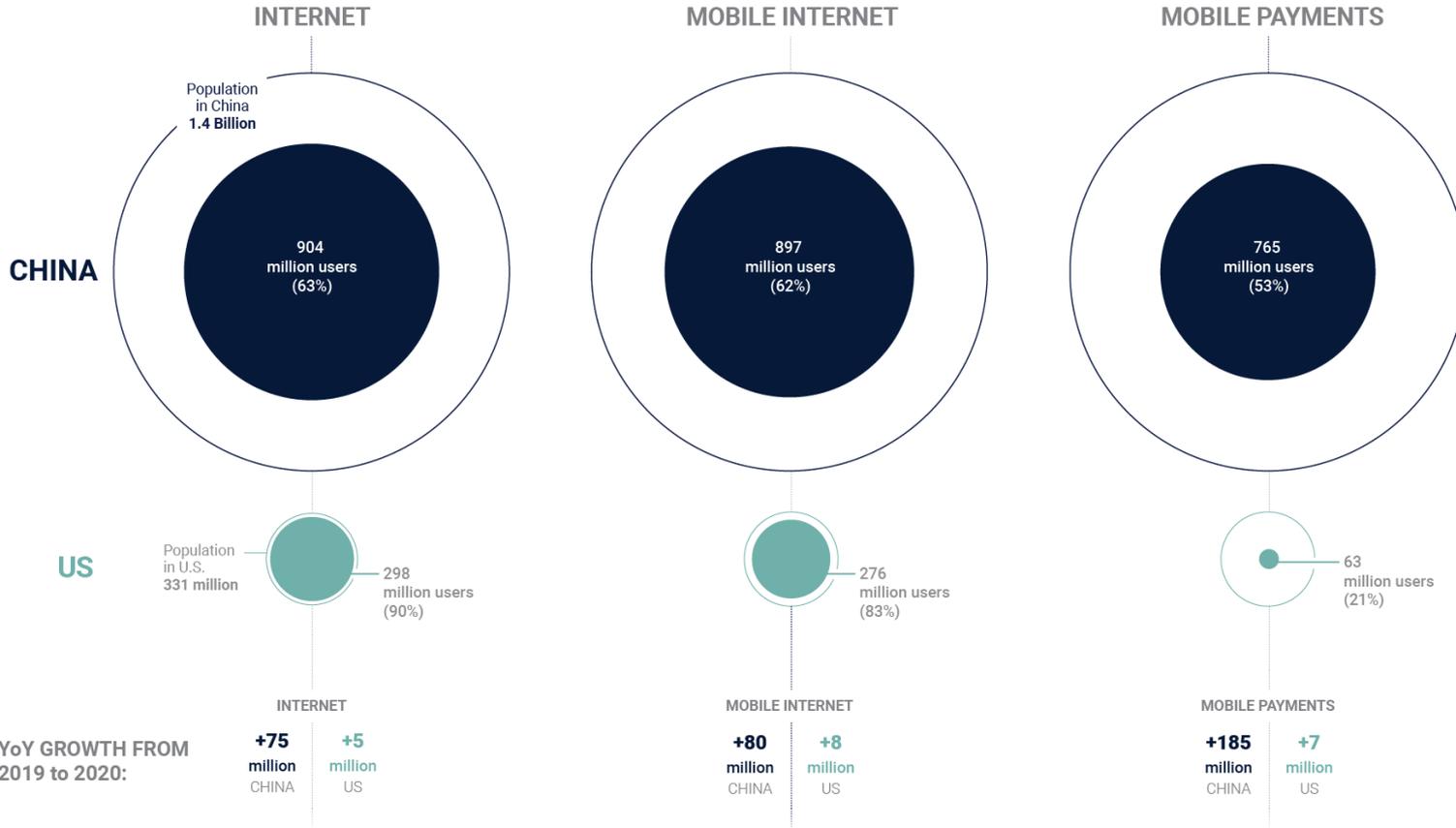


China has emerged on the world stage with a range of global tech companies that are innovative and competitive. And increasingly, their successes are being studied and replicated in other markets.

This third edition of the China Internet Report delves deeper into China's drive to be a global leader for innovation, and examines the opportunities and challenges for its technology-led industrial transformation.

China's sheer scale and impact as an emerging global trendsetter make the China Internet Report a must-read for global business, policy, marketing, and technology decision-makers.

China vs U.S. Internet



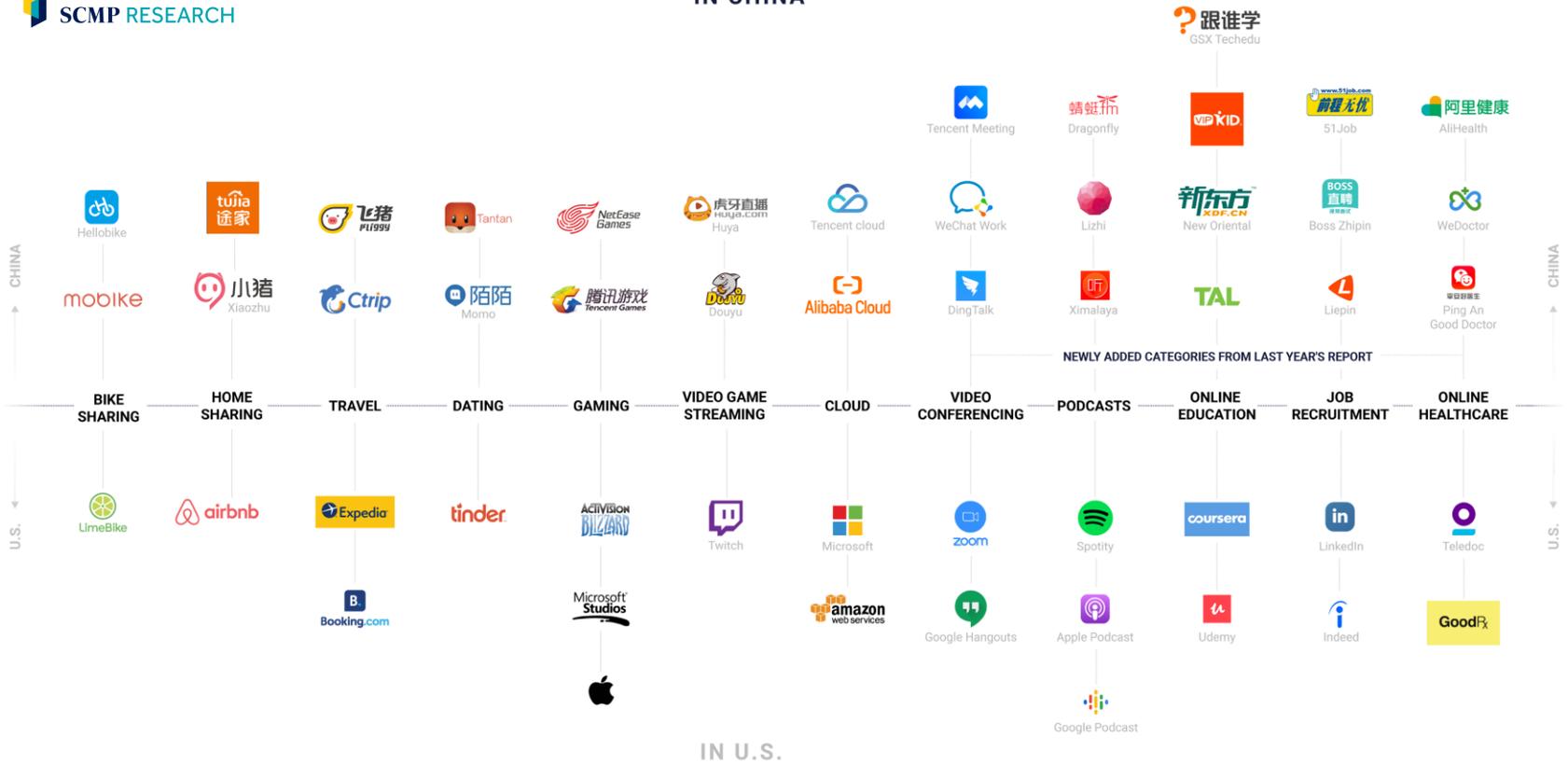
China vs U.S. Players by Key Verticals (1 of 2)



China vs U.S. Players by Key Verticals (2 of 2)



IN CHINA



Top Chinese Internet Players (1 of 2)

Rank	Company	CEO	Selected Investors	Listed on	Market Cap / Valuation (US\$bn)
1	Tencent Holdings	Pony MA	IDG Capital, PCCW, Lippo Group, Prosus & Naspers	HKG: 700	631
2	Alibaba	Daniel ZHANG	General Atlantic, SoftBank, Goldman Sachs, DST Global, GIC	NYSE: BABA; HKG: 9988	579
3	Ant Group	Simon HU	General Atlantic, Sequoia Capital, GIC, Silver Lake Partners, Temasek Holdings	Private	200
4	Meituan-Dianping	WANG Xing	Tencent Holdings, Qiming Venture Partners, DST Global, GIC, Lightspeed Venture Partners	HKG: 3690	134
5	ByteDance	ZHANG Yiming	Sequoia Capital China, SIG Asia Investments, Softbank Group	Private	110
6	Pinduoduo	Lei CHEN	Tencent Holdings, Sequoia Capital China, Cathay Innovation, IDG Capital, Gaorong Capital	NASDAQ: PDD	102
7	JD.com	Richard LIU	Walmart, DST Global, Google, Sequoia Capital China, Tiger Global Management	NASDAQ: JD; HKG: 9618	93
8	Netease	DING Lei	SoftBank Capital	NASDAQ: NTES; HKG: 9999	69
9	Didi Chuxing	CHENG Wei	Matrix Partners, Tiger Global Management, Softbank Corp.,	Private	53
10	Xiaomi	LEI Jun	Qiming Venture Partners, Goldman Sachs, DST Global, Deutsche Bank, GIC	HKG: 1810	42

¹Financial figures presented in this report are in USD; if original reported figures were in RMB, the report used a last-90 day average conversion rate of 7.1428
Source: Crunchbase, CB Insights, Hurun, ITjuzi, SCMP Analysis



