.



## Other applications in early phases of adoption

### Driving to work:

AI-enabled cameras, installed near traffic lights, can adjust traffic lights in accordance with queuing vehicles and weather conditions. Certain road sections in Shenzhen have seen traffic flow improve by 8%, with the average vehicle speed surging by 15%.

### Going to class:

A university in Hangzhou has rolled out a class attendance system that enables students to sign in with verification codes via their mobile phones and issues auto-reminders to those who fail to show up on time, along with a warning about the risks of skipping class.

### Seeing a doctor:

Ping An Good Doctor's telephone booth-sized, AI-powered clinics enable users to consult a virtual "AI" doctor that collects health-related data through text and voice interactions.

# Social Credit Is Becoming a Reality in China

China is creating a system, first announced in 2014, to rank all of its citizens based on their “social credit” by 2020.

China's social credit system relies on a series of rewards and punishments meant to encourage people and businesses to abide by rules and to promote integrity and trustworthiness in society at large. In reality, there is no central scoring system but a patchwork of different schemes and apps with differing criteria across provinces, cities and villages. Expect to hear more about social credit in the coming year as the deadline approaches and different local governments scramble to show that they are meeting their targets.



## Case Study 1: Low-tech scoring

In the sleepy city of Rongcheng in Shandong, the “scores” are compiled by hand and points are given for “positive” behavior such as helping to install a basketball hoop and other such community work.



## Case Study 2: Trust score for youths

China Youth Credit Management (CY Credit) wants to build a big-data credit system that covers all Chinese people aged between 18 and 45, an estimated 460 million people.



## Case Study 3: Beware, deadbeats in vicinity

“Discredited” database maintained by China’s Supreme Court has 13 million individuals judged to have lost their trustworthiness. These people are banned from taking high-speed rail and flights.

## Social Credit Is Becoming a Reality in China

Millions of individuals and businesses have been labeled as untrustworthy on a growing blacklist compiled by China's courts, restricting them from a number of activities, including accessing financial markets or travelling by air and high-speed rail.



# 13.5mn

The number of Chinese individuals classified as untrustworthy as of the end of March 2019, according to China's National Development and Reform Commission



# 20.5mn

The number of plane ticket sales that were restricted as punishment for failing to repay debts or conducting other “untrustworthy” behavior



# 5.7mn

The number of high-speed train ticket sales that were restricted as punishment for failing to repay debts or conducting other “untrustworthy” behavior



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Sharing Economy	54
5G	64
Artificial Intelligence	69
Smartphones	77
Smart Devices	83
Autonomous Cars	89
Blockchain	96
Gaming	101

# Ecommerce



*“China is experiencing an ongoing consumption upgrade as people look for different ways to enhance their lifestyle...we are now seeing more and more consumers in China’s less-developed regions becoming sophisticated shoppers. They are demanding the same high-quality products as those in top-tier cities.”*

---

JIANG Fan, President of Tmall and Taobao



*“The year 2019 will witness a digital revolution whereby technology unleashes the power of ecommerce to benefit the livelihood of China’s rural population. China’s agricultural industry is still waiting to be tapped by e-commerce.”*

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Dada, Co-founder, Pinduoduo



*“New business models in ecommerce will further explore the linkages between the online world and the real world on (information) sharing and value chain optimization.”*

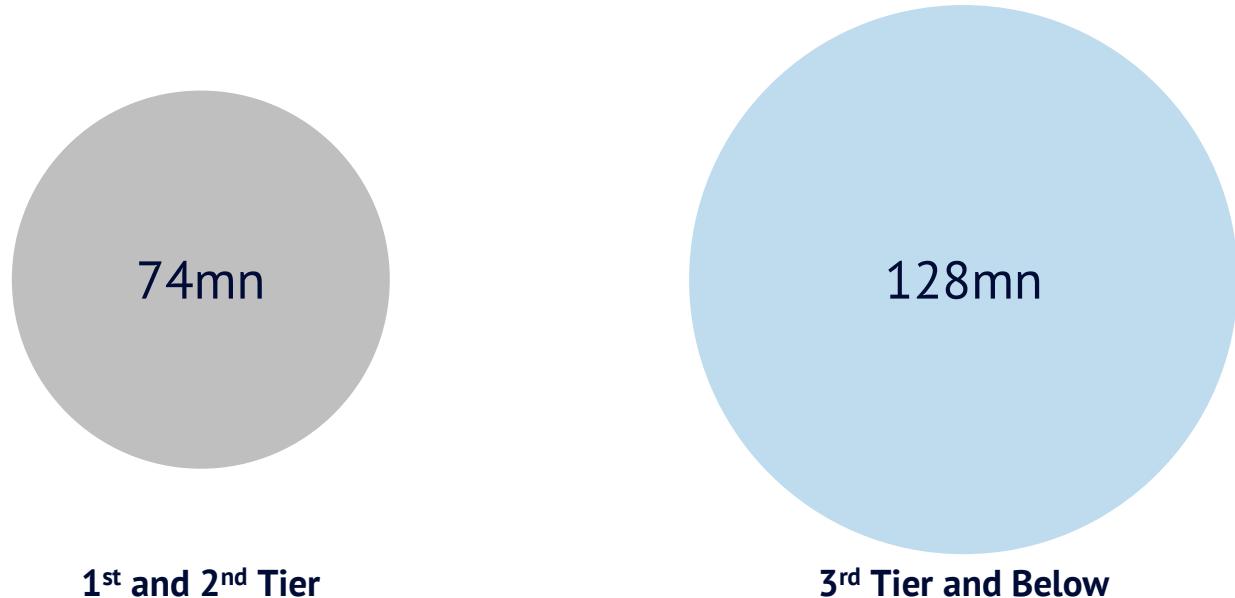
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Eric XU, Managing Partner, GGV

# Lower Tier Cities are Driving Ecommerce Consumption and Growth (1 of 2)

Lesser developed cities still have huge untapped potential for ecommerce. There are 128mn internet users in third tier or below cities who have not yet bought anything online (vs 74mn in second tier or above cities).

Potential Ecommerce Users by City Tiers

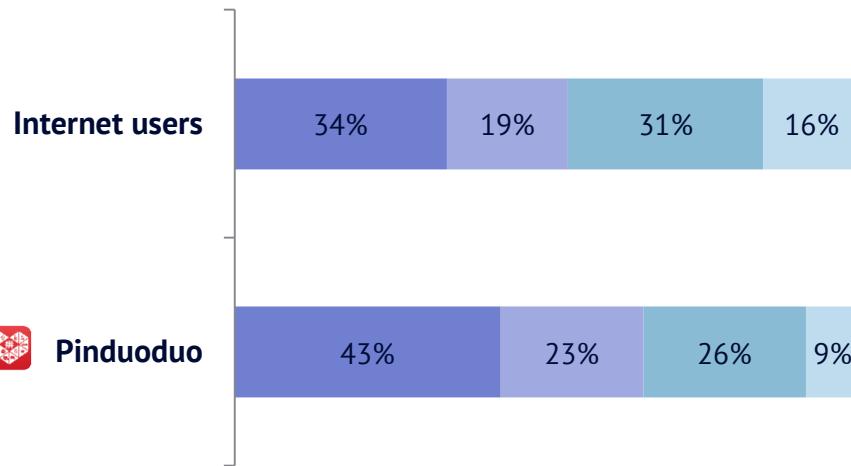


# Lower Tier Cities are Driving Ecommerce Consumption and Growth (2 of 2)

Pinduoduo's rise is being driven by users from lower-tier cities. And the ecommerce market leaders are also targeting lower-tier cities.

User Percentage by City Tiers

■ Tier 4 ■ Tier 3 ■ Tier 2 ■ Tier 1



The big ecommerce players are also eyeing lower-tier cities as opportunity markets



- JD shifted focus to 3<sup>rd</sup> and lower tier cities in 2019.
- It also launched JD group buy to attract lower tier city users.



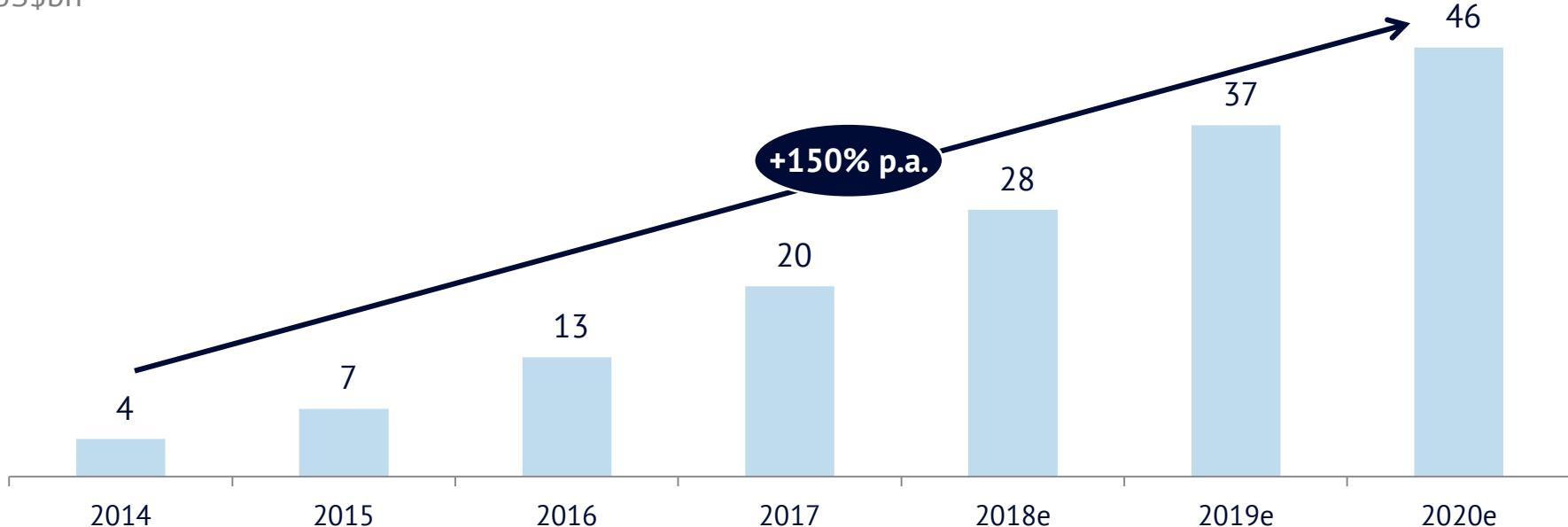
- More than 70% of the increase in annual active users in 3Q18 came from lower-tier cities.

# Fresh Food Ecommerce is Still at an Early Stage, but More Players are Getting in (1 of 3)

Fresh grocery ecommerce has an estimated market size of US\$28bn in China and has become an important battlefield.

Fresh Food Ecommerce Market Size

US\$bn



# Fresh Food Ecommerce is Still at an Early Stage, but More Players are Getting in (2 of 3)

Most major ecommerce players are expanding into the business of selling fresh produce to consumers.

## Key B2C Fresh Grocery Ecommerce Players

Company	Affiliation with BAT/TMD	Key stats	Estimated delivery time
 Dmall	Strategic partner of Tencent	10mn MAU (Apr 19)	 1hr
 Missfresh	Invested in by Tencent	3.7mn MAU (Apr 19)	 1hr
 Jingdong Daojia	Owned by JD	3.3mn MAU (Apr 19)	 20min-2hr
 Hema Fresh	Owned by Alibaba	2.5mn MAU (Apr 19)	 30min
 Ding Dong	-	0.8mn MAU	 29min
 Meituan Maicai	Owned by Meituan-Dianping	Newly launched in Jan and has 10 service points so far	 30min

# Fresh Food Ecommerce is Still at an Early Stage, but More Players are Getting in (3 of 3)

Although not as crowded as the B2C market, more players are trying to win the wholesale market and become China's Sysco.

## Key B2B Fresh Grocery Ecommerce Players

Company	Affiliation with BAT/TMD	Business model	Key Stats
 Meicai	-	Fresh food B2B	Covers 200 cities with 2.7mn merchant clients
 Kuailv	Owned by Meituan-Dianping	Fresh food B2B + SaaS	Covers 38 cities with 450k merchant clients
 Songxiaocai	-	Vegetable B2B	Covers 45 cities with 20k merchant clients

# From Search-based Shopping to Recommendation-based Shopping (1 of 3)

Taobao's recommendation-feed traffic surpassed its search traffic in Aug 2018.

Taobao App Daily Product Page Views



# From Search-based Shopping to Recommendation-based Shopping (2 of 3)

Influencers are more effective at driving purchases and are becoming the most popular advertising method. KOL, also known as an influencer, is the most preferred marketing format by advertisers.

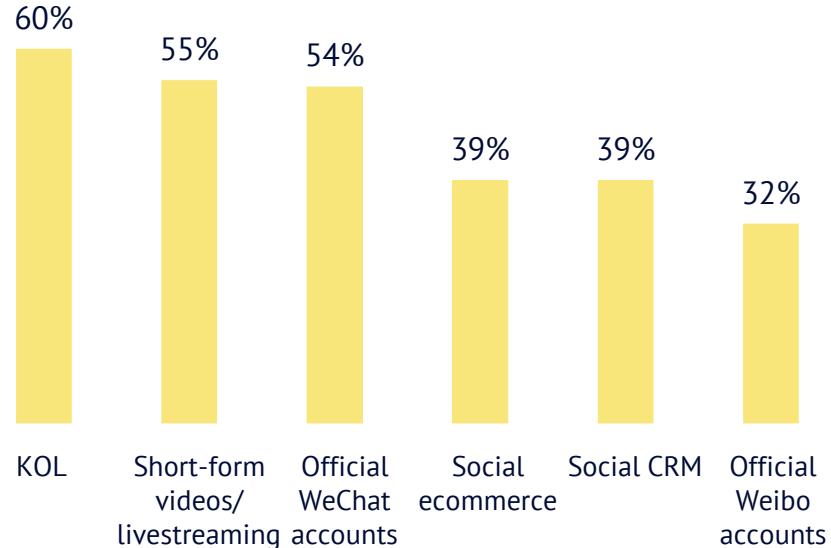


During Kuaishou's ecommerce festival, the top influencer who has over 40 million followers on the platform sold US\$7.2 million worth of goods within 3 hours.