Top Chinese Internet Players (2 of 2)

Rank	Company	CEO	Selected Investors	Listed on	Market Cap / Valuation (US\$bn)
11	Baidu	Robin LI	Tencent Holdings, Lenovo, GIC, IDG Capital, Sequoia Capital China	NASDAQ: BIDU	42
12	Lufax	Gregory D GIBB	CICC, Goldman Sachs, Macquarie Group, COFCO, JP Morgan Chase	Private	39
13	JD Logistics	WANG Zhenhui	Tencent Holdings, Sequoia Capital China, Hillhouse Capital Group, K3 Ventures, ICBC International	Private	30
14	Kuaishou	SU Hua	Morningside Venture Capital, Sequoia Capital, Baidu	Private	28
15	Tencent Music	Cussion PANG	Spotify	NYSE: TME	22
16	WeBank	GU Min	Tencent Holdings	Private	21
17	Cainiao Logistics	WAN Lin ¹	Alibaba Group, GIC, Temasek Holdings, Khazanah Nasional, Primavera Capital Group	Private	20
18	JD Digits	CHEN Qiangsheng	CICC, Sequoia Capital China, COFCO, China Creation Ventures (CCV), Intonation Ventures	Private	20
19	Qihoo 360	ZHOU Hongyi	Matrix Partners, Sequoia Capital China, Redpoint, IDG Capital, Aier Eye Hospital Group	SHSE: 601360	18
20	iQiyi	GONG Yu	Xiaomi, Sequoia Capital, IDG Capital, Shunwei Capital, Providence Equity Partners	NASDAQ: IQ	17

¹President

Source: Crunchbase, CB Insights, Hurun, ITjuzi, SCMP Analysis



Top Chinese Startup Exits (IPO)

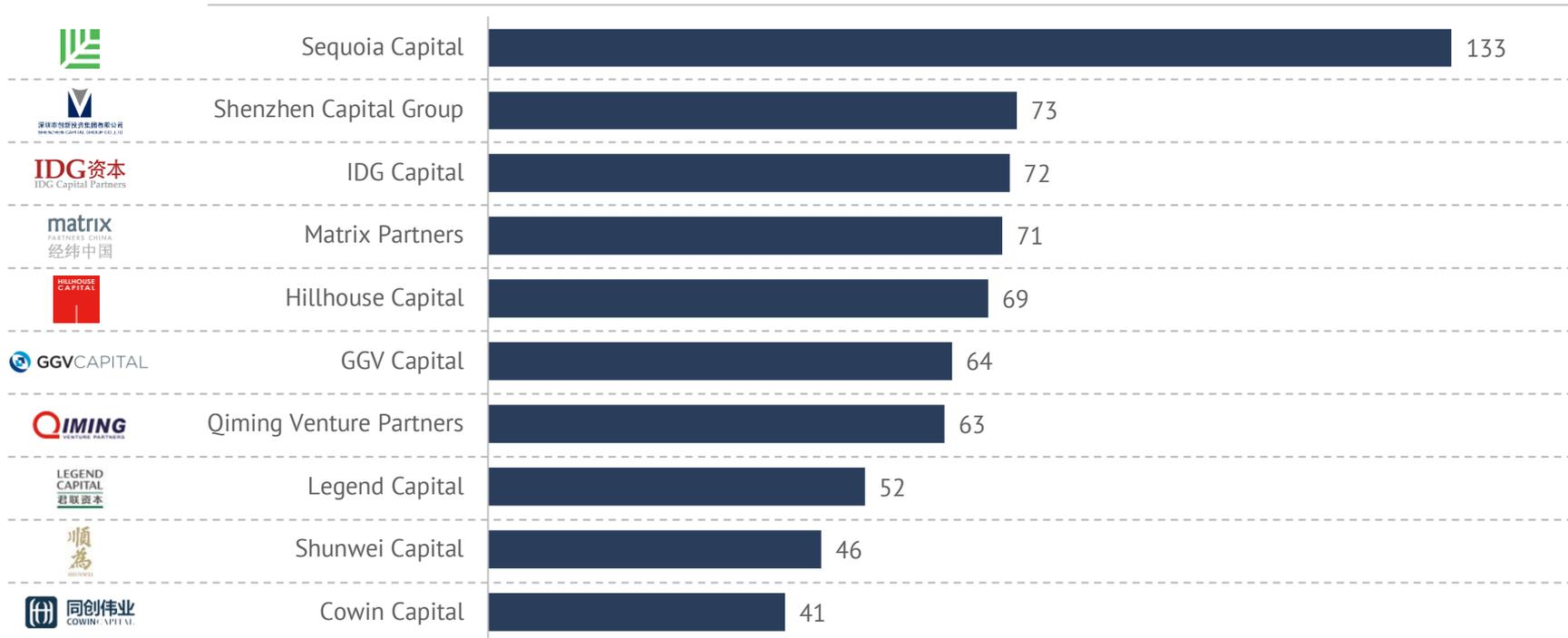
Rank	Company	CEO	Listed on	Date of IPO	Headquarter	Amount Raised from IPO (US\$m)	Market Cap (US\$bn)
1	Kingsoft Office	GE Ke	SHSE:688111	11/18/2019	Beijing	651	18.7
2	GSX Techedu Inc	Larry CHEN Xiangdong	NYSE: GSX	6/6/2019	Beijing	208	13.8
3	Transsion	ZHU Zhaojiang	SHSE: 688036	9/25/2019	Shenzhen	395	7.4
4	OneConnect Financial Tech	TAN Binru	NYSE: OCFT	12/12/2019	Shenzhen	312	7.4
5	CR Micro	CHEN Shuo	SHSE: 688396	2/27/2020	Shenzhen	484	6.7
6	Kingsoft Cloud	WANG Yulin	NASDAQ: KC	5/8/2020	Beijing	510	6.3
7	Agora Inc	Tony ZHAO	NASDAQ: API	6/26/2020	Shanghai	350	4.9
8	UCloud Information	Ji Xinhua	SHSE: 688158	1/20/2020	Shanghai	283	4.3
9	Koolearn Tech	SUN Dongxu	HKG: 1797	3/14/2019	Beijing	214	4.2
10	Youdao Inc	ZHOU Feng	NYSE: DAO	10/24/2019	Beijing	220	4.1

¹Market Cap figure as of June 30, 2020
Source: Crunchbase, ITJuzi, SCMP Analysis



Most Active VC Firms in China

Number of Investments in China (Jan 2019 – May 2020)



1

Lasting Impact of COVID-19 on China's Tech Sector

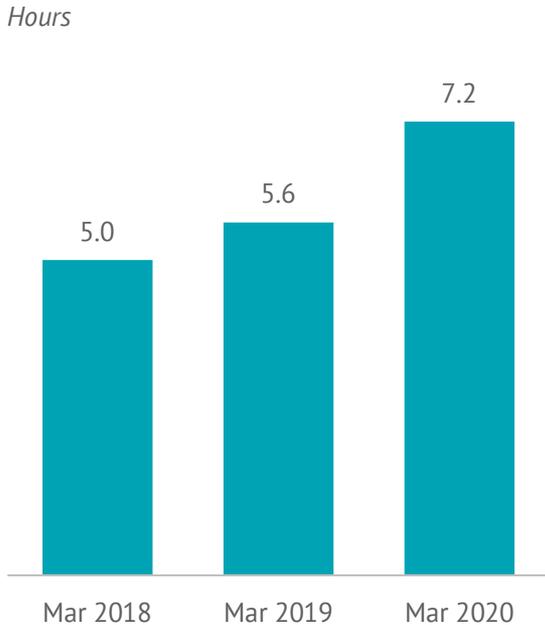
COVID-19 has had a profound impact on China's technology landscape, from accelerating media consumption to rallying innovative technology use cases to combat the virus itself. As the situation improves in China, we nevertheless expect to see lasting impact with accelerated digitalization across various sectors.



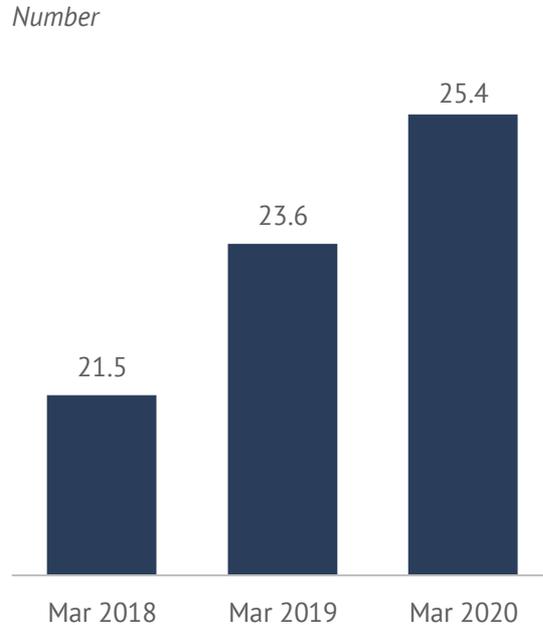
1 Lasting Impact of COVID-19 on China's Tech Sector

COVID-19 has affected media consumption across China, driving record high internet and app usage, with this growth driven mostly by the 40+ age segment.

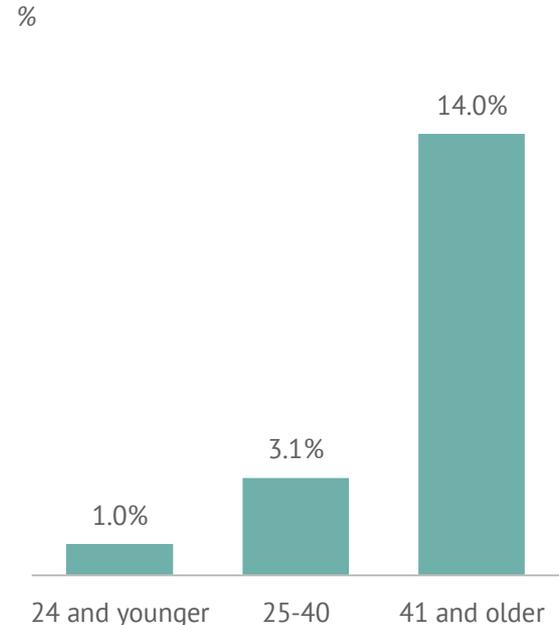
Average Daily Time Spent on the Internet by Chinese Users



Average Number of Apps Opened Monthly by Chinese Users



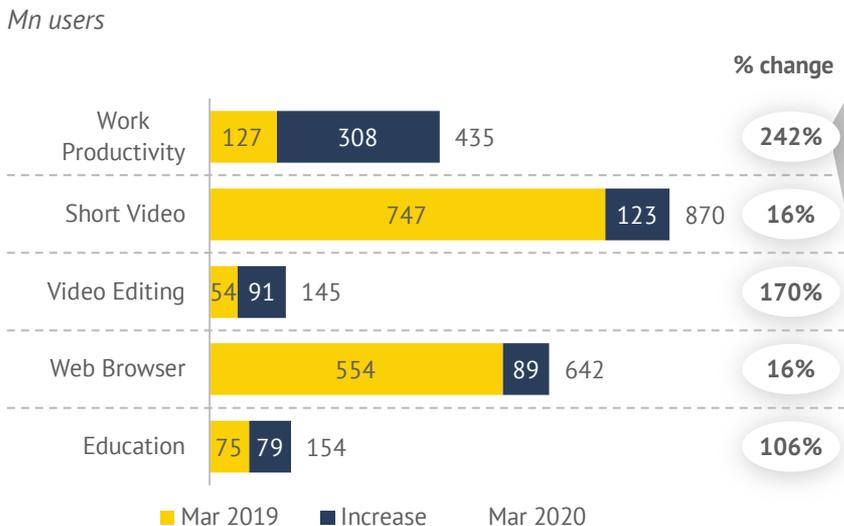
Growth in Monthly Mobile Users by Age Segment, Mar 19 vs Mar 20



1 Lasting Impact of COVID-19 on China's Tech Sector

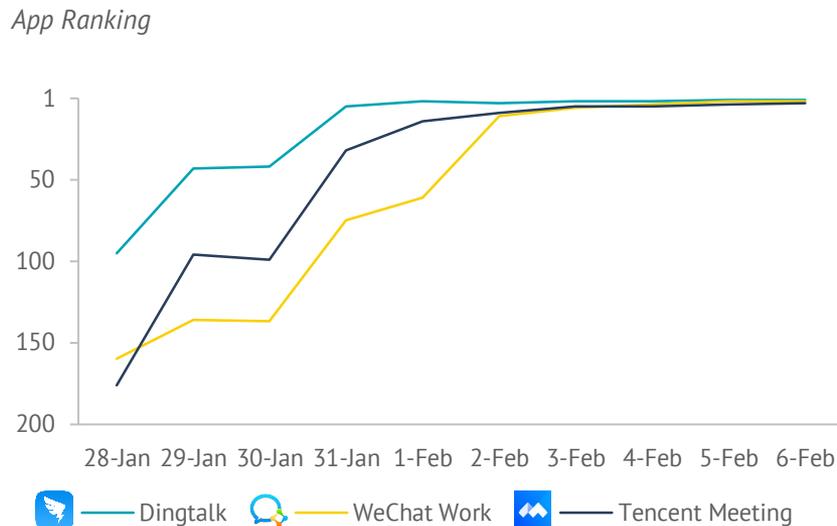
Work productivity applications saw the single largest surge in adoption, with an increase of over 300mn users, primarily for 3 applications from the two leading internet giants in China.

Monthly Active Users in China by App Category



Work productivity saw the largest increase in monthly active users across all app categories – an increase of 308mn users (nearly the population of the US).

Ranking of Most Downloaded iOS Apps in China



In a span of 10 days, three work productivity apps – DingTalk (by Alibaba), WeChat Work (by Tencent), Tencent Meeting (by Tencent) – became the top-3 most downloaded iOS apps in China.



1 Lasting Impact of COVID-19 on China's Tech Sector

The effects of the coronavirus outbreak will accelerate China's digital infrastructure plans with significant contribution from both the central government and tech sector.

In April 2020, the Ministry of Industry and Information Technology announced plans to accelerate digital infrastructure development along five themes.



Building a strong infrastructure network

- Speed up 5G infrastructure for broader network coverage, especially in industrial clusters and cities
- Accelerate the development of an industrial internet
- Develop new intelligent computing facilities and data centers



Applying digital technology into all sectors

- Integrate digital infrastructure with manufacturing, energy, transportation, logistics, agriculture and other areas
- Innovate social governance with the exploration of digital infrastructure, including community management, public services, education, medical care, and smart cities



Enhancing data security

- Promote information infrastructure security, improve network security and monitoring systems, upgrade emergency response mechanisms, and strengthen the security of 5G, industrial internet, data centers, cloud platforms, and other facilities



Strengthening technological innovation

- Enhance R&D support of 5G enhanced technologies and 6G
- Provide favorable funding, policy, and industry environment for innovation



Optimize broader industry development

- Improve and reform laws, regulations, and policies to encourage development
- Lower market barriers and stimulate market vitality
- Build high-quality digital talent with professional training and education

Leading Chinese technology companies have also announced plans and additional investment to speed up industry-wide digital transformation.



- Alibaba Cloud will invest an additional US\$28.2bn in the next three years on its cloud infrastructure to help speed up the digital transformation of businesses in China following the Covid-19 pandemic



- Tencent will focus on three key developments: broader all-around acceptance of online services, demand for internet services from traditional industries, and increased connectivity between different types of industries



- JD.com announced a partnership between US content-delivery-network services provider Cloudflare and its JD Cloud & AI business unit to establish 150 new data centers in mainland China, up from 17 such facilities at present, to help global enterprises do business in China and domestic companies expand overseas



1 Lasting Impact of COVID-19 on China's Tech Sector

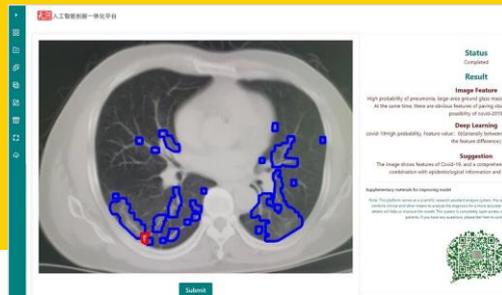
Many new technologies have played an important role in containing the coronavirus outbreak, resulting in more application use cases and further development of these emerging technologies.

Big Data



China implemented a national initiative in Feb 2020 to assign residents colored QR codes to determine whether they have to be quarantined. The color-based system is based on factors like travel history, duration of time spent in an outbreak-stricken area, and relationships to potential carriers of the virus.

Artificial Intelligence



Yitu Technology (leading Chinese AI start-up), Huawei, and Alibaba are offering AI-backed services to help analyze the computerized axial tomography (CAT) scans used by hospitals to diagnose patients suspected to have the coronavirus. Usually, it takes a doctor from 5 to 15 minutes to analyze a CAT scan of one suspected patient, which could include more than 300 images, to come up with a clinical diagnosis, whereas Alibaba said its new algorithm can complete the recognition process within 20 seconds, alleviating pressure on hospitals.

5G



The Huoshenshan and Leishenshan Hospitals were built in 10 and 12 days respectively. The hospitals' design plans were produced in 24 hours and construction drawings in only 60 hours, with 5G enabling hundreds of designers to collaborate simultaneously. In addition, 5G remote consultation systems enabled medical experts in Beijing to work with front-line medical staff in Wuhan.



1 Lasting Impact of COVID-19 on China's Tech Sector

The coronavirus has also accelerated digitalization across various sectors, which will likely have longer term impact.

Examples of accelerated digitalization

Potential lasting impact



Education

- **Online learning:**
 - More than 50 million students across 30 provinces attended classes on DingTalk, Alibaba's enterprise messaging app, on the first day of the semester on Feb 10
 - Online classroom service provider EEO's platform, ClassIn, used to host about 200,000 students daily before the epidemic but now sees an average of two million students a day
- **New formats of instruction:** China's prestigious schools like Tsinghua University offered online courses to anyone on short video app Douyin during the outbreak

- Higher adoption of traditional + online teaching curriculums
- Democratization of education resources for a large number of users at lower cost



Healthcare

- **Online patient consulting:**
 - Ping An Good Doctor, China's largest healthcare platform, received 10x sign-ups between 22 January to 6 February, compared with the same period in 2018
 - Tencent Trusted Doctors offered online consultation to Wuhan residents, quadrupling its consultations during the first five days of the Lunar New Year, compared with the same period last year
- **Knowledge sharing:** The Global MediXchange for Combating COVID-19 (GMCC) program was established by the Alibaba Foundation and Jack Ma Foundation to facilitate sharing of best practices and knowledge for fighting the pandemic among medical professionals around the world in real-time in 11 languages

- More experimentation and adoption of internet hospital and online pharmacy services



Recruitment

- **Video interview products:**
 - Liepin.com, one of China's biggest career development platforms with 450,000 corporate customers and 150,000 certified headhunters, launched its video interview product Duomian in March
 - BOSS Zhipin, another major Chinese online recruitment platform, also upgraded its basic video interview function in March to support group interviews
- **Virtual job fairs:** Alipay launched a virtual job fair featuring around 60,000 employers on March 23

- Improved efficiency in hiring processes
- First-round job interviews done via video as the norm



2

China's Accelerated Self-reliance for Tech

The US-China trade war and the sanctions on China's preeminent technology company, Huawei, have intensified global competition in technology and raised the importance of technological independence. For these reasons, companies in China are increasing their self-reliance, with semiconductors being the biggest industry to watch.



2 China's Accelerated Self-reliance for Tech

China's trade war with the United States, which has been underway for at least two years, set alarm bells ringing in Beijing, and policymakers have put the development of home-grown cutting-edge technology at the top of their agendas.

July

US places 25% duties on around US\$34bn of imports from China, including cars, hard disks, and aircraft parts. China retaliates by imposing a 25% on 545 goods originating from the US worth US\$34bn, including agricultural products, automobiles, and aquatic products.