A beauty vlogger, who has 24 million followers on Douyin and 4 million followers on Taobao livestream, holds a record of selling 15,000 lipsticks within 5 minutes.

Social marketing format preferences in 2019



# From Search-based Shopping to Recommendation-based Shopping (3 of 3)

User-generated content about reviews and tips are influencing other users' purchasing decisions.



Merchants on Taobao now showcase photos taken by buyers modeling their clothes.



Users share recommendations with embedded purchase links, like this example of a Xiaohongshu user.



# Alibaba Local Life Service Company is the Most Funded Chinese Ecommerce Startup

As of June 2019

www.scmp.com/china-internet-report

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
Alibaba Local Life Service Company (Ele.me + Koubei)	4,000	Alibaba Group, Ant Financial, Primavera Capital Group, SoftBank Investment Advisers
Chehaoduo	3,370	DST Global, Matrix Partners China, Sequoia Capital, Sequoia Capital China, Tencent Holdings
JD Logistics	2,500	China Merchants Group, Hillhouse Capital Group, K11 Investment, Sequoia Capital China, Tencent Holdings
MissFresh E-Commerce	1,360	China Growth Capital, Goldman Sachs, Sofina, Tencent Holdings, Tiger Global Management
JD Health	1,000	Baring Private Equity Asia, CICC, CPE, JD.com
Wanda E-Commerce	975	Baidu, Centec Networks, Tencent Holdings, WANDA Group, Xude Rendao
Dada-JD Daojia	950	DST Global, JD.com, Sequoia Capital, Sequoia Capital China, Walmart
Beijing Weiying Technology	802	GGV Capital, Gopher Asset Management, iDreamsky Technology, Tencent Holdings, WANDA Group
Meicai	793	CMC Capital Group, Hillhouse Capital Group, Shunwei Capital, Tiger Global Management, ZhenFund
Xiaohongshu	418	Alibaba Group, GGV Capital, GSR Ventures, Tencent Holdings, ZhenFund

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.

Source: Crunchbase



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Blockchain	96
Gaming	101

# Content and Media



*“In 2019, industry development will still revolve around innovations in business models, technology and original content. AI technology is playing an increasingly important role in the entertainment industry. It not only enables our platform to be more technologically-advanced, but also helps us better understand consumers.”*

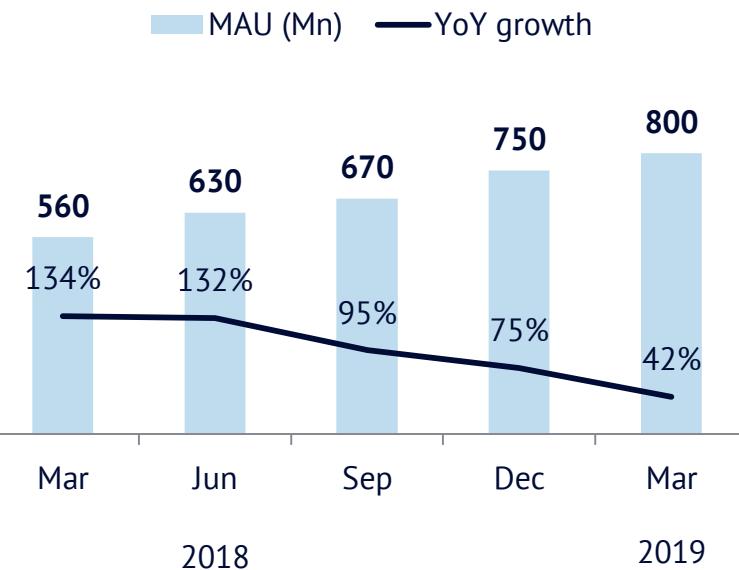
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GONG Yu, CEO, iQiyi

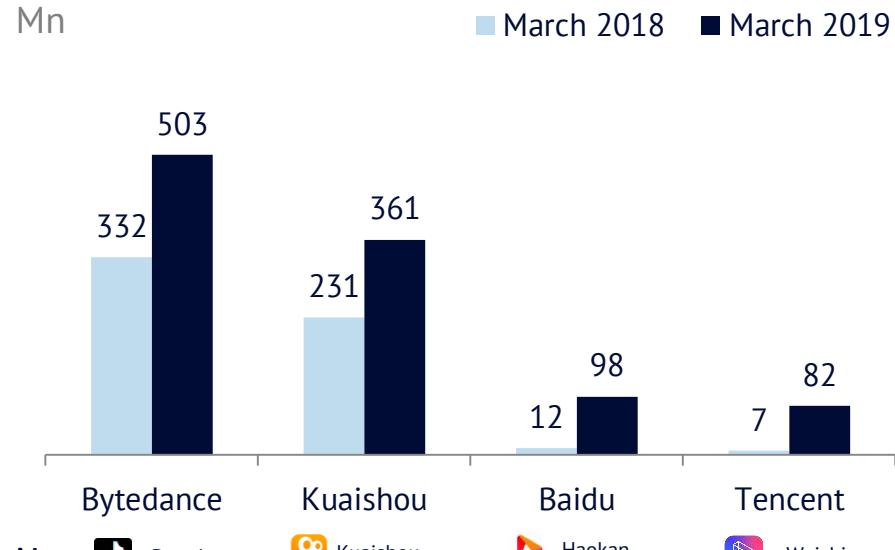
# 800 Million Chinese Consumers Regularly Watch Short Videos

Short-video market's growth rate is expected to slow down after growing 42% in 2018.

## Short-Video Users



## Unique Short-Video MAU of Key Companies



Short video apps for each company

- Douyin
- Huoshan
- Xigua

- Kuaishou
- Haokan
- Quanmin

- Weishi
- Yoo

# Chinese Consumers are Willing to Pay for Online Entertainment (1 of 2)

Chinese consumers have become more sophisticated and willing to pay for content, such as long-form videos and music.

Online Video Services Revenue

US\$bn



Number of Paid Users by Video Player

	Paid Users (Mn)	Paying Users / Mobile Internet Pop.
Tencent <sup>1</sup>	89	10%
iQiyi <sup>1</sup>	86	10%
Netflix (US) <sup>1</sup>	61	20%

(1) Paid users as of Dec 2018

Source: iResearch, Company filings

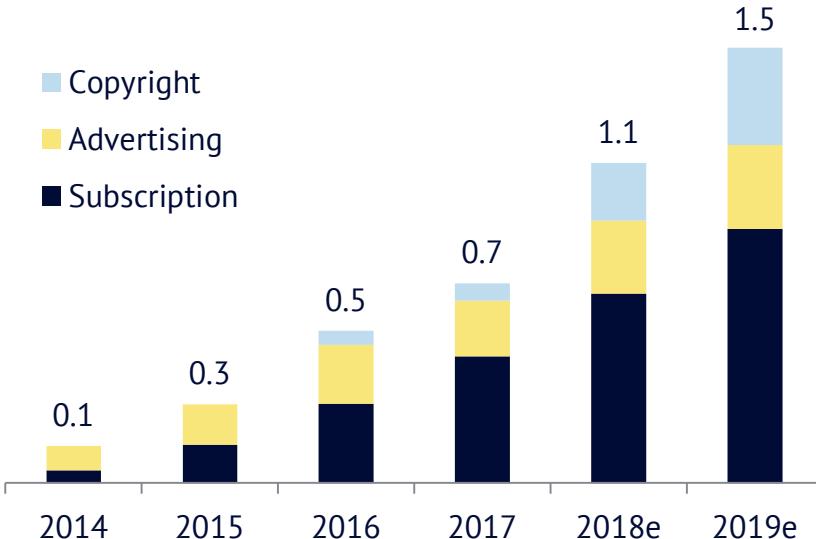
# Chinese Consumers are Willing to Pay for Online Entertainment (2 of 2)

Growth is expected to continue despite the slowing macro environment as online entertainment provides low-cost alternatives.

**Online Music Services Revenue**

US\$bn

- Copyright
- Advertising
- Subscription



**Number of Paid Users by Music Player**

	Paid Users (Mn)	Paying Users / Mobile Internet Pop.
Tencent Music apps <sup>1</sup>	27	3%
Apple Music (US) <sup>2</sup>	28	10%
Spotify (US) <sup>2</sup>	26	10%

Tencent Music apps<sup>1</sup>

27

3%

Apple Music (US)<sup>2</sup>

28

10%

Spotify (US)<sup>2</sup>

26

10%

(1) Across all Tencent apps (KuGou, QQ, KuWo) as of Dec 2018 (2) US paying users as of Feb 2019

Source: iResearch, Company filings

# Online Video: Growth Has Reached a Plateau

iQiyi and Tencent are the largest players after market consolidation, followed by Youku. Competition remains intense.

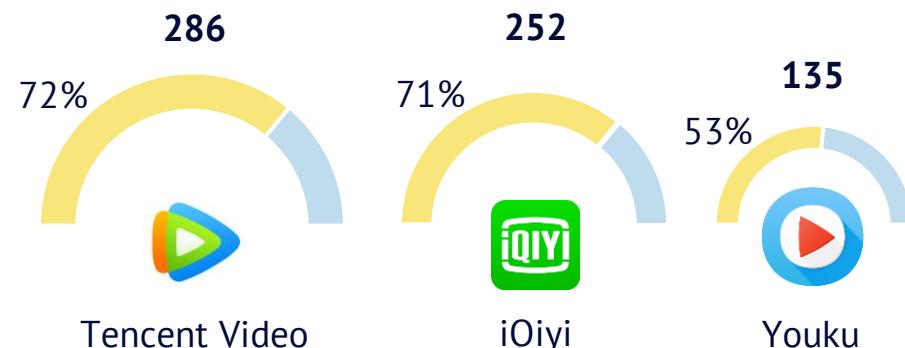
## Mobile Video MAU and Growth

Bn (YoY growth %)



## MAU and Proportion of Paid Users

Mn | Exclusive paying users %<sup>1</sup>



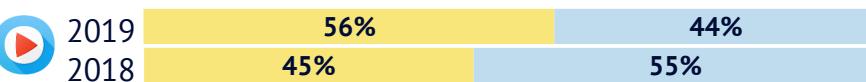
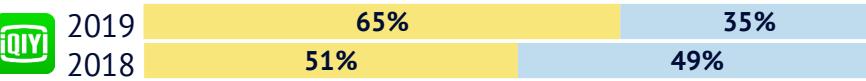
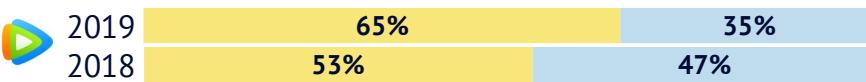
(1) Exclusive paying users means the user is a paying member of only 1 of the 3 video platforms

# Online Video: Competition Shifts to Original Content

All three major video platforms, amid heavy competition, have increased investment in original content.

## Percentage of Original vs Acquired Content

Original content | Acquired content



## Most Googled Shows in 2018

1 Yanxi Palace



2 Altered Carbon

3 ບຸພເພສັນໜີວາສ  
("Love Destiny")

4 ມູຕູ ພົຕລູ  
("Motu Patlu")

5 Roseanne

iQiyi's The Story of Yanxi Palace set a single-day viewer record in China on August 12 with 530 million people tuning in, and garnered over 15 billion views by its finale on August 27. iQiyi's subscribing members reached 80 million during the period vs 43 million a year ago.

# ByteDance is the Most Funded Chinese Content & Media Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
ByteDance	4,300	Goldman Sachs, Kohlberg Kravis Roberts, Morgan Stanley, SoftBank, TCV
Focus Media	2,242	3i Group, Alibaba Group, CDH Investment
CMC Capital Group	1,510	Alibaba Group, CMB International Capital Corporation, Tencent Holdings, Vanke
Le Sports	1,360	Fortune Link, HNA Group, Prometheus Capital, WANDA Group, YF Capital (Yunfeng Capital)
Kuaishou Technolgy	1,350	Tencent Holdings
Youku	1,340	Alibaba Group, Chengwei Capital, Maverick Ventures, Sutter Hill Ventures, YF Capital (Yunfeng Capital)
Douyu TV	1,130	CMB International Capital Corporation, Nanshan Capital, Phoenix Capital, Sequoia Capital China, Tencent Holdings
Miaopai	775	Sequoia Capital China, Shanghai Media Group, Sina, Weibo, YG Entertainment
NetEase Cloud Music	709	Baidu, Boyu Capital, CICC, General Atlantic, Shanghai Media Group
PPTV	707	BlueRun Ventures, DFJ, SAIF Partners, SoftBank Capital, Suning Holdings Group

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.