September

US places 10% taxes on US\$200bn of Chinese imports. China responds by placing customs duties on US\$60bn of US goods.

May 10

After trade negotiations break down, the US increases tariffs on US\$200bn worth of Chinese goods from 10% to 25%. China responds by announcing that it will increase tariffs on US\$60bn worth of US goods from June 1.

January

China and the US sign a phase one trade deal. China agrees to buy an additional US\$200bn of American goods and services over the next two years.



2018

2019

2020

August

Washington imposes 25% tariffs on another US\$16bn of Chinese goods, including iron and steel products, electrical machinery, railway products, instruments, and apparatus. China responds by applying 25% tariffs on US\$16bn of US goods, including Harley-Davidson motorcycles, bourbon, and orange juice.

December

Xi Jinping and US counterpart Donald Trump agree to a ceasefire at the G20 summit in Argentina, with the US suspending a tariff from 10% to 25% on US\$200bn of Chinese goods that was due to come into force on January 1. China suspends tariffs on US-made cars and car parts for three months from January 1, and also resumes its purchase of US soybeans.

May 15

US Department of Commerce announces the addition of Huawei to its "entity list", which effectively bans US companies from selling to the Chinese telecommunications company without approval.

May 16

President Xi Jinping declares "Technological innovation is the root of life for businesses... Only if we own our own intellectual property and core technologies, then can we produce products with core competitiveness and [we] won't be beaten in intensifying competition."

May

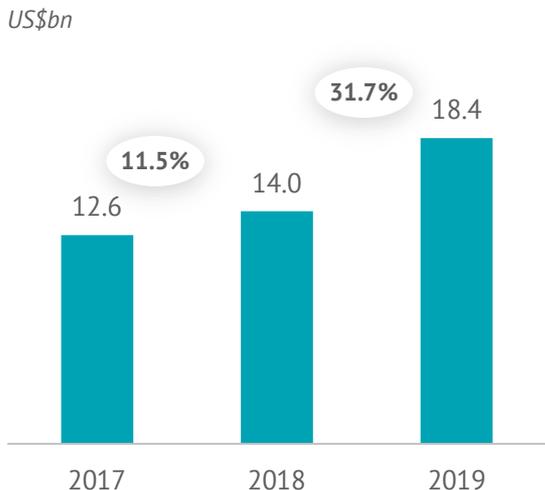
The US Commerce Department announced new restrictions on Huawei's ability to develop semiconductors using American technologies. The new US export control rule could be Washington's most damaging attack yet against Huawei.



2 China's Accelerated Self-reliance for Tech

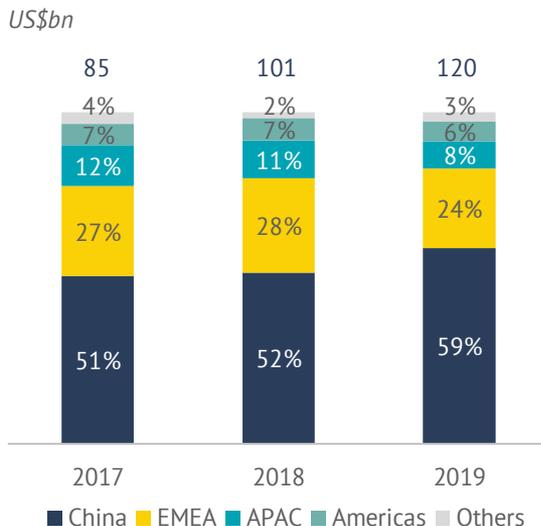
As the prime case example, Huawei, China's leading telecom company and world's largest telecom equipment supplier, has pivoted its strategy towards self-reliance and doubled down on research and development.

Huawei R&D Investment



In 2019, Huawei's R&D investment jumped nearly 32% from the previous year to almost US\$19bn, which is 16% of its annual revenue.

Huawei Revenue by Region



Huawei has also significantly increased its revenue from China, from US\$52bn (51.6% of total) in 2018 to US\$71bn (59% of total) in 2019.

Huawei's Moves to Self-reliance

- In August 2019, Huawei announced plans to invest US\$1.4bn in a massive new R&D center in Shanghai, estimated to house 30,000 to 40,000 employees
- Also in August 2019, Huawei officially announced its homegrown smartphone operating system – Harmony OS – to be used if it loses access to the Android operating system under a US trade ban
- Over 90% of Huawei phones in China now use processors designed by HiSilicon, the semiconductor company fully owned by Huawei (HiSilicon's Kirin smartphone processor is considered to be on par with those designed by Apple and Qualcomm)

However, the new US export control rule on Huawei would effectively restrict HiSilicon from manufacturing leading edge chips.

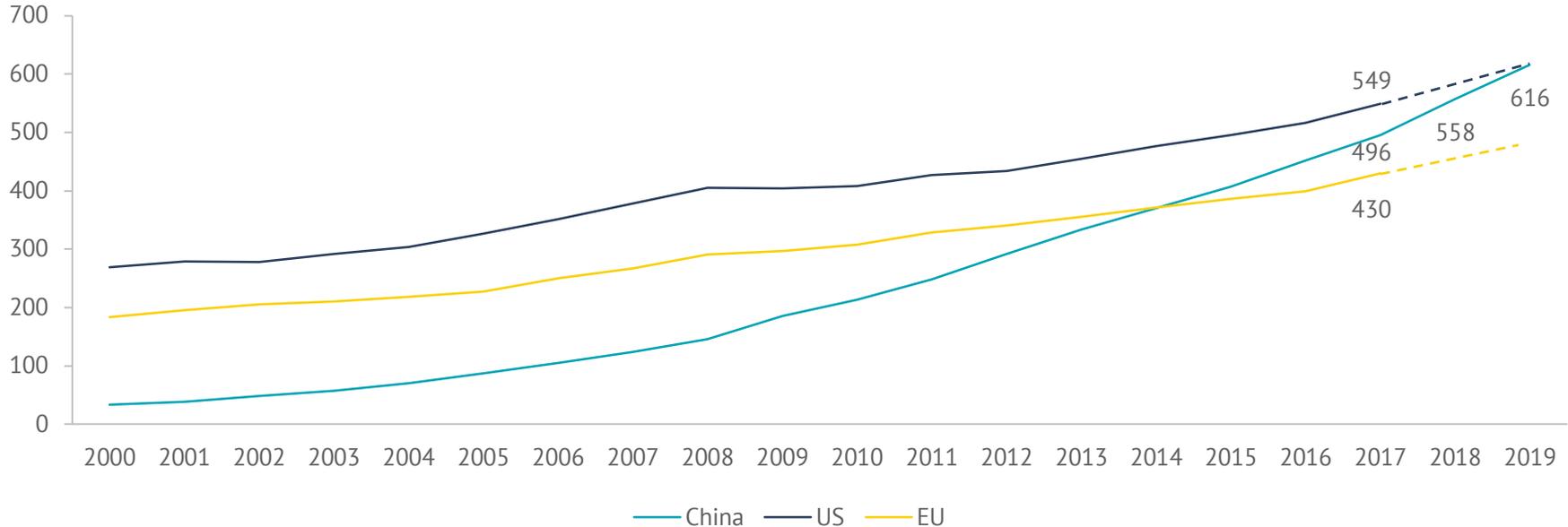


2 China's Accelerated Self-reliance for Tech

By some measurements, China may have pulled ahead of the US in R&D spending this year.

Gross Domestic Expenditure on R&D by Country

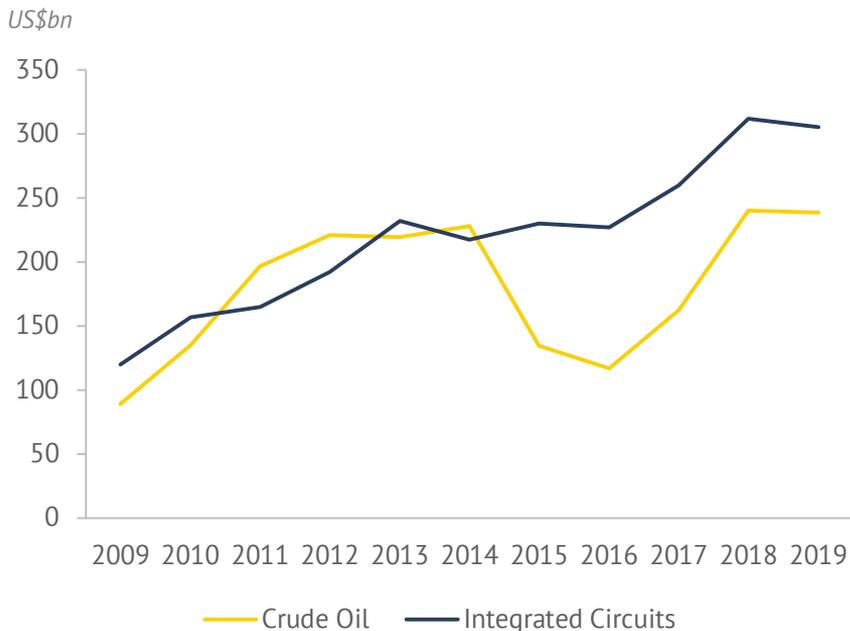
US\$bn (Purchasing Power Parity)



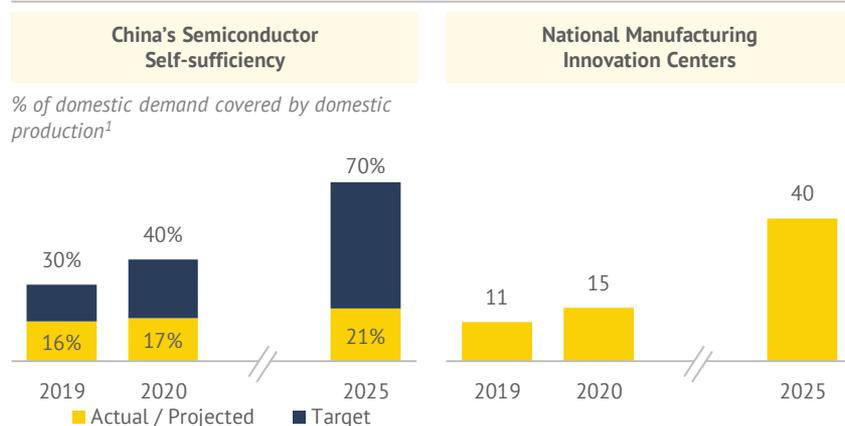
2 China's Accelerated Self-reliance for Tech

China remains dependent on foreign players for high-end integrated circuits. The desire to cut reliance on foreign chips and become a global leader in the semiconductor industry has never been stronger in Beijing than it is now.

Since 2015, integrated circuits have topped crude oil to become the largest category of Chinese imports for five years in succession.



China has set ambitious targets for its semiconductor industry but at its current pace, it may fall short of its self-sufficiency goal.



China is aiming to increase its reliance on domestic production for semiconductors to 70% by 2025. The state-backed China Integrated Circuit Industry Investment Fund, also known as the country's "Big Fund", raised US\$29bn last year for further development of China's home-grown semiconductor industry. China also announced plans to expand its national manufacturing innovation centers to 40 from 15 today. Nevertheless, the combination of China's undeveloped base in chip production and the increasing difficulty of sourcing chip making equipment from the US will make it challenging for China to become self-sufficient in integrated circuits in the near term.

¹Percentage figures include manufacturing plants built by foreign semiconductor companies in China
Source: SCMP Reporting & Analysis, Ministry of Finance, Ministry of Industry and Information Technology, IC Insights



2 China's Accelerated Self-reliance for Tech

Although most industry experts believe China is five to ten years behind leading semiconductor manufacturers, some see a chance to close the gap with AI chips.

The challenge?

- China lacks 80 kinds of core parts and components, which it must currently source from other countries
- In addition, China still lacks 20 key technical materials and 30 advanced technology processes
- Leading semiconductor companies in the US and Taiwan are two to three generations of technology ahead of China, which equates to roughly five to ten years of research and development

The solution?

- AI chips, sometimes referred to as AI accelerators, refers to a new generation of microprocessors which are specifically designed to process AI tasks faster, using less power
- AI chips can offer superior performance over conventional ICs even when manufactured using older (and cheaper) technology and equipment that are widely available in China, a boon to the country's push for self-reliance in core technology



A chip designed by Huawei's subsidiary company HiSilicon

Who's leading the development in China?

China has 26 entities focused on AI chip design and development, second only to the US with 55.



- Alibaba, the market leader in cloud computing, last year set up a chip subsidiary called T-head (or Pingtougou in Mandarin, a nickname for the honey badger) to make its own AI inference chips
- In July 2019, it unveiled its first processor – the Xuantie 910 – that can be used in fields including 5G, AI, and autonomous driving
- In September 2019, Alibaba launched its AI chip called Hanguang 800, which speeds up machine-learning tasks on its platforms by 12x



- In August 2019, Huawei launched the Ascend 910, calling it “the world’s most powerful AI processor” that can help to train AI models, going up against global leaders like Nvidia and Google



- In August 2019, a group of researchers from Tsinghua University in Beijing created the Tianjic chip, a hybrid processor that has the architecture of a brain-inspired neuromorphic chip but can run algorithms for deep learning at the same time
- The chip caused a stir in the industry and was held up as China's breakthrough in advanced chip design and artificial general intelligence, in which machines can comprehend and learn the same way humans can



- Founded in 2015, Horizon Robotics is an AI chip developer valued at US\$3bn in its latest fundraising round
- Its Journey 2 is the first automotive-level AI chip in China and has entered mass production



- Founded in 2016, Cambricon is China's fastest growing AI chip unicorn planning to IPO this year

2 China's Accelerated Self-reliance for Tech

Companies ranging from semiconductor manufacturers to electronics makers will continue to be supported by a government push for self-reliance, and the market has reacted favorably so far.

Out of the 10 best-performing stocks on the CSI 300¹ in 2019, four were technology companies.



Will Semiconductor, a supplier of integrated circuit products for telecommunications and electronics for cars, surged 390% last year, taking the No. 1 spot. YTD, the stock price has grown 39%.



Luxshare Precision Industry, which specializes in the design and manufacturing of electronic connectors, increased its share value by 344% in 2019. YTD, the stock price has grown 70%.



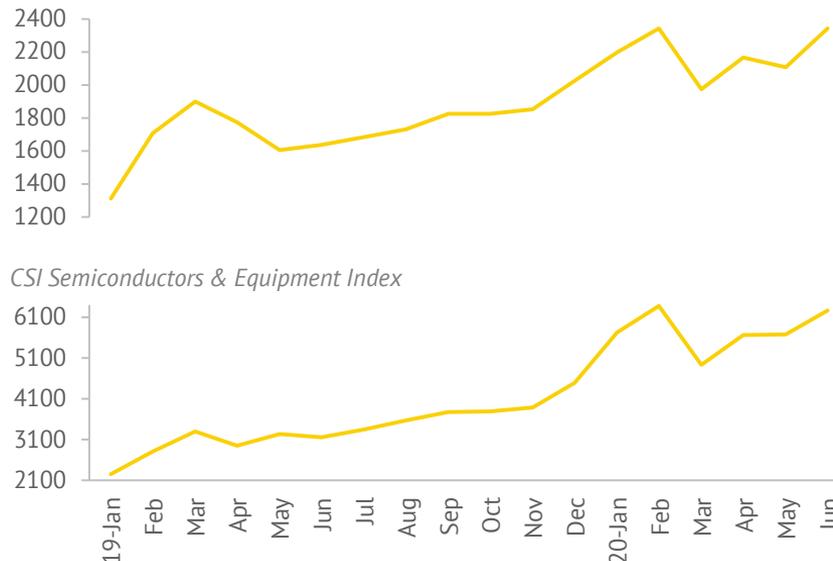
Goertek, a supplier of consumer electronics products to giants such as Apple, jumped 299% in 2019. YTD, the stock price has grown 32%.



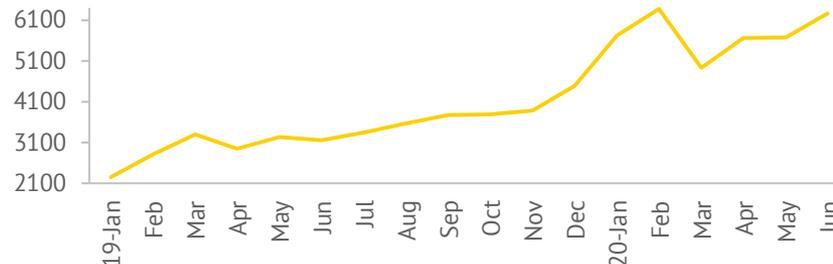
GigaDevice Semiconductor, which makes flash chips, jumped by 193% in 2019. YTD, the stock price has grown 56%.

Despite the negative impact of the coronavirus, the tech sector continues to benefit, driven by domestic demand, the government push for self-reliance, and 5G development.

CSI Technology, Media, and Telecom Index



CSI Semiconductors & Equipment Index



¹Index of the top 30 stocks traded on the Shanghai Stock Exchange and the Shenzhen Stock Exchange
Source: SCMP Reporting & Analysis, Centre for Data Innovation, Bloomberg



3

The Year of Mass Adoption for 5G

China's 5G market is expected to hit US\$70-85bn in 2020 with an estimated 160-175mn 5G subscribers. A massive infrastructure push, the introduction of moderately-priced 5G phones from domestic players, and receptive businesses and consumers will drive significant adoption of 5G this year.

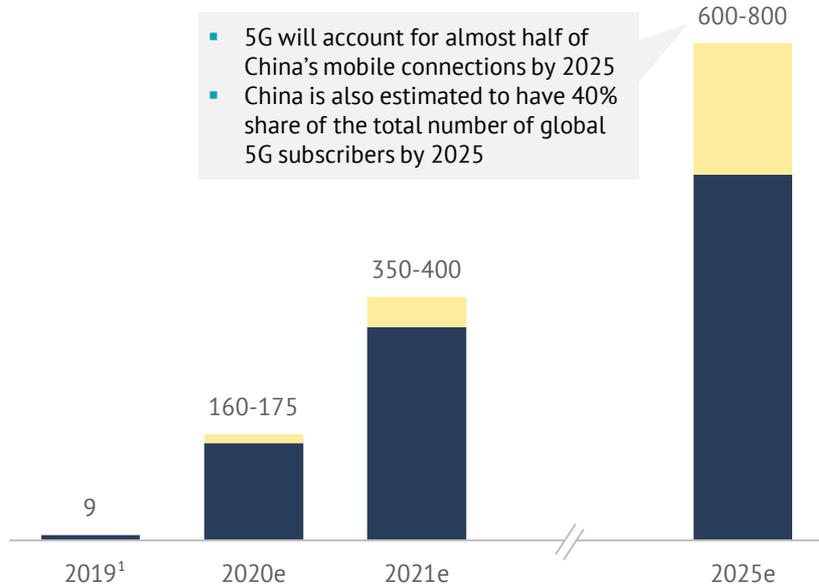


3 The Year of Mass Adoption for 5G

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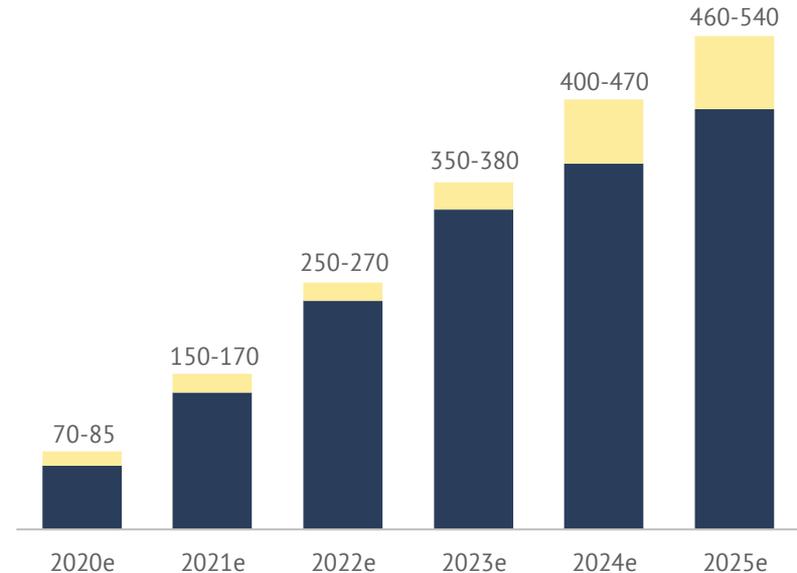
5G Subscribers in China