Source: Crunchbase



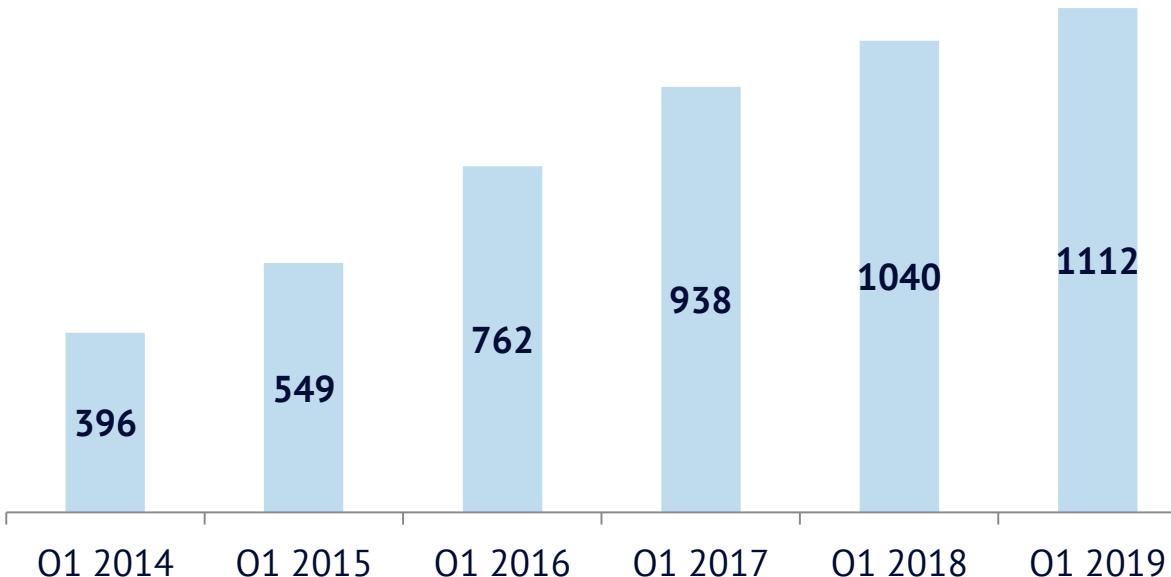
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# Tencent's WeChat has Managed so far to Fend off Challengers to its Dominance in Messaging (1 of 2)

Wechat and Weixin Combined MAU

Mn



- The instant messaging industry in China is dominated by Tencent's two platforms, Wechat and QQ, which have daily active users of 1.1 billion and 700 million respectively.
- There are almost no opportunities for the development of latecomers. None of them have managed to threaten Tencent's dominance yet.

# Tencent's WeChat has Managed so far to Fend off Challengers to its Dominance in Messaging (1 of 2)

App	Company	Product Differentiation	Current Status
 Duoshan	TikTok	Video focused	Still operating
 Matong MT	Ringle AI	Anonymous social	App pivoted into content ecommerce
 Liaotianbao	Kuairu Technology	Users can earn money spending time on the app	Laid off majority of employees
 Feiliao (Flipchat)	TikTok	Hybrid of an instant messenger plus interest-based forums	Launched on May 21st

- Four new social apps were launched in 2019.
- Three of them (Duoshan, Matong and Liaotianbao) were launched on the same day, Jan 15.
- Only two players remain operating. Matong has pivoted away from messaging while Liaotianbao has laid off the majority of its employees.

# Mini-Programs are a Proven Model (1 of 2)

Major players, including Tencent, Baidu, Alipay and Toutiao, have all launched mini-programs to help merchants acquire users and improve the user experience.



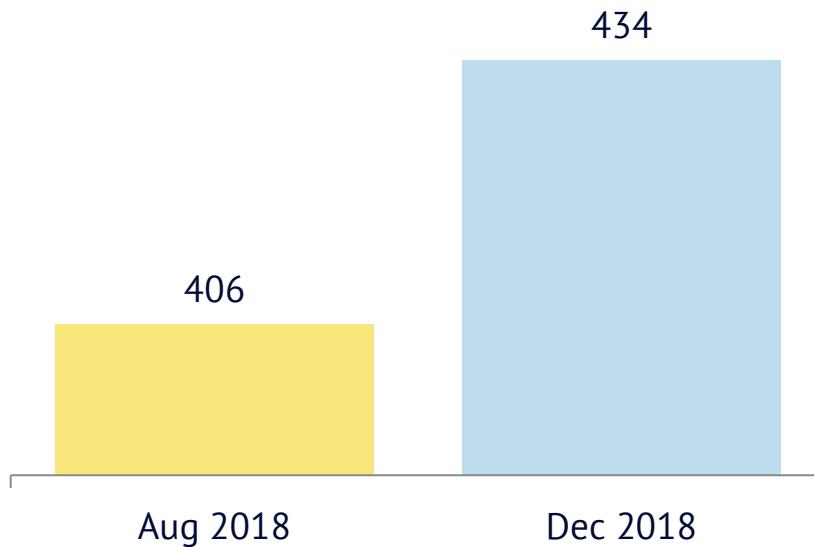
## Key Figures for BAT Mini-Programs

Tencent mini-program	DAU: 200mn (Nov 18)
Alipay mini-program	DAU: 170mn (Jan 19)
Baidu mini-program	MAU: 200mn (May 19)

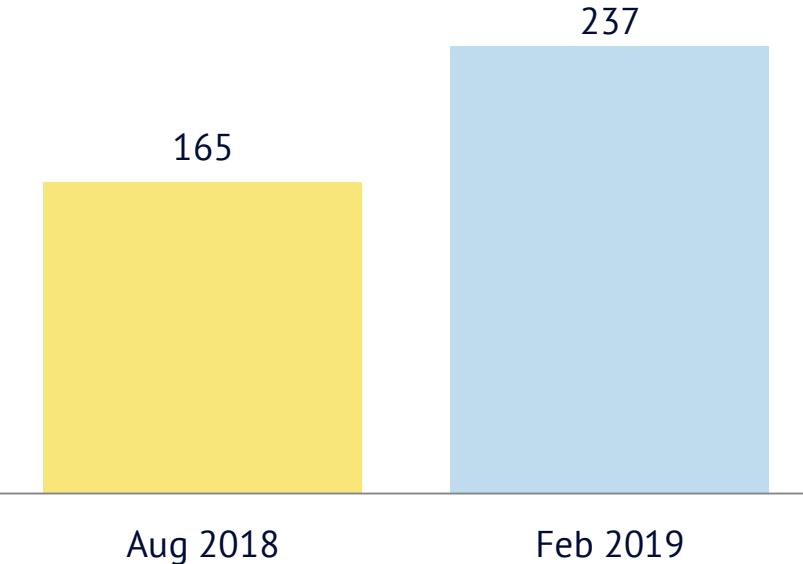
# Mini-Programs are a Proven Model (2 of 2)

Tencent has successfully influenced users and merchants to adopt mini-programs since its launch in 2017.

Number of Apps With >5mn MAU



Number of Mini-Programs on WeChat With >5mn MAU



# Content Censorship, User Privacy and Moderating are the “New Norm” (1 of 2)

Similar to Facebook, internet companies in China, such as Weibo, Tencent, Netease, Sina and Kuaishou, employ thousands of content moderators to monitor and scrub their platforms of “undesirable” content. Failure to comply risks immediate punishment, ranging from closure to removal from the app store.

## Look inside a live-streaming company's content moderation centre

Inke has grown quickly amid China's live-streaming frenzy that started in 2016, to become one of the top live-streaming apps in the country with some 25 million monthly active users. Inke staffs 1,200 people who watch all streams on the platform to censor irregular behavior, pornography and politically sensitive content.



← Click to view full video



# Content Censorship, User Privacy and Moderating are the “New Norm” (2 of 2)

China's internet regulator, the Cyberspace Administration of China, has launched successive waves of “clean-up” campaigns to remove low-brow content and tighten regulation on privacy policies.

**Apr 2018**, Weibo and Tencent both volunteered to begin cleaning up lowbrow video content

**Jan 2019**, China's cybersecurity police announced a 6-month campaign targeting websites and web applications that spread “negative information” on the internet

**Feb 2019**, WeChat said it has closed thousands of official accounts as part of its ongoing effort to clean up content

**Nov 2018**, China's cyber authority scrubbed 9,800 social media accounts that were deemed to have posted sensational, vulgar or politically harmful content

**Jan 2019**, China's cyberspace authority launched a year-long joint clean-up campaign, aiming to protect the security of personal information and the interests of China's internet users.

Apps that have “big user bases and close connection to people's everyday lives” will also have their privacy policies and handling of user information evaluated



# Zhihu is the Most Funded Chinese Social & Messaging Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
Zhihu	455	Goldman Sachs, Qiming Venture Partners, SAIF Partners, Sogou, Tencent Holdings
Hupu	338	CICC, Greenwoods Asset Management, Haitong Kaiyuan Investment, Quansheng Investment
Maimai	300	DCM Ventures, DST Global, IDG Capital, Morningside Venture Capital
Baihe	253	Dahu Aquaculture, GSR Ventures, Mayfield Fund, New Enterprise Associates, Zero2IPO Capital
DXY	182	DCM Ventures, Legend Capital, Shunwei Capital, Tencent Holdings
Getui	166	China Minsheng Bank, Haitong Securities, SAIF Partners, WI Harper Group
Zuiyou	160	CMC Capital Group, GGV Capital, Lightspeed China Partners, Qiming Venture Partners, Xiaomi
Blued	132	CDH Investments, Crystal Stream Capital, DCM Ventures, Shunwei Capital, Ventech China
Kaixin001	124	Northern Light Venture Capital, Qiming Venture Partners, Tencent Industry Win-Win Fund
36Kr	108	Ant Financial, China Merchants Capital, e.ventures, Infinity Ventures, Matrix Partners China



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# Sharing Economy



*“China’s sharing economy had gone through an important ‘growth education’ last year with the burst of an industry-wide bubble—the cash-burning investment to fight for market share in China led to the low quality services in the sector. After the dying down of the turmoil, a more mature sharing economy is set to get back on track to sustainable development in 2019.”*

---

CHEN Chi, CEO, Xiaozhu Duanzu



*“In outsiders’ eyes, bike sharing may still be in the stage of cash burning, but in fact the industry is already moving in the direction of sustainable development. Enterprises are spending more on refining operations and they no longer engage in irrational subsidy wars. This year, top-tier companies are expected to break even and even turn a profit while maintaining growth.”*

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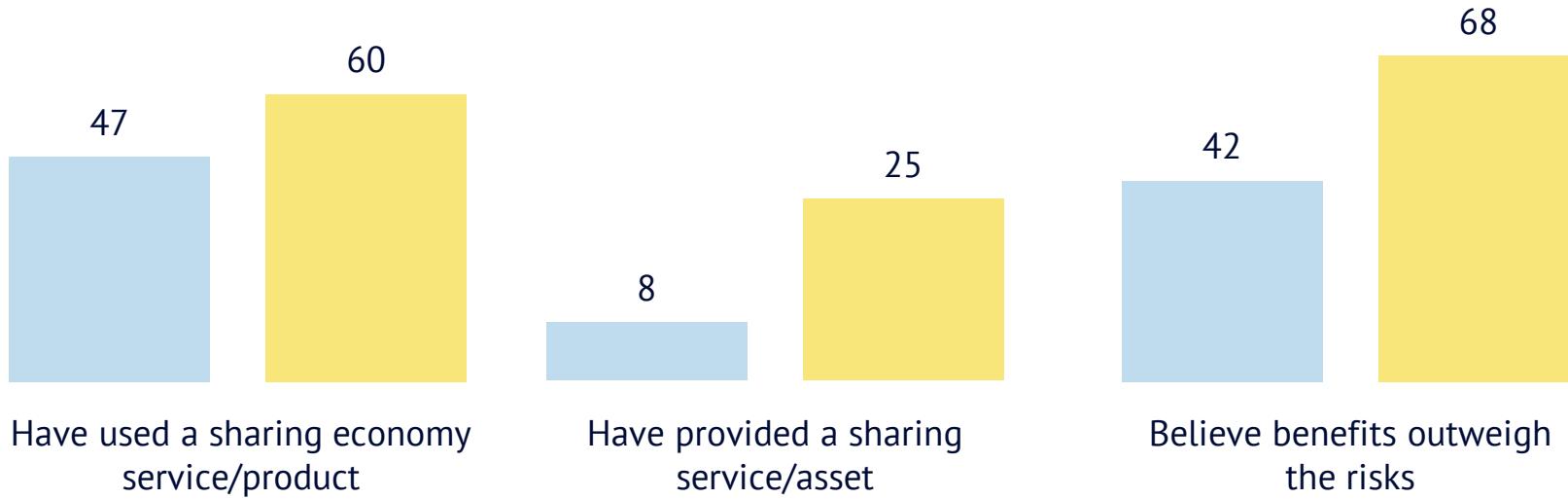
LI Kaizhu, Co-founder, Hellobike

# Chinese Consumers are Embracing the Sharing Economy

Compared with U.S. consumers, Chinese consumers are more actively involved with and open to sharing platforms.

## U.S. vs China attitudes to sharing economy

■ U.S. % ■ China %



# Chinese Consumers are Sharing Cars, Homes, Clothes and Kitchens (1 of 2)



## Car-Sharing

In 2018, automobile sales fell for the first time since the 1990s in part due to car sharing.



EvCard is an electric vehicle rental service under state-owned SAIC Motor Corp.

GoFun is a car-sharing platform backed by state-owned Shouqi Group with more than 1mn MAU in 2018.

Panda Auto is an electric vehicle rental operator under the Chongqing-based automaker Lifan Group.

Togo was one of the largest car-share companies in China but has recently suspended operations.



## Home-Sharing

There are two primary home-sharing services in China as an answer to Airbnb.



Tujia is a market leader backed by Ctrip, with 1.4mn listings.

Xiaozhu Duanzhu, backed by Alibaba, has over 500k listings.

# Chinese Consumers are Sharing Cars, Homes, Clothes and Kitchens (2 of 2)



## Fashion-Sharing

Apps, such as home-grown Ycloset and MSParis, tap demand from young professionals for affordable luxury rentals and from college-age fast-fashion fans without the income to constantly update looks.



Ycloset has more than 1 million items in stock. In Sept 18, Alibaba made an undisclosed strategic investment.



MSParis, which started out focusing only on gowns and luxury, has tapped into the market for everyday wear.



## Kitchen-Sharing

Compared to other sharing services, kitchen sharing is still relatively new in China, driven in part by on-demand meal delivery.

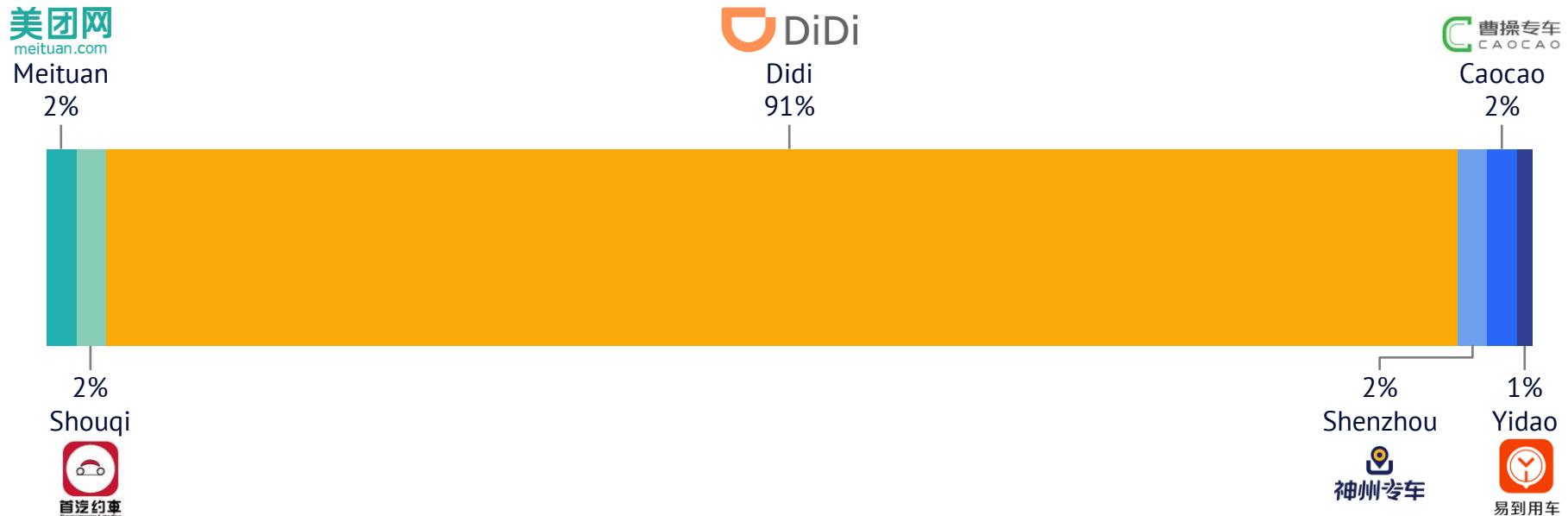


Former Uber CEO Travis Kalanick plans to bring Los Angeles-based CloudKitchens to China to provide food and beverage businesses with real estate, facilities management, technology and marketing services.

The Uber co-founder is partnering with Zhang Yanqi, the former chief operating officer at bicycle-sharing firm Ofo.

# Ride-Sharing Continues to be Dominated by Didi

China's ride-sharing market by share, Q4 2018



# But is There a New Challenger on the Horizon?



Alibaba



Suning



FAW

Tencent 腾讯

Tencent



CHANGAN

Chongqing Changan  
Automobile



东风汽车

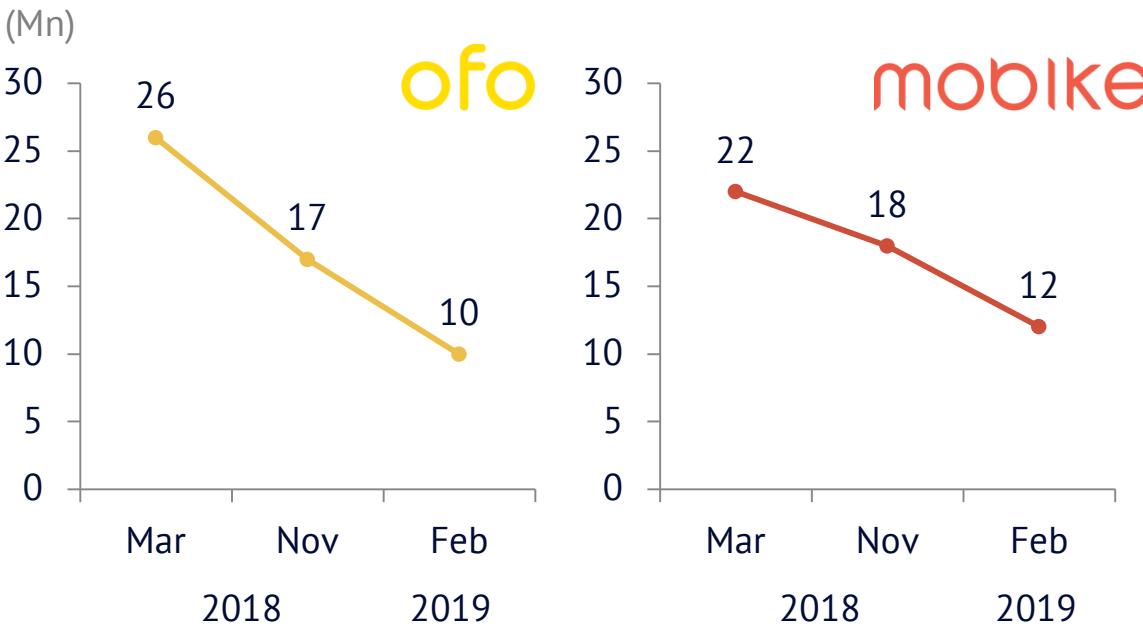
Dongfeng Motors

- Alibaba, Tencent, Suning and car makers including Chongqing Changan Automobile, FAW and Dongfeng have set up a US\$1.5 billion Chinese ride-hailing venture, a move that could test the dominance of ride-sharing giant Didi Chuxing.
- The new venture will mainly focus on alternative-fuel vehicles.
- Changan, FAW and Dongfeng will each have a 15% stake in the joint venture.
- Suning will be the biggest shareholder with a 19% stake.

# Bike Sharing has Cooled Dramatically

Last year, we reported that Ofo and Mobike commanded over 90% of the bike-sharing market and raised billions of dollars in funding. Today, companies are failing, bikes are piling up in graveyards and millions of angry users are demanding their deposits back.

Monthly active users for Ofo and Mobike



## What went wrong?

### Unsustainable price war

Ofo and Mobike were running 1 yuan (USD\$0.16) monthly memberships for a significant period of time.

### Over-expansion and over-supply

Huge piles of abandoned bikes have become a norm. Oftentimes it was cheaper for companies to restock new bikes than find and repair misplaced/broken ones.

### User data revenue never materialized

The return from bike sharing was largely expected to be made from the data harvested and how the service would be integrated into various company tech ecosystems. However, behavioral and geolocation data did not yield meaningful revenue in the interim.

# What Happened to Ofo, one of China's Most Prominent Start-ups?



- Ofo has gone from a Peking University project to a billion-dollar unicorn to a nearly bankrupt company in the span of four years.
- The start-up once had over 200m users in China. In December 2018, it had nearly 12m users demanding deposit refunds.
- High-profile founder and CEO Dai Wei has been placed on a blacklist of credit defaulters, meaning he's banned from playing golf, flying business class and staying in luxury hotels.

# UCAR is the Most Funded Chinese Sharing Economy Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
UCAR	2,390	Alibaba Group, CAR Inc., CICC, Credit Suisse, Warburg Pincus
Hello TransTech	1,750	Ant Financial, Chengwei Capital, Fosun Group, GGV Capital, WM Motor
Meituan Bike	928	Line Corporation, Qiming Venture Partners, Sequoia Capital China, Temasek Holdings, Tencent Holdings
Ucommune	680	All-Stars Investment, Gopher Asset Management, Sequoia Capital China, Yintai Group, ZhenFund
Shouqi Car Rental	579	CCB International, Jiashi Fund Management, Shouqi Group, Taikang Asset, Tianan Property Insurance Co.
Guazi Car Rental	149	FutureCap, IDG Capital, Morningside Group, Sequoia Capital China, Source Code Capital
Che300	120	N5Capital, SAIC Motor, Sequoia Capital, Source Code Capital
Xiangwushuo	89	GGV Capital, Hillhouse Capital Group, Matrix Partners China, Sequoia Capital China, ZhenFund
Bluegogo	66	Black Hole Capital, Elex Technology
SpeeDx	34	Sinovation Ventures, ZhenFund

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.

Source: Crunchbase



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*“2019 will be an exciting year for 5G in China. From research to standards, to networking equipment and devices, the end-to-end value chain is ready. China is expected to deploy upwards of 200,000 5G base stations across the country by the end of the year – a speed and scale that far surpasses any other market in the world.”*

---

YANG Chaobin, President of 5G Product Line,  
Huawei Technologies



*“With the strong demand for 5G-based applications, coupled with the change in the business model of how 5G practitioners will cooperate, we have worked with our partners to explore a large number of 5G-based industry applications, promoting the development of cross-industry integration, advocating for the implementation of intelligent ports, intelligent industry, intelligent security and other industry applications while working together with partners to create a healthy and comprehensive industry-wide ecosystem.”*

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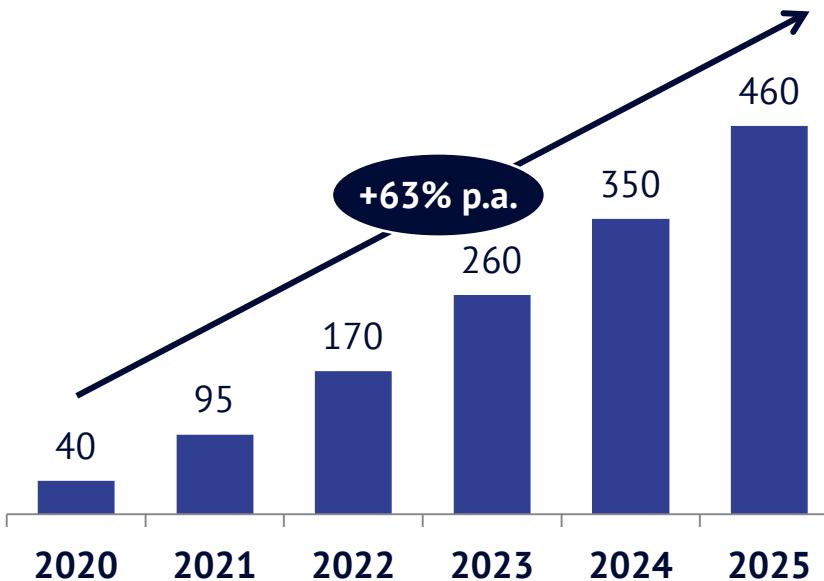
XU Ziyang, CEO, ZTE Corp

# 5G is on the Horizon

China is expected to reach 460 million 5G connections by the end of 2025, accounting for 28% of total connections in the country.

## 5G Connections in China

Mn



Commercial 5G licenses have just been granted to China's three telecommunications network operators and the nation's cable network giant in June



中国移动  
China Mobile



中国电信  
CHINA TELECOM



China  
unicom 中国联通



中国  
CBN

中国广播电视台网络有限公司  
China Broadcasting Network Corporation Ltd

- China Mobile, China Unicom and China Telecom, as well as China Broadcasting Network, were each awarded a license to run commercial 5G services, according to the Ministry of Industry and Information Technology.
- While South Korea, the US, Australia and the UK have launched initial commercial 5G services in the second quarter of 2019, the scale of China's market is likely to dwarf the combined size of those economies, negating any first-mover advantage.

# China and the U.S. Lead in Global 5G Readiness

The U.S. has tied with China in the lead for global 5G readiness, according to the latest study by Analysys Mason.

Rank	Country/Region	5G Readiness Score <sup>1</sup>
1	China	19
1	USA	19
3	South Korea	18
4	Japan	17
5	Italy	15
5	United Kingdom	15
7	Germany	14
7	Hong Kong	14
9	Australia	13
10	Spain	11

- The U.S. has tied with China in the lead for global 5G readiness, as the world's two largest economies race to deploy next-generation telecommunications networks.
- These networks will power the internet of things (IoT), autonomous driving and smart cities, among a range of mobile applications, such as augmented reality, according to the latest study by telecoms research firm Analysys Mason.

(1) Based on Analysys assessment of amount and timeline of spectrum to be released, spectrum roadmap, government support and policy, industry trials, industry commitment

# The Promise of 5G is Already Visible in China

5G is enabling real-world applications in healthcare services, autonomous driving and smart cities.



[Click to view full video](#)

At Shanghai's 2019 Auto Show, China Mobile showcased its autonomous vehicle technology – which allowed a driver at the Shanghai show to take the wheel and control a car more than 1,000km (620 miles) away in Beijing. It used a 5G network that had only a 10-millisecond delay.



Hangzhou's City Brain project, a cloud computing and artificial intelligence-driven urban traffic-management system, covers a total area of 420 km<sup>2</sup> (162 miles<sup>2</sup>) – that's seven times the size of New York's Manhattan island. With 5G networks, Hangzhou's City Brain will be able to process greater amounts of data gathered from a range of IoT units, including lamp posts, manhole covers and electricity meters. The advanced mobile infrastructure would enable sensors to be deployed in underground pipes to find water leakage.



**This doctor is performing remote-control surgery over a 5G network**

[Click to view full video](#)

China successfully tested the world's first remote-surgery equipment using 5G mobile network technology in January. In the procedure, a doctor in the southeastern province of Fujian removed the liver of a laboratory test animal at a remote location, by controlling robotic surgical arms over a 5G connection. The lag time lag was said to be only 0.1 seconds between the doctor's control device and the robot in the surgical room.