Mn subscribers



Estimated Market Size of the 5G Market in China, 2020-2030

US\$bn



¹Oct 2019 figures for China Mobile, China Telecom, and China Unicom
Source: SCMP Reporting & Analysis, China Academy of Information and Communications Technology, GSMA, iResearch, Company filings



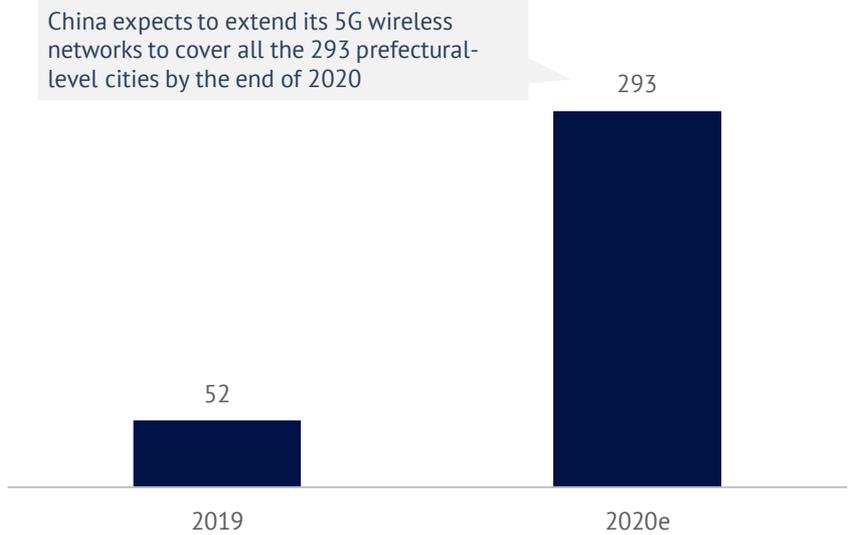
3 The Year of Mass Adoption for 5G

A massive infrastructure push this year, worth US\$25bn and nearly 500k additional 5G base stations, will potentially let China achieve 5G coverage across all 293 of its prefectural-level cities by year end.

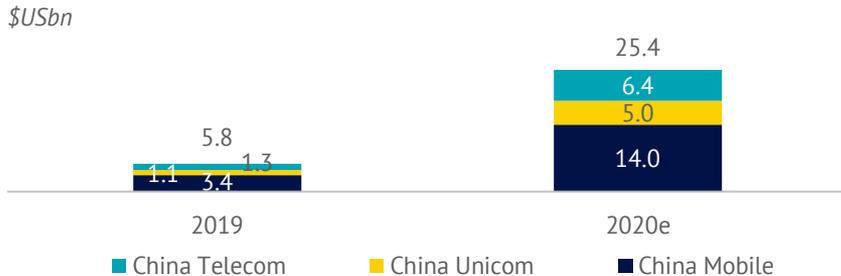
5G Base Station Installations



Number of Cities in China with 5G coverage



5G Capex Investment



3 The Year of Mass Adoption for 5G

The introduction of moderately-priced 5G smartphones from domestic players this year will drive further adoption of 5G. By year end, we expect over 50 5G smartphone models to be available in the market.



Honor 30 5G

Launch: Apr 2020
Starting price: CNY2999



Mi 10 Lite 5G

Launch: May 2020
Starting price: CNY2099



Z6 5G

Launch: Feb 2020
Starting price: CNY2298



A92s 5G

Launch: Apr 2020
Starting price: CNY2199



Nubia Play 5G

Launch: Apr 2020
Starting price: CNY2399

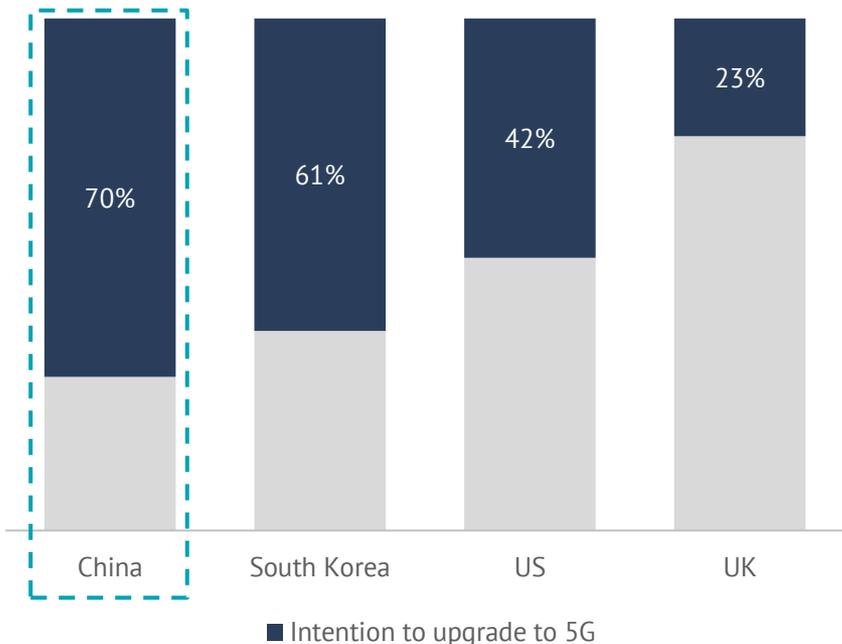
Huawei and Xiaomi have also both announced that they will launch an ultra-cheap CNY999 5G smartphone by the end of 2020.



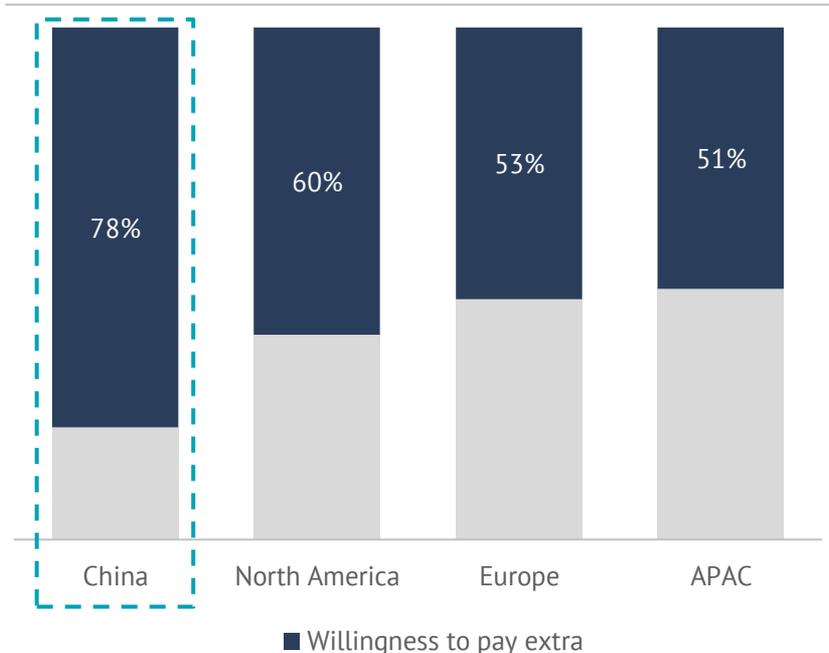
3 The Year of Mass Adoption for 5G

Chinese consumers and businesses are also racing ahead in terms of interest level and acceptance of 5G as they realize the benefits.

Chinese consumers have the highest intention to upgrade to 5G.



Chinese consumers have the highest willingness to pay more to upgrade to 5G.



3 The Year of Mass Adoption for 5G

5G applications for both consumer and industrial use cases are already in play and soon-to-be widely adopted.

	Select 5G use cases	Potential implication
 <p>Rich Communication Services (RCS)</p>	<ul style="list-style-type: none"> China's three biggest telecoms carriers are joining forces to introduce a 5G-based messaging service in 2020 to replace traditional SMS messages Under 5G-based RCS, users will be able to exchange text messages, photos, video, and audio directly via the message window of their phones, without needing to download an app All 5G devices made by smartphone makers will support 5G RCS 	<ul style="list-style-type: none"> Development of an advanced messaging service, competing directly with WeChat More opportunities for smartphone and telecoms equipment vendors
 <p>Smart Tourism</p>	<ul style="list-style-type: none"> Several five-star hotels in China, including InterContinental, have announced strategic cooperation agreements to build 5G smart hotels, deploying reception robots, 4k video streaming, cloud PCs, and 5G conference centers Huawei has teamed up with China Mobile to build three base stations on Mount Everest, with the highest tower built at 6,500 meters, providing 5G coverage to the summit 	<ul style="list-style-type: none"> New models of tourism (e.g. augmented/virtual reality tours) and service experiences to attract more visitors
 <p>Smart Agriculture</p>	<ul style="list-style-type: none"> Hundreds of farms around China have adopted new 5G agricultural technology At the Wuzhen International Internet Agriculture Park, intelligent greenhouses offer ideal temperature and humidity settings, customized nutrition fed to plants, and even 5G-linked pest and disease control systems Daoji, an agricultural services company in China, has signed a contract with Tencent-backed fresh food e-commerce platform MissFresh and will supply six tons of tomatoes to the platform every day from May 2020 	<ul style="list-style-type: none"> Increase in crop output (2-3x) Reduction in manpower
 <p>Smart manufacturing</p>	<ul style="list-style-type: none"> Haier, China's leading home appliances company, partnered with China Telecom to develop a 5G smart manufacturing facility featuring unmanned forklifts, computer vision inspections for raw materials at every checkpoint, and production safety monitoring Xiangtan Iron & Steel, the largest state-owned enterprise in Hunan, partnered with China Mobile and Huawei to develop a 5G smart plant, where out of 400 cranes, 5% of cranes were fully autonomous and 25% were semi-automatic 	<ul style="list-style-type: none"> Further transformation from remote control, to semi-automatic, to fully autonomous operations



4

Live-streaming's Third Phase in China

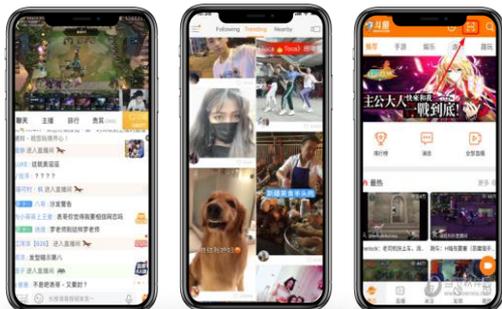
Live-streaming in China has gone through an evolution. From a focus on gaming, sports, and teen culture, to an exploratory channel for shopping and ecommerce, to what is now a required marketing channel across industries, new and old. And today, you can expect to see nearly any content you can think of live-streamed.