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# Artificial Intelligence



*“China is globally recognized as a leader in AI, supported by AI innovations, valuation, revenue, and publications. In the year and years to come, the biggest growth of AI in China, and arguably globally, will be coming from more traditional industries starting to embrace and infuse AI into their businesses.”*

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Dr. LEE Kai-Fu, CEO, Sinovation Ventures



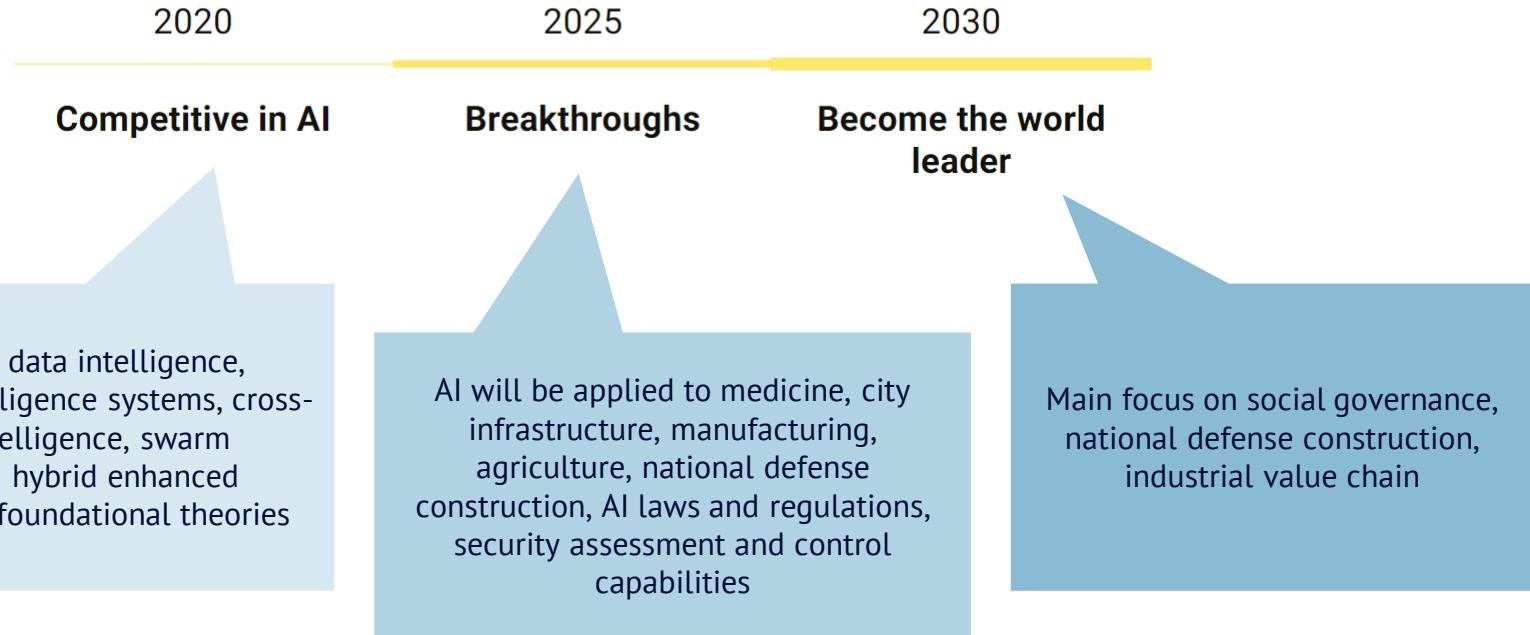
*“I believe in 2019 we will see a monumental shift in AI technologies having real impact across all industries. As AI continues to play a bigger role in transforming lives, innovation in AI must be driven with a human-centric mindset and a clear strategy.”*

---

Dr. XU Li, CEO, SenseTime

# China Has Set a Goal to be a Global Leader in AI by 2030 (1 of 2)

## China's AI Strategic Plan Through 2030



# China Has Set a Goal to be a Global Leader in AI by 2030 (2 of 2)

China's science and technology ministry named Baidu, Alibaba, Tencent and iFlyTek in 2017 as the first batch of companies to champion the development of various aspects of AI; SenseTime joined their ranks in 2018.



## Autonomous Car

- Committed to investing 10bn yuan to 100 autonomous driving-related businesses



## Smart City

- Has set up a chip subsidiary, Pingtouge, with plans to develop an AI semiconductor



## Medical Imaging

- Focused on five key disease areas: colorectal, lung, breast, cervical, cancer and eye



## Intelligent Voice

- Has 920k developers as of Dec 18 and speech recognition now covers 23 dialects



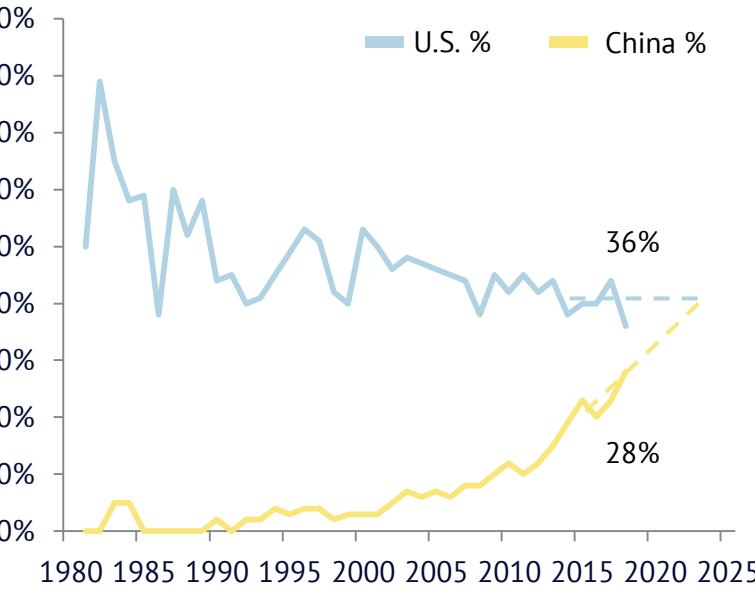
## Facial Recognition

- Co-leading creation of Malaysian AI research park, complementing R&D in Beijing and HK

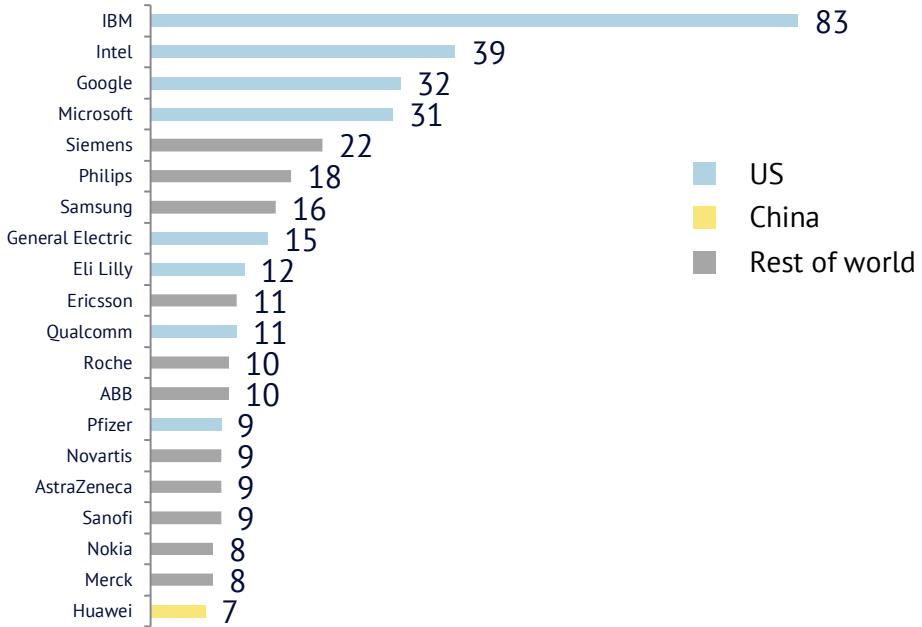
# China is On Track to Outpace U.S. in Some Measures of AI Prowess

After analyzing more than 2 million AI papers published up until the end of 2018, the Allen Institute found that China is poised to overtake the US in the top 50% of cited papers this year and in the top 1% of cited papers by 2025. However, Chinese companies have fewer of the world's top AI experts than the U.S.

**U.S. vs China: Share of Top 1% of AI Papers**



**Number of Top International AI Experts by Company**

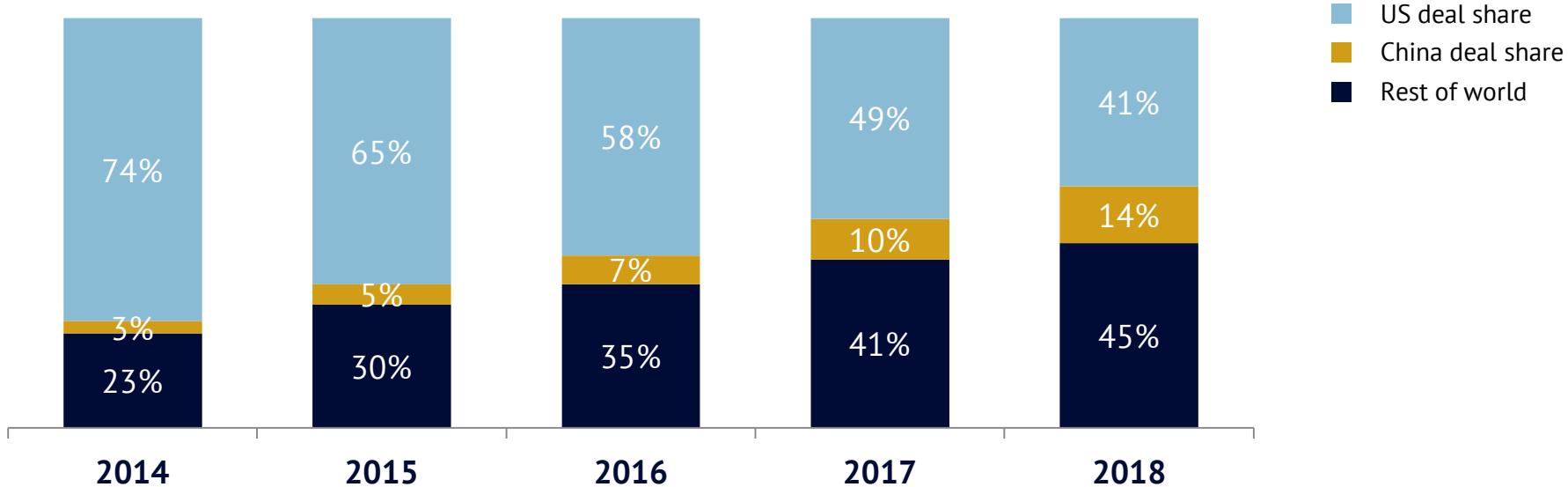


# China is Stepping Up Investments in AI

China's startup scene is gaining momentum, with China accounting for more global AI deals than five years ago.

## U.S. vs China: Share of Global AI Deals

Volume (%)



# Surveillance Tech is Becoming a Chinese Export

Top artificial intelligence start-ups such as SenseTime and Megvii are becoming major exporters of AI solutions for security and surveillance in government and commercial markets across Southeast Asia, Latin America and Africa.

**18 of 65 countries assessed by Freedom House are using Chinese-made surveillance technology. The U.S. is reportedly considering blacklisting Chinese surveillance technology firms.**



# SenseTime is the Most Funded Chinese AI Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
SenseTime	2,640	Alibaba Group, CICC, Qualcomm, Temasek Holdings, Tiger Global Management
Megvii	1,360	Alibaba Group, Ant Financial, Macquarie Group, Qiming Venture Partners, SK Group
UBTech Robotics	940	CreditEase, Haier, Qiming Venture Partners, Telstra Ventures, Tencent Holdings
AIWAYS	792	Mingchi Fund, Shagang Group
Horizon Robotics	700	Hillhouse Capital Group, Intel Capital, Linear Venture, SK Hynix, Vertex Ventures
9F Group	581	Cinda International Holding, IDG Capital, Ping An Ventures, SBI Investment, SIG China (SIG Asia Investments)
G7	510	Bank of China, Eastern Bell Capital, Temasek Holdings, Tencent Holdings, Total Ventures
Yitu Technology	355	Gaorong Capital, GC Capital, Sequoia Capital China, Shanghai Pudong Development Bank, ZhenFund
Mobvoi	253	Google, Sequoia Capital China, SIG China (SIG Asia Investments), Volkswagen Group, ZhenFund
Tongdun Technology	250	China Growth Capital, GGV Capital, IDG Capital, Linear Venture, Qiming Venture Partners

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.



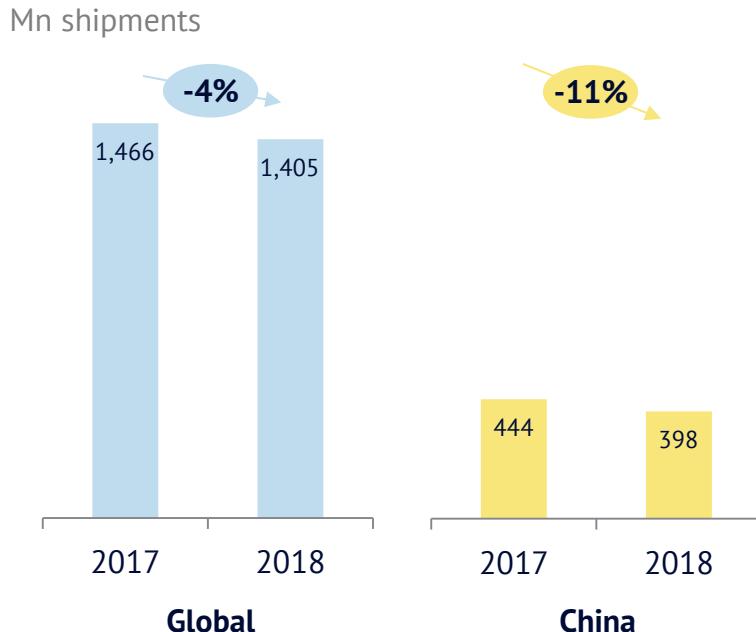
1	CHINA AT A GLANCE	3
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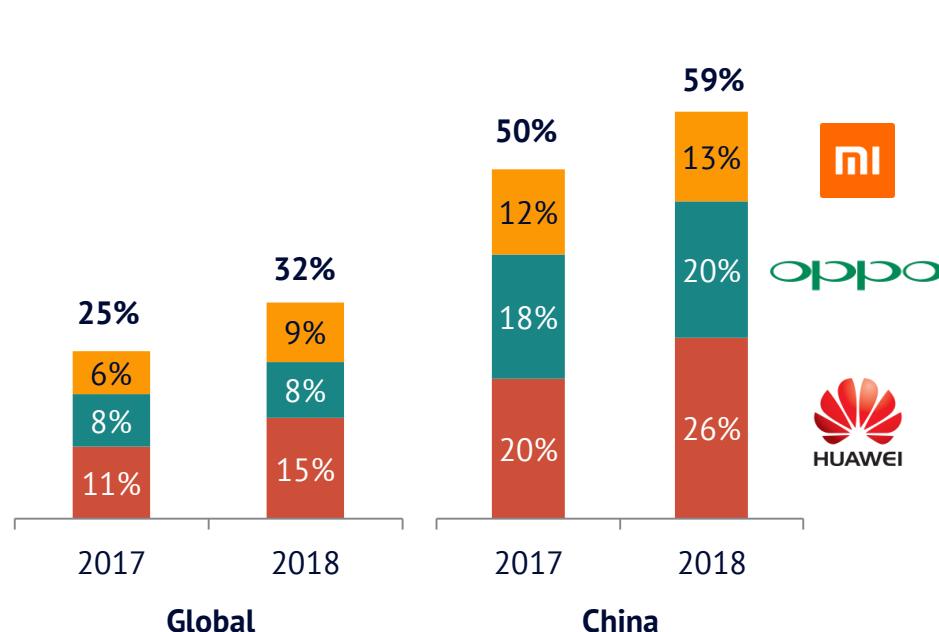
# Chinese Brands Thrive in a Slowing Smartphone Market

The smartphone market is contracting worldwide – and the picture is even more stark in China, where shipments dropped 11%. But while the market is contracting, Chinese brands are finding a way to grow their market share and display their leadership by pioneering new features.

Top 5 Smartphone Companies Shipment Volume



Huawei, OPPO and Xiaomi's Share of Global and China Smartphones



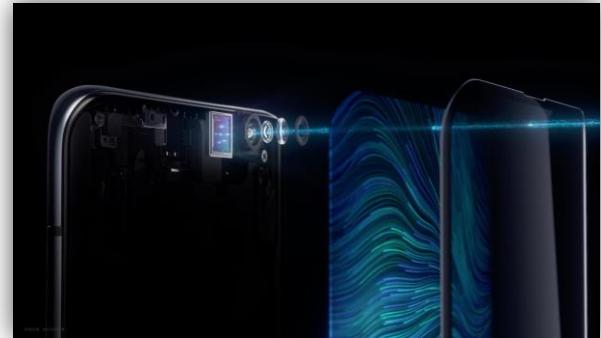
# Chinese Smartphones are Being Recognized for Innovative Features



Huawei's P30 Pro has been lauded for its 50X optical zoom and night sight mode.



Vivo has announced notch-free pop-up selfie cameras.



Xiaomi and OPPO are pioneering under-display selfie cameras.

# But the U.S. Blacklisting Of Huawei Reveals a Reliance on Overseas Technology

Huawei piece by piece: P30 Pro's most important part relies on U.S. tech.



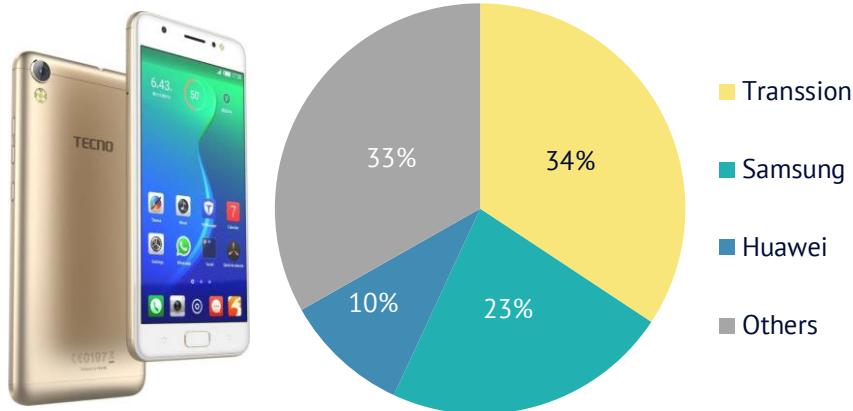
Huawei's Kirin chips are based on ARM architecture licensed from British chip giant Arm Holdings. The company also uses "U.S. origin technology," leading to Arm having to cut ties with Huawei.

# Chinese Companies Dominate in Africa (1 of 2)

While China's smartphone market might be saturated, with competition fierce, interest in smartphones is growing across African countries, some of which are still dominated by feature phones.

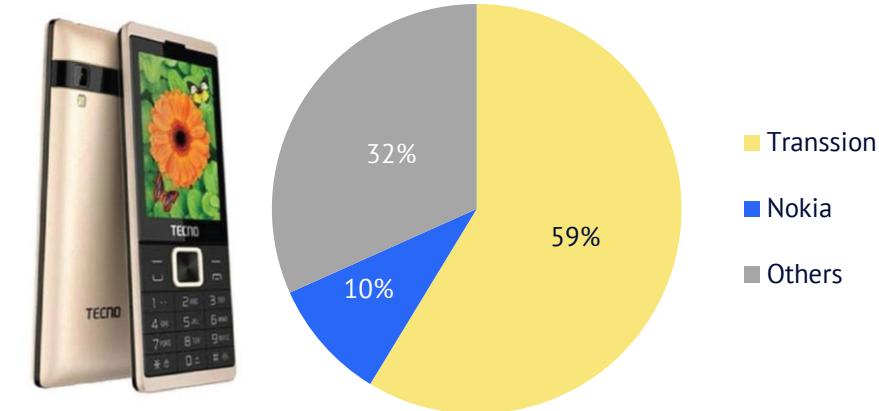
Smartphone Market Share in Africa, 2018

%



Feature Phone Market Share in Africa, 2018

%



# Chinese Companies Dominate in Africa (2 of 2)

While China's smartphone market might be saturated, with competition fierce, interest in smartphones is growing across African countries, some of which are still dominated by feature phones.



## What is Transsion?



- Transsion is a Shenzhen-based company that doesn't sell phones in China.
- Transsion's three brands - Tecno, Infinix and itel - all have strong holds on African consumers because they offer a range of competitively-priced phones.

## Who should we watch out for in Africa?



- Xiaomi recently announced its first official venture into Africa, launching a department headed by a current vice president.
- Honor, combined with parent company Huawei, has seen smartphone shipments increase by 48% in the last year.



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# Smart Devices



*"The Voice Assistant will become an increasingly important player in our life. I believe that in the coming decade, it will be connected with more devices and be the point of connection for different scenarios in our life, using voice commands to control our homes, vehicles and our personal devices."*

---

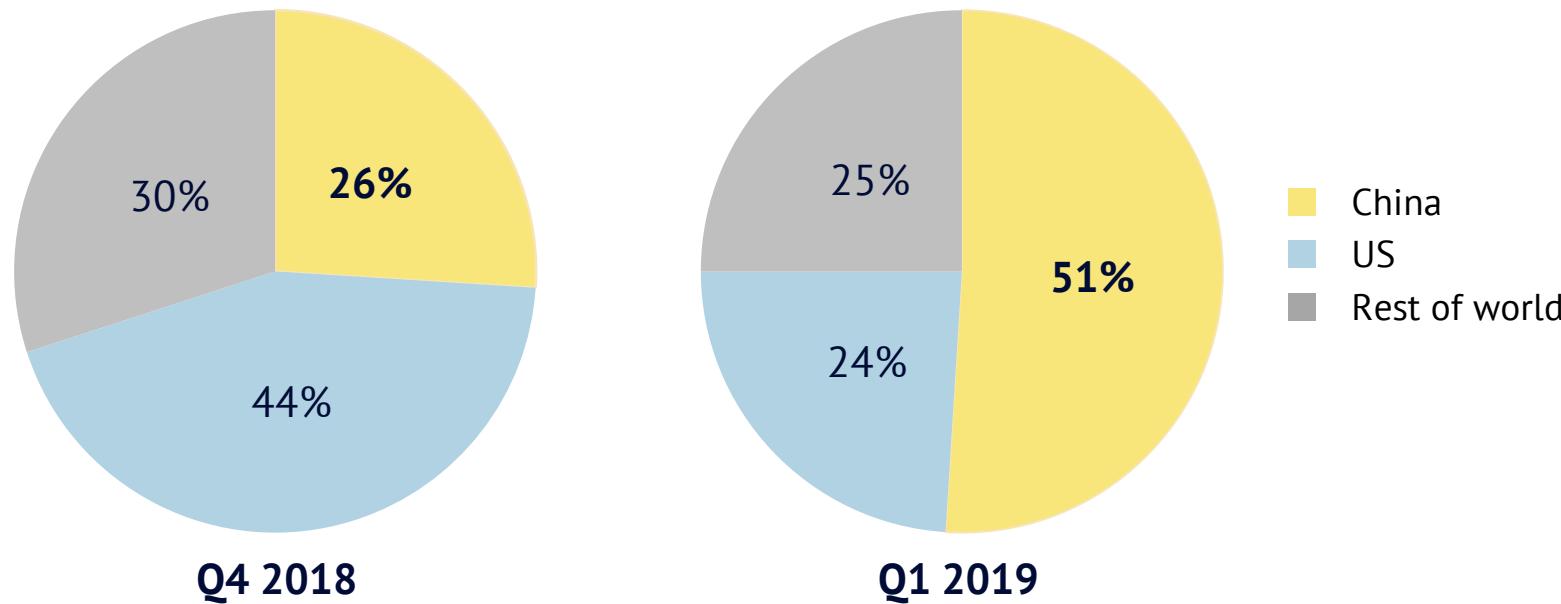
Miffy CHEN, General Manager, Alibaba AI Labs

# China Has Surpassed the U.S. in Global Smart Speaker Shipments

As of Q1 2019, China takes up over half of global smart speaker shipments at 10.6 million, nearly five times more than the previous year.

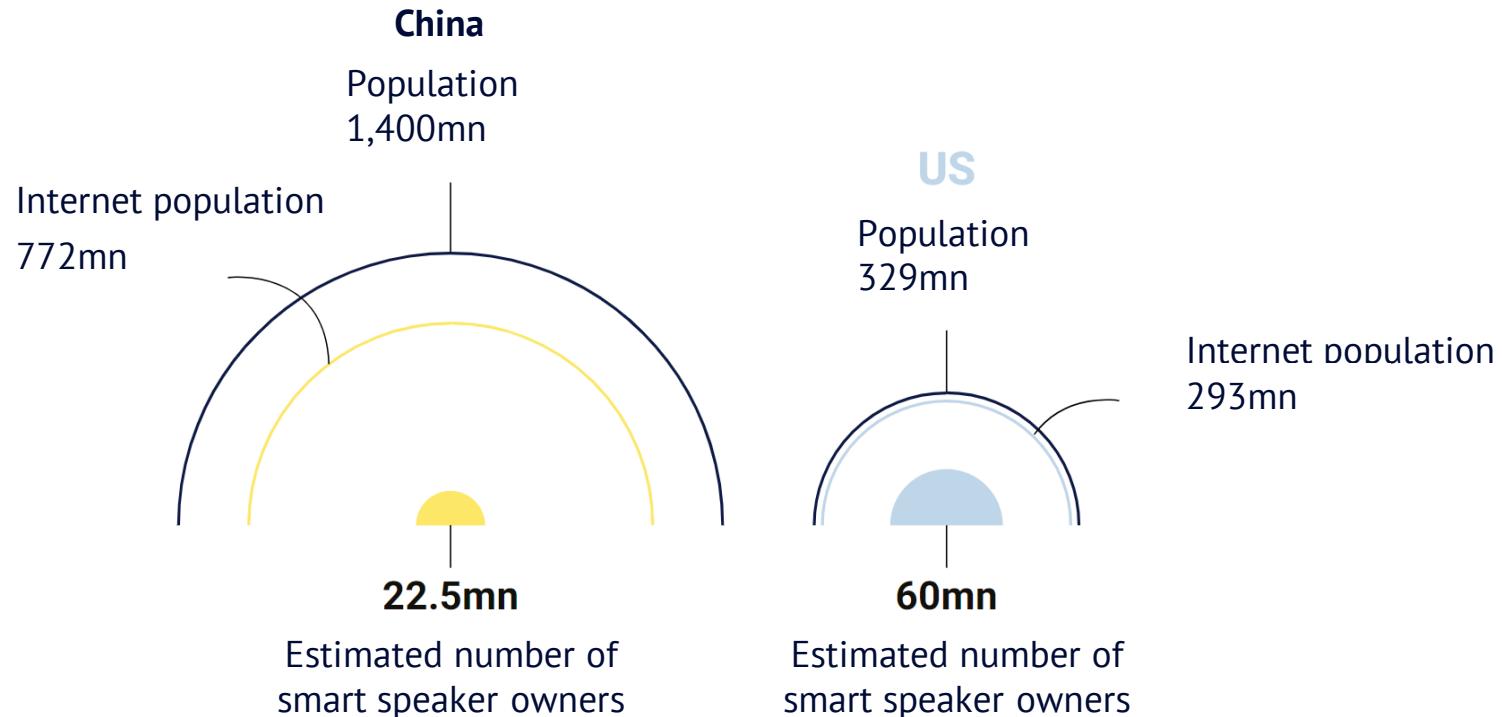
## Global Smart Speaker Shipments

Market Share By Country (%)



# But China's Smart Speaker Market Still has Potential for Growth

At the end of 2018, China's installed base of smart speakers hit 22.5 million, which is only 3% of China's internet population



# Baidu For the First Time Has Become the #1 Player in China

Improved AI interaction, more real-life use cases and a broader ecosystem of smart home appliances will help unleash the market's full potential

## Smart Speaker Shipments

Mn units

Baidu stopped production of the US\$256 Raven H last year, before re-entering the market with Xiaodu branded devices costing as little as US\$13.