4 Live-streaming's Third Phase in China

Live-streaming in China has evolved from a niche market to an ecommerce channel to a multifaceted content tool now also adopted by traditional industries.

Phase 1: 2012-2017



Phase 2: 2017-2019



Phase 3: 2019-Present



Primary content

Gaming, Sports, Teen Culture



Shopping and ecommerce, particularly for fast-moving-consumer-goods / Online companionship (e.g. streaming normal daily activities)



Shopping and ecommerce for traditional industries / Nearly any content you can think of (including selling a US\$5.6mn rocket)

Land-scape

Entrance of numerous live-streaming platforms competing for users and market share

Consolidation of market players with smaller platforms exiting the market

Established leaders by vertical (gaming, talkshows, sports, ecommerce, concerts)

Major players

Huya, Douyu, YY, Momo

Douyin, Kuaishou, Taobao Live, Bilibili

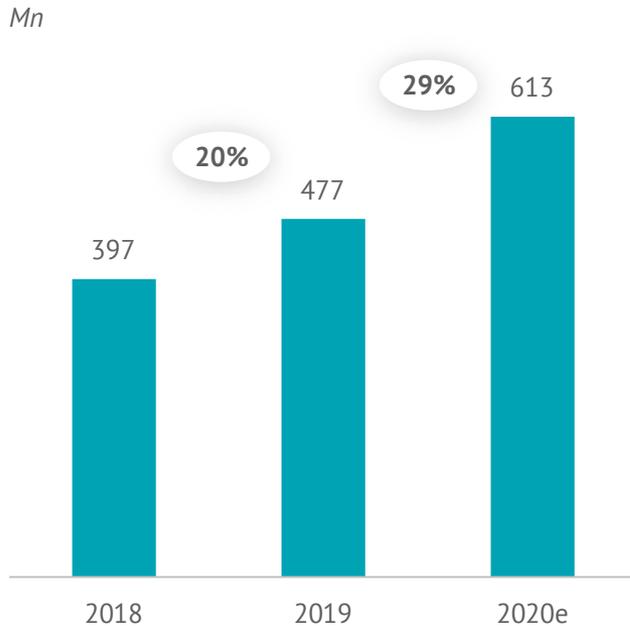
Douyin, Kuaishou, Taobao Live, Bilibili, Little Red Book



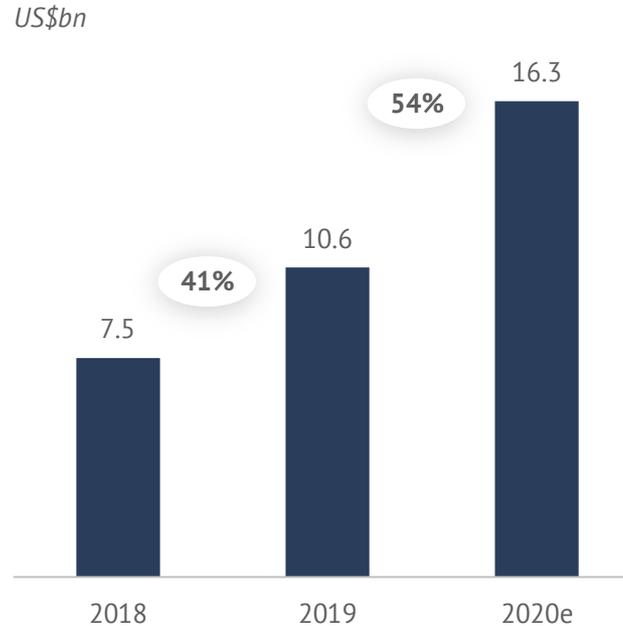
4 Live-streaming's Third Phase in China

China's live-streaming market continues its healthy growth and is expected to increase to 613mn users and US\$16.3bn in value by year end.

Live-streaming Users in China



Live-streaming Market Size in China



- Year-on-year growth in China's live-streaming users has increased, from 20% to 29% this year
- The market value per user has steadily increased over the last 3 years, from US\$19.0 per user in 2018 to US\$22.3 per user in 2019 to an expected US\$26.6 per user in 2020



4 Live-streaming's Third Phase in China

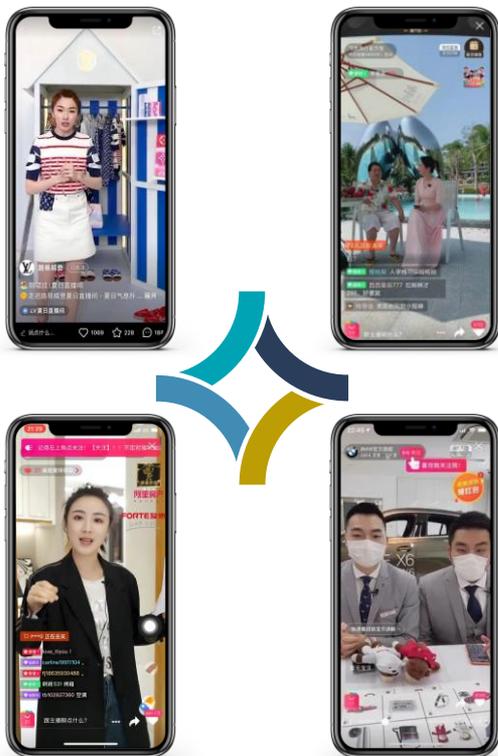
Spurred by the coronavirus and lockdowns, live-streaming has been adopted by traditional industries as a major new and effective marketing channel.

International Luxury Goods

- Louis Vuitton became the first international luxury brand to host a live streaming session on Little Red Book – the Chinese social media and ecommerce platform
- The live stream attracted more than 880,000 views on the platform and was praised for its candid approach to appeal to the younger audience on Red Book
- Louis Vuitton now has more than 164,000 followers on the platform

Real Estate

- Taobao Live attracted over 5,000 estate agents from over 500 brokers, across nearly 100 cities in China
- During Feb 12-17, some 2 million users watched real estate live-stream events on Taobao Live
- Beijing, Jiangsu, and Shandong were the top three areas for the sell side, as counted by the number of live-stream hosts



Travel services

- Pinduoduo, best known as the ecommerce platform that allows group buying deals, held a 7-hour live streaming session for an ancient town in Hunan Province on April 26 with over 350,000 people joining the “virtual tour”

Automotive

- The number of live-streaming sessions involving the auto industry jumped 15X in Mar compared to Jan; the peak during this period saw 7,000 live-streaming sessions in a single day, according to the China Automobile Dealers Association
- 23 global car brands, including BMW and Audi, leveraged Taobao Live to sell cars, with the platform hosting around 100 live-stream events featuring automobiles during the last two weeks of February 2020

4 Live-streaming's Third Phase in China

In addition, tech industry leaders and entrepreneurs have become live-streaming stars, eager to cater to the vigorous appetite for online shopping in the world's second largest economy.

Dong Minzhu
Chairwoman of Gree



Gree Electric Appliances chairwoman Dong Mingzhu, known as the mainland's “home appliances queen”, sold 310 million yuan (US\$43.8 million) of goods in a three-hour live streaming event on short video platform Kuaishou. The event, which started at 7:30pm, attracted 16 million viewers in total and saw Dong introduce an air purifier aimed at preventing the spread of Covid-19 and a juicing cup.

James Liang Jianzhang
Co-Founder and Chairman of Trip.com



James Liang wore a traditional Chinese gown during an online streaming that helped China's largest tourism platform generate transactions valued US\$3.84mn within an hour. Liang's live streaming appearance attracted 1.2 million viewers and specifically promoted discounted tourism products in Huzhou, Zhejiang Province.

Luo Yonghao
CEO and Founder of Smartisan



Luo Yonghao, whose failing smartphone venture Smartisan left him bankrupt last year, took a shot at redemption when his three-hour live-streamed campaigns on ByteDance's popular short video app Douyin, the Chinese version of TikTok, became a viral hit. He sold 110 million yuan (US\$15.5) worth of products on April 1, when about 48 million Douyin users tuned in.

5

Chinese Tech Companies Listing Back Home

Chinese companies, particularly tech, are increasingly listing on domestic exchanges. This trend is driven by two primary drivers: 1) favorable regulatory and policy initiatives, attracting Chinese technology companies back home, and 2) souring US-China relations, exacerbated by a string of accounting scandals for Chinese companies listed in the US.



5 Chinese Tech Companies Listing Back Home

Exchanges in Hong Kong and mainland China are attracting more tech companies into its domestic capital market with favorable policies, and results so far have been promising.

The HK stock exchange plans to attract tech listings by expanding dual-class shares structures.