# UBTech is the Most Funded Chinese Smart Device Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
UBTech Robotics	940	CreditEase, Haier, Qiming Venture Partners, Telstra Ventures, Tencent Holdings
Meizu Technology	890	Alibaba Group, Haitong Kaiyuan Investment
Haier	507	Alibaba Group, Forebright Capital, Haichuanghui, Innovation Ventures, TF Securities
Coocaa	218	Baidu, Tencent Holdings
Tuya	200	CICC, Future Fund, NEA, New Enterprise Associates, Oriental Fortune Capital
Rokid	158	Credit Suisse, IDG Capital, Linear Venture, Temasek Holdings, Vision Plus Capital
Yunding Technology	127	Baidu Ventures, K2VC, Red Star Macalline, Shunwei Capital, SIG China (SIG Asia Investments)
XGIMI	111	Baidu, Bojiang Capital (BoomingStar Ventures for the US fund), Matrix Partners China, Pan-Lin Asset Management, Sailing Capital
DJI	105	Accel, Lighthouse Capital Management, Sequoia Capital China
Energy Monster	60	GF Xinde Investment Management, Hillhouse Capital Group, Shunwei Capital, Sky9 Capital, Xiaomi



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# Autonomous Car



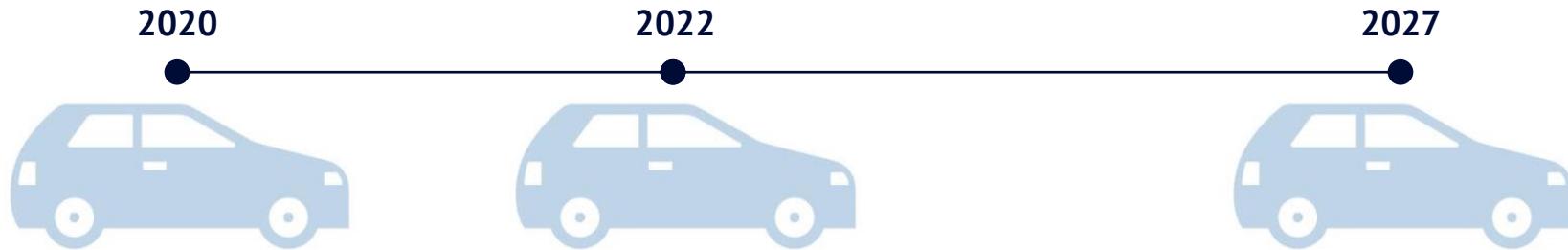
*“Policy support and guidance from Chinese regulators will give a big push for autonomous driving deployment in this market. 2018 was a foundation year for Chinese rule-making on autonomous driving...now more local governments have rolled out region-specific guidance which will further speed up the industry’s development.”*

---

James PENG, CEO, Pony.ai

# China is Throwing its Weight Behind Autonomous Car Development (1 of 2)

China is striving to gain leadership in developing next-generation cars with autonomous driving and internet connectivity.



China is expected to be home to a 100 billion yuan (US\$14 billion) market for intelligent connected vehicles by 2020. China also expects one in every two new cars sold to be equipped with smart and at least partially autonomous functions.

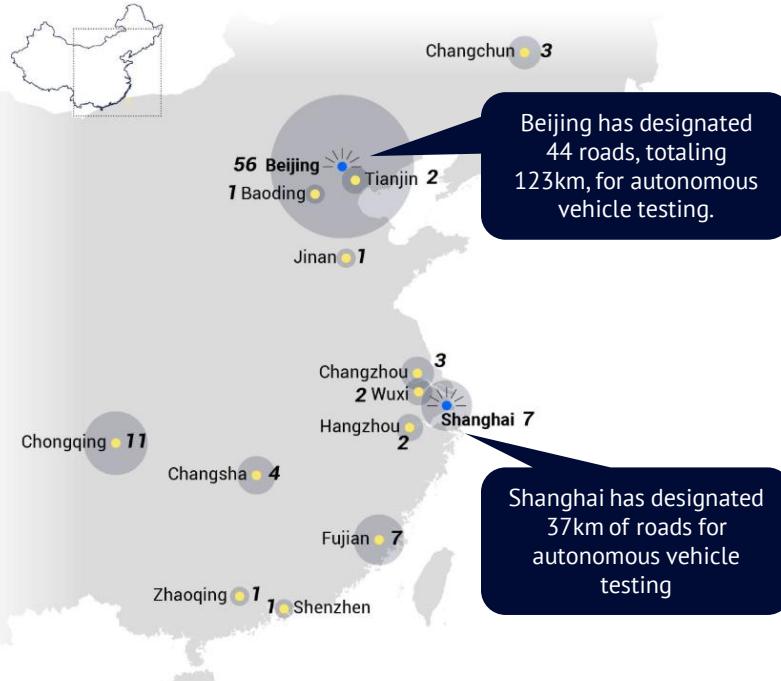
An autonomous vehicle-compatible “super highway” connecting Hangzhou to Ningbo is expected to be completed, increasing traffic speeds by 20-30%.

Mass adoption of highly autonomous vehicles, including night-time and peak hour driving, will likely start.

# China is Throwing its Weight Behind Autonomous Car Development (2 of 2)

101 licenses for autonomous vehicle road tests have been issued as of Jan 2019.

Most of the licenses<sup>1</sup> issued are for tests in Beijing



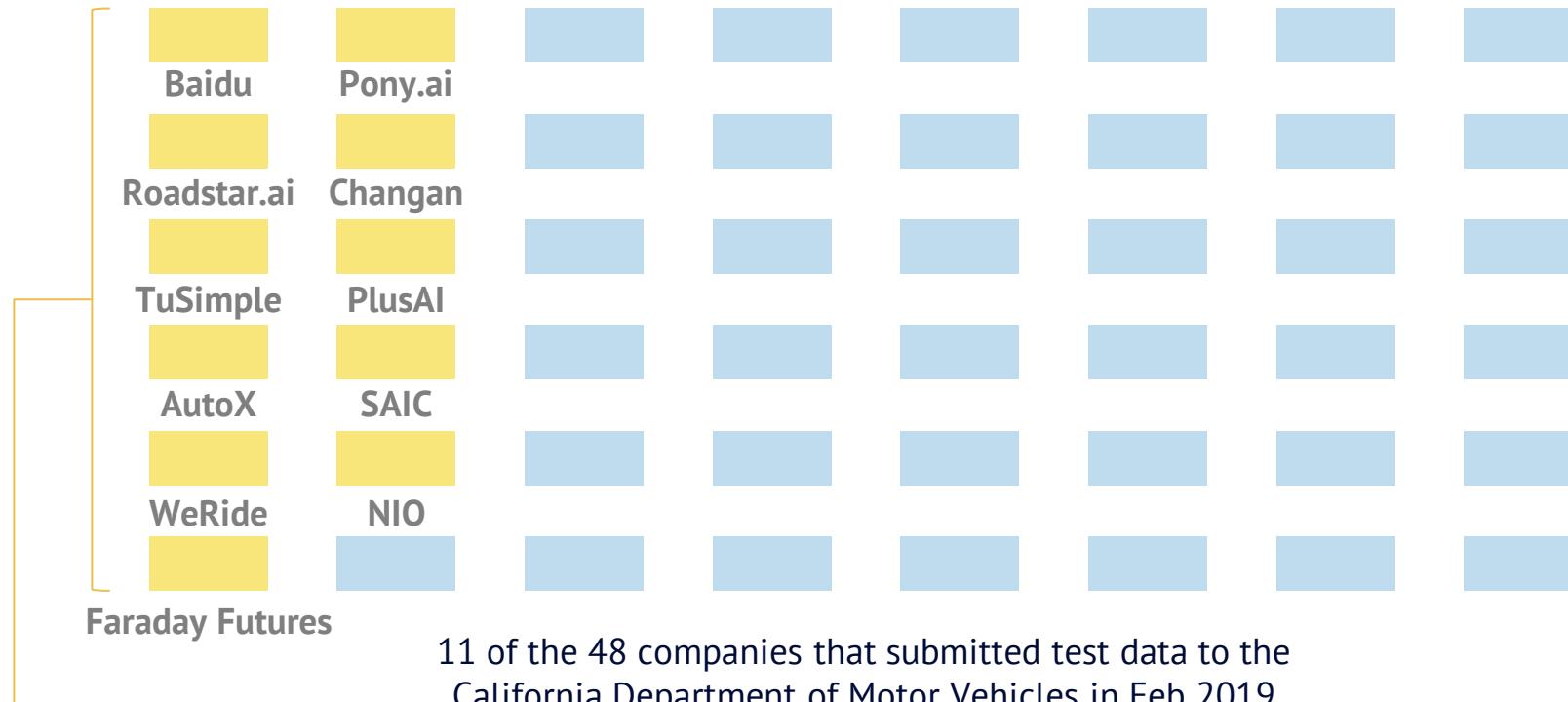
Baidu accounts for more than half of the issued test licenses



(1) Each license is for one vehicle, which allows for road tests in designated areas.

# Chinese Companies Have Strong Hopes For Autonomous Driving

Front-runners among Chinese autonomous driving companies include Baidu and Pony.ai.



11 of the 48 companies that submitted test data to the California Department of Motor Vehicles in Feb 2019 have their headquarters or main operations in China.

# Chinese Companies Still Lag Leading U.S. Players

U.S. companies are far ahead of Chinese firms in terms of miles travelled without human intervention.

Average Distance Traveled Before Human Intervention is Needed



Did You Know



- Baidu's self-driving vehicle undertaking, called the Apollo project, launched in April 2017.
- The company has secured partnerships with car companies such as Ford, Volvo Cars and BMW.
- Baidu is identified by China's Ministry of Science & Technology as the "national champion" in self-driving cars.



- Pony.ai was co-founded in 2016 by James Peng, the former chief architect at Baidu, and Tiancheng Lou, who worked at Google X's autonomous car project before it was spun off into Waymo.
- The company landed US\$1.7bn valuation with the latest funding round in April.

# BAIC BJEV is the Most Funded Chinese Autonomous Car Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
BAIC BJEV	1,660	China Cinda Asset Management, Daimler, Zhongji Investment
WM Motor	1,600	Baidu, Linear Venture, Sequoia Capital, SIG China (SIG Asia Investments), Tencent Holdings
Youxia Motors	1,335	China Environmental Protection Industry Co.
Xiaopeng Motors	1,290	Alibaba Group, CICC, GGV Capital, Lightspeed Venture Partners, UCAR
Souche	1,210	Alibaba Group, Ant Financial, Sequoia Capital China, UCAR, Warburg Pincus
Singulato Motors	1,082	GX Capital, ITOCHU Corporation, Qihoo 360 Technology, TaoYun Beijing Investment Fund
LeSee	1,080	Shenzhen Capital Group, Hongzhao Capital, Legend Holdings, Lenovo, Macrolink Group
AIWAYS	792	Mingchi Fund, Shagang Group
BYTON	700	Contemporary Amperex Technology, FAW Group, Foxconn Technology Group, Suning Holdings Group, Tencent Holdings
CHJ Automotive (Chehejia)	593	Funcity Capital, Matrix Partners China, Plum Ventures, Source Code Capital, Yintai Group

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.

Source: Crunchbase



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# Blockchain



*“For 2019, crypto in China needs to focus on security. If cryptocurrencies are going to instill confidence and play a role in any kind of store of value or medium of exchange, the security of the system becomes of fundamental importance.”*

---

Phil CHEN, Chief Decentralized Officer, HTC

# China Continues a Love-Hate Relationship With Crypto and Blockchain

On the one hand, China is warming up to blockchain development. But on the other hand, China continues to clamp down on all things crypto-related.

**164**

Companies that made the first list of registered blockchain providers in March 2019.

**1,500**

China's blockchain and crypto patents, which have grown five times since 2016.

**263**

Blockchain projects located in China as of 2018, 25% of world's total.

In late 2017/early 2018, China closed all cryptocurrency exchanges, ordered financial institutions to stop providing funding to any crypto-related activity, and blocked all overseas sites related to crypto-trading and ICOs. All of these rules are still in effect today.

China's top economic planning body has proposed new rules that would see the closure of all local cryptocurrency mining facilities if enacted. China is home to the world's biggest cryptocurrency mining farms.

## Fun fact

9 companies out of the 164 that made the first list of registered providers, including VeChain, raised ICOs, but overseas.

# Baidu, Alibaba and Tencent are Getting Into Blockchain too

The three internet giants are developing and commercializing their own blockchain offerings.



- In September 2018, Baidu Finance released its first blockchain whitepaper outlining capabilities in consumer finance, management of financial clients and community building, asset digitization, public welfare, identity systems, digital rights management and logistics.
- Of the 197 registered projects by the Cyberspace Administration of China, Baidu has three: Baidu Blockchain Engine, Superchain, and Tuteng.



- The world's biggest producer of bitcoin mining rigs has given up on its plan to go public in Hong Kong after the company struggled through mass layoffs and a leadership reshuffle.



- In October 2018, Alibaba Cloud launched its global Blockchain-as-a-Service (BaaS) offering, which provides enterprise-level platform services to help companies build a trusted cloud architecture.



- Tencent, along with Huawei and several other companies, formed the Financial Blockchain Shenzhen Consortium (FISCO).
- Their goal is to develop China's first open-source platform that meets regulatory requirements and financial industry demands.
- Tencent's registered projects include Tencent blockchain and Tencent Cloud's TBaaS platform.

# Ant Financial is the Most Funded Chinese Fintech and Blockchain Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
Ant Financial	22,000	Sequoia Capital, Silver Lake Partners, Temasek Holdings, The Carlyle Group, Warburg Pincus
JD Digits	4,949	General Atlantic, Sequoia Capital China, CICC, Harvest Global Investments, China Taiping Investments
Du Xiaoman Financial	4,800	Bank of Tianjin, The Carlyle Group, TPG
Lu.com	3,020	CDH Investments, CICC, Goldman Sachs, JP Morgan Chase, Macquarie Group
Suning Finance	3,015	YF Capital (Yunfeng), Bank of Nanjing, BNP Paribas Private Equity, Shenzhen Capital Group, GP Capital
CMC Capital Group	1,510	Alibaba Group, CMB International Capital Corporation, Tencent Holdings, Vanke
Souche	1,210	Alibaba Group, Ant Financial, Sequoia Capital China, UCAR, Warburg Pincus
Yixin Capital	1,130	Tencent Holdings, PA Grand Opportunity, Baidu, Bitauto Holdings, JD.com
Bitmain	765	Coatue Management, IDG Capital, Newegg, Sequoia Capital China, Temasek Holdings
9F Group	581	Cinda International Holding, IDG Capital, Ping An Ventures, SBI Investment, SIG China (SIG Asia Investments)

(1) Total funding amount highly depends on company disclosure and may vary by sources. Best estimates apply here.



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# Gaming



*“Cloud gaming will become an important trend. Esports will be a main driver...the phenomenon of esports tournament livestreaming is drawing increasing attention. Chinese gaming companies will accelerate their pace of expansion in overseas markets...in line with the One Belt One Road Initiative, emerging markets such as Southeast Asia are their logical first stop.”*

TAN Min-liang, CEO, Razer



*“Gaming is now no longer a sub-culture that the mainstream audience sees. We will start to see more and more people grow up around games, and even want to practice playing games in the hopes of becoming an esports athlete one day. It’s a new way of life, a new fashionable lifestyle - and this trend will only continue to get stronger in 2019 and beyond.”*

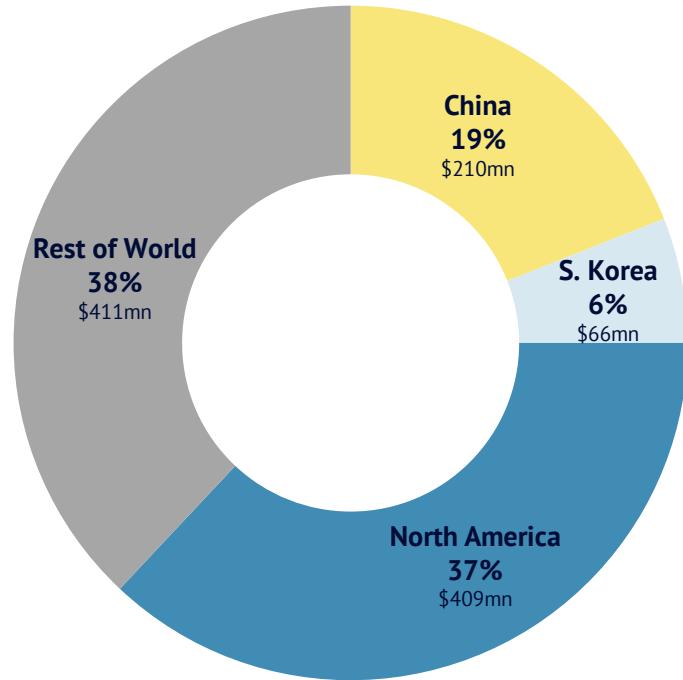
Johnson YEH, Regional Head of Greater China and Southeast Asia, Riot Games

# China's Esports Market is Big...

Global esports revenue will exceed US\$1 billion for the first time in 2019. Nearly a fifth of that will come from China.

2019 Esports Revenue

USD



**767mn**

Number of PC and mobile gamers in China expected by 2023.

**17,000**

Area in square meters for Hangzhou's designated esports town, featuring an esports academy, theme park, hotel and even hospital.

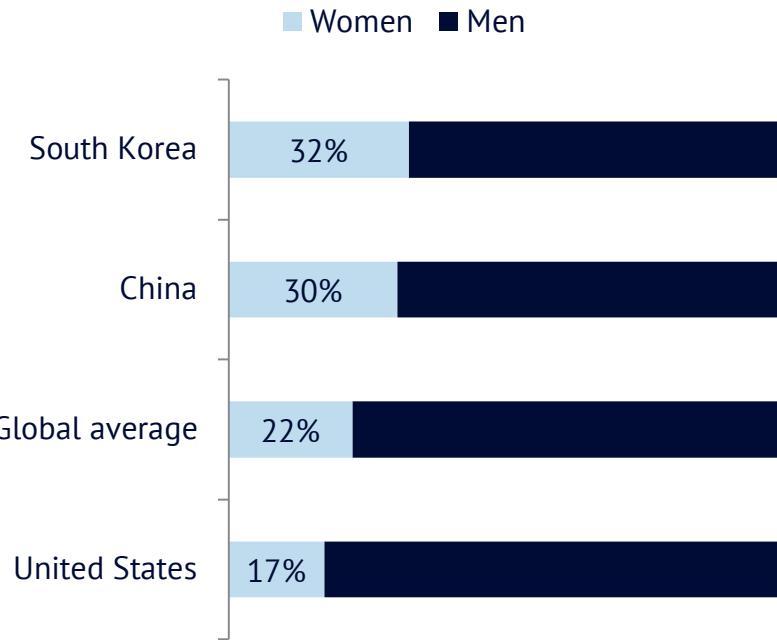
**2**

New professions officially recognized by China's Ministry of Human Resources and Social Security in 2019: 'esports operator' and 'esports professional'.

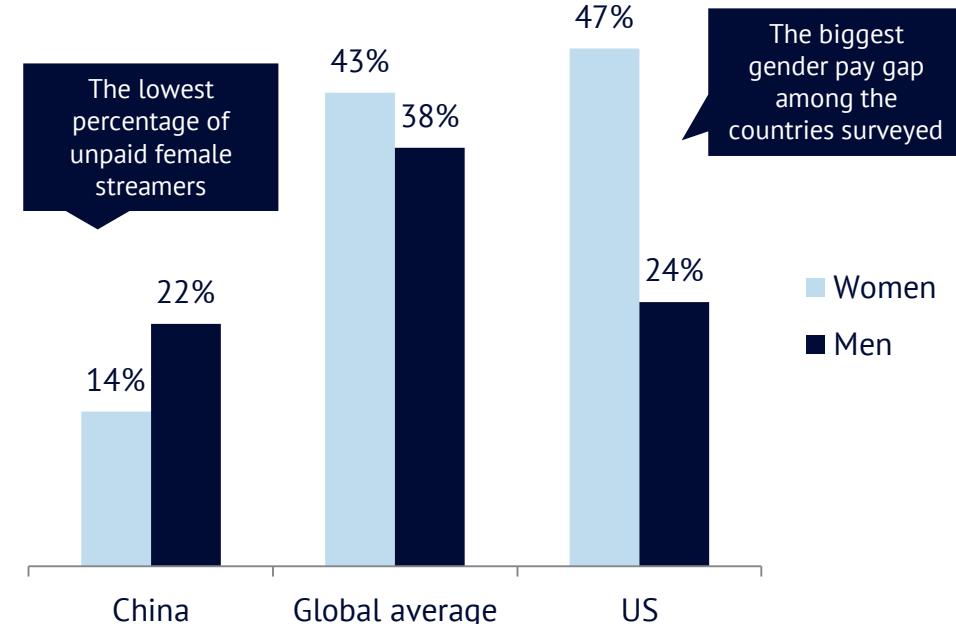
# And Unique in That it Leads the way in Gender Equality

China has the 2<sup>nd</sup> highest distribution of female esports fans globally and is welcoming to female gaming streamers.

Gender Distribution of Esports Fans



Percentage of Gaming Streamers not Paid for Content They Create



# The Two Biggest Video Game Live Streaming Platforms Are Huya And Douyu

'China's Twitch' can refer to either Huya and Douyu, both of which are backed by Tencent.



Monthly active users	120mn	160mn
Paying users	4.8mn	6mn
IPO	Raised US\$180mn from its NYSE listing in May 2018	Filed for US\$500mn IPO on the NYSE in April 2019
Revenue model	95% of total revenue in Q4 2018 came from live streaming gifts	86% of total revenue in Q4 2018 came from virtual gifts that users bought to tip their favorite streamers

Panda TV, which we mentioned in last year's report as the no. 4 game streaming network, has ended its service.

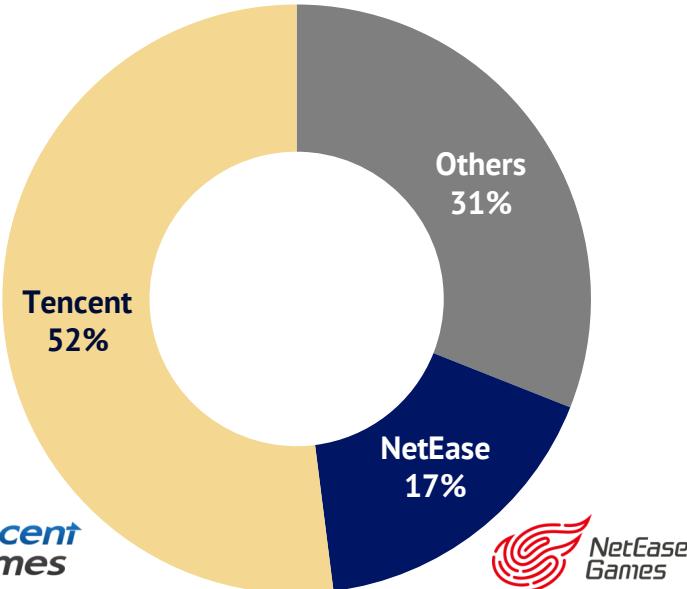


- Shanghai-based Panda TV shut down its servers after failing to raise fresh funds to keep operations going.
- Panda TV was founded in 2015 by Wang Sicong, an entrepreneur and son of Chinese tycoon Wang Jianlin.
- High bandwidth costs and rising salaries for streamers were major reasons behind the cash shortage.

# China's Biggest Gaming Companies are Going Global (1 of 2)

Tencent and NetEase have long dominated their home market. Now their expertise in mobile is being recognized outside China, with both winning the right to develop smartphone versions of some of the world's biggest games.

China's Gaming Market Share by Revenue in 2018



- **PUBG (PlayerUnknown's Battlegrounds) Mobile** by Tencent is the world's most popular smartphone game and just surpassed 100mn MAU in May.
- **Diablo: Immortal**, the mobile-only follow-up to Blizzard's popular action role-playing game, will be co-developed by Chinese gaming giant NetEase.
- Activision's iconic **Call of Duty** game will see a mobile version in late 2019, also made by Tencent.

# China's Biggest Gaming Companies are Going Global (2 of 2)

Tencent and NetEase have stakes across the gaming industry.

2011		2015		2018		2018	
	<ul style="list-style-type: none"><li>Maker of League of Legends</li><li>Acquired majority stake in 2011 and then fully acquired in 2015</li></ul>		<ul style="list-style-type: none"><li>Maker of Diner Dash</li><li>Acquired 14.6% stake for US\$126mn</li></ul>		<ul style="list-style-type: none"><li>Parent company of Skydance Interactive VR game studio</li><li>Acquired minority stake</li></ul>		<ul style="list-style-type: none"><li>Maker of SpatialOS</li><li>Acquired minority stake for US\$100mn</li></ul>
	<ul style="list-style-type: none"><li>Maker of Fortnite</li><li>Acquired a 40% stake at US\$825mn valuation when Fortnite was still in development</li></ul>		<ul style="list-style-type: none"><li>Maker of Clash of Clans</li><li>Acquired 84% of Supercell for US\$8.6bn</li></ul>		<ul style="list-style-type: none"><li>Maker of Path of Exile</li><li>Acquired majority stake</li></ul>		<ul style="list-style-type: none"><li>Maker of Destiny</li><li>Acquired minority stake for US\$100mn</li></ul>
	<ul style="list-style-type: none"><li>Maker of Overwatch</li><li>Participated in Activision-Blizzard investor buyout, estimated at 5% stake</li></ul>		<ul style="list-style-type: none"><li>Maker of Jurassic World Evolution</li><li>Acquired a 9% stake in the UK developer</li></ul>		<ul style="list-style-type: none"><li>Maker of Assassin's Creed</li><li>Acquired 5% stake</li></ul>		<ul style="list-style-type: none"><li>Maker of Detroit: Become Human</li><li>Acquired minority stake</li></ul>

# Douyu TV is the Most Funded Chinese Gaming Startup

As of June 2019

Company	Total Funding <sup>(1)</sup> (US\$mn)	Selected Investors
Douyu TV	1,130	CMB International Capital Corporation, Nanshan Capital, Phoenix Capital, Sequoia Capital China, Tencent Holdings
Shanda Games	517	SAIF Partners, Tencent Holdings
Panda TV	243	Akashi Investment, Han Fu Capital, LeCloud, Light Source Capital, Working Capital
Easy to play	219	Gibbic, Heart Network
Chukong Technologies	83	New Horizon Capital, GGV Capital, Horizon Capital, Northern Light Venture Capital, Sequoia Capital China
Fuze Game	60	Fosun Ventures, IDG Capital, Linekong
ANTVR Technology	56	CDF-Capital, Kickstarter, Sequoia Capital China
Longzhu TV	44	SoftBank, Tencent Holdings
Happy Elements	35	DCM Ventures, Legend Capital
Noitom	25	Haitong Kaiyuan Investment, Legend Capital

# Acknowledgement



## South China Morning Post

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Matt Haldane, Ravi Hiranand



## Proof of Capital

Edith Yeung



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