- The reform paves the way for more than 38 US-listed mainland tech giants, including Tencent Music, to list in HK
- In June 2020, NetEase completed its secondary offering in HK, becoming the second major US-listed tech company after Alibaba to raise funds in HK
- A week later, JD.com completed its secondary listing, raising US\$3.8bn in capital
- In May 2020, across the eight new listings on the main board, all but one closed higher than their IPO prices on the first trading day

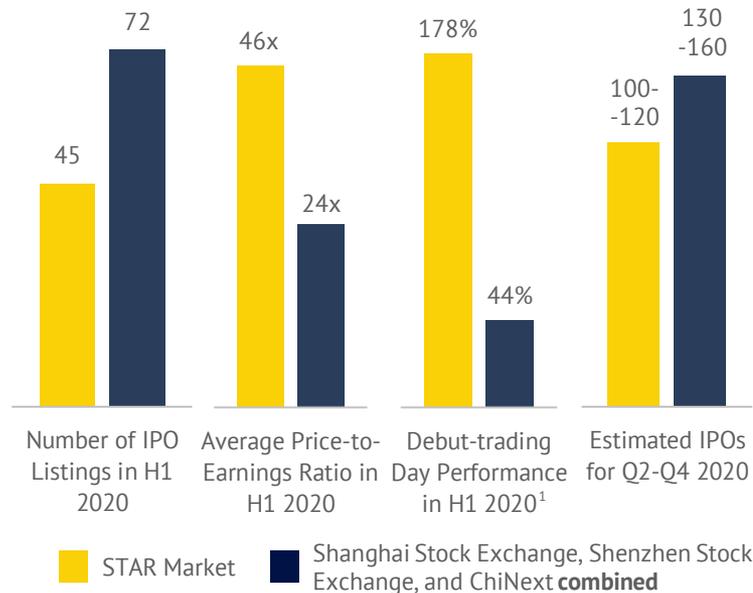
In June 2019, China launched its new Science and Technology Innovation Board, or “STAR market”, which is being dubbed China’s Nasdaq-style market.



The STAR market is designed to focus on companies in high-tech and strategic emerging sectors such as new-generation information technology.

- Since the launch of the new board, 130+ Chinese technology companies have listed
- Unlike other domestic boards, the Sci-Tech innovation board allows more market-based pricing, prioritizes information disclosure, and tightens delisting rules by piloting the registration-based IPO system
- Trading rules are also different, with no price change limits in the first five trading days
- The board allows stocks to rise or fall by a maximum of 20% in a day, higher than the 10% limit for most stocks on other boards

The STAR market has outperformed traditional boards in China.



¹Mainland Chinese IPO shares, which are usually massively oversubscribed in the primary market, typically ensure a 44% gain on their debut as their price rockets up to hit the ceiling put in place by the exchange watchdog
Source: SCMP Reporting & Analysis, Deloitte



5 Chinese Tech Companies Listing Back Home

Unsteady US-China relations, exacerbated by a string of accounting scandals for Chinese companies listed in the US, may also further impact the decisions of Chinese companies on where to raise capital.

US-China trade tensions have impacted Chinese listings in the US.



Threat of delisting Chinese firms from US markets

- In Sep 2019, sources reported that the Trump administration was considering delisting Chinese companies from US stock exchanges
- Earlier in June 2019, US lawmakers introduced a bill to force Chinese companies listed on American stock exchanges to submit to regulatory oversight



Hesitancy from prospective Chinese companies

- IPO bankers expect a pause in new Chinese listings in the US in the near term as companies, advisers and investors wait for more clarity
- Year-to-date, only 12 Chinese companies have listed in the US, compared with 38 in 2019 and 42 in 2018



Active delisting from some

- SMIC, China's biggest maker of semiconductors, withdrew from the NYSE in June 2019, ending its 15-year US listing
- SMIC now plans to raise more than US\$2.8bn on the domestic STAR market

Accounting scandals emerged from two high-profile companies, Luckin Coffee and TAL Education, in the span of a week. Several other Chinese companies have also come under scrutiny.



- Luckin Coffee, a Chinese coffeehouse chain with more stores in China than Starbucks, debuted on the Nasdaq in May 2019 and had a 47% surge in its stock price the day after its IPO
- Earlier in Jan 2020, Muddy Waters Research published a report claiming Luckin Coffee had falsified financial and operational figures; Luckin denied all allegations
- On Apr 2, Luckin Coffee announced that an internal investigation found that its Chief Operating Officer had falsified over \$300mn in sales; on May 12, Luckin Coffee fired both its CEO and COO
- Luckin's market cap, which had been as high as \$10bn in early March, had fallen to \$1.1bn before the company's shares were suspended from trading on Apr 6



- TAL Education Group, a K-12 tutoring business listed on the NYSE, also admitted to inflated sales at one of its business segments worth hundreds of millions of dollars
- TAL shares plunged by as much as 28% in after-hours trading



- In April 2020, Nasdaq-listed video streaming platform iQiyi was accused by Wolfpack Research of inflating 2019 results and user numbers
- iQiyi denied the allegations, saying the report contains "numerous errors, unsubstantiated statements and misleading conclusions and interpretations"



- GSX Techedu, another K-12 tutoring business listed on the NYSE, was accused by an American short seller of inflating revenue by 70%
- The company has denied the allegations

Nasdaq is set to unveil new restrictions on IPOs, largely driven by concerns over governance and accounting standards at some Chinese companies. The new rules are reported to include requirements that call for companies from some countries, including China, to raise US\$25mn in their IPO or, alternatively, at least a quarter of their post-listing market capitalization.



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Top Funded Chinese Start-ups: Ecommerce

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	Suning	4,558	Alibaba Group
2	Alibaba Local Services Holding Limited (Eleme and Koubei)	4,000	Ant Group, Alibaba Group, SoftBank Vision Fund, Primavera Capital Group
3	Chehaoduo	3,570	Tencent Holdings, Sequoia Capital, DST Global, GIC, Matrix Partners China
4	JD Logistics	2,500	Tencent Holdings, Sequoia Capital China, Hillhouse Capital Group, K3 Ventures, ICBC International
5	Meicai	1,453	ZhenFund, Tiger Global Management, Shunwei Capital, CMC Capital Group, Hillhouse Capital Group
6	MissFresh E-Commerce	1,362	Tencent Holdings, CICC, Goldman Sachs, Tiger Global Management, China Growth Capital CGC
7	Meituan-dianping	1,070	Alibaba Group, General Atlantic, Sequoia Capital China, Northern Light Venture Capital, Hillhouse Capital Group
8	Huitongda	996	Xiaomi, Alibaba Group, Addor Capital, China Merchants Bank, New Horizon Capital
9	Wanda E-Commerce	975	Tencent Holdings, WANDA Group, Baidu, Centec Networks, Xude Rendao
10	VANCL	612	Jun Lei, Ceyuan Ventures, Qiming Venture Partners



Top Funded Chinese Start-ups: Content & Media

Rank	Company	Total Funding (US\$m)	Selected Investors
1	ByteDance	7,405	Kohlberg Kravis Roberts, General Atlantic, Weibo, SoftBank, Qiming Venture Partners
2	Kuaishou Technology	4,370	Tencent Holdings, DCM Ventures, Sequoia Capital China, Temasek Holdings, Morningside Venture Capital
3	Shanghai Canxing Cultural and Broadcast Company	3,299	Tencent Holdings, Alibaba Group, ZHEFU Holding
4	Focus Media	2,242	Alibaba Group, Threshold, SoftBank Capital, CDH Investments, WI Harper Group
5	Bilibili	2,110	Tencent Holdings, Alibaba Group, Qiming Venture Partners, Sony, Tiger Global Management
6	NetEase Cloud Music	1,409	Alibaba Group, General Atlantic, CICC, Shanghai Media Group, Baidu
7	Le Sports	1,359	HNA Group, WANDA Group, Prometheus Capital, Fortune Link, YF Capital
8	Youku	1,340	Alibaba Group, Maverick Ventures, Sutter Hill Ventures, Farallon Capital Management, Chengwei Capital
9	Miaopai	775	Weibo, YG Entertainment, Shanghai Media Group, Kleiner Perkins, Sequoia Capital China
10	PPTV	707	Suning.com, Threshold, SoftBank Capital, SAIF Partners, BlueRun Ventures



Top Funded Chinese Start-ups: Social & Messaging

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	Zhihu	892	Tencent Holdings, Qiming Venture Partners, Goldman Sachs, Kuaishou Technology, Sogou
2	Hupu	338	ByteDance, CICC, Greenwood Asset Management, Haitong Kaiyuan Investment, Quansheng Investment
3	Maimai	300	DST Global, DCM Ventures, IDG Capital, Morningside Venture Capital
4	Baihe	253	Mayfield Fund, New Enterprise Associates (NEA), GSR Ventures, Zero2IPO Capital, Dahu Aquaculture
5	Zuiyou	215	Xiaomi, Qiming Venture Partners, GGV Capital, CMC Capital Group, SIG China (SIG Asia Investments)
6	Getui	166	SAIF Partners, WI Harper Group, China Minsheng Bank, Haitong Securities
7	Blued	132	DCM Ventures, Shunwei Capital, CDH Investments, Crystal Stream Capital, Vision Knight Capital
8	Kaixin001	124	Qiming Venture Partners, Northern Light Venture Capital, Ceyuan Ventures, Tencent Industry Win-Win Fund
9	Yuntongxun	89	Sequoia Capital China, Trustbridge Partners, V Fund Management, Prospect Avenue Capital, Steppe Capital
10	Baike.com	66	Northern Light Venture Capital, Threshold



Top Funded Chinese Start-ups: Artificial Intelligence

Rank	Company	Total Funding (US\$m)	Selected Investors
1	SenseTime	3,260	Alibaba Group, CICC, Silver Lake Partners, Qualcomm, Tiger Global Management
2	MEGVII	1,357	Ant Group, Alibaba Group, Qiming Venture Partners, Macquarie Group, Sinovation Ventures
3	UBTech Robotics	940	Tencent Holdings, Qiming Venture Partners, Haier, CreditEase, CDH Investments
4	CloudWalk Technology	804	Shunwei Capital, Puhua Capital, China Internet Investment Fund, ICBC International, Haier Capital
5	MiningLamp	786	Temasek Holdings, Tencent Holdings, China Renaissance, Sequoia Capital China
6	Horizon Robotics	700	Intel Capital, ZhenFund, Vertex Ventures, Sinovation Ventures, SK Hynix
7	Pateo	540	Suning.com, Suning Holdings Group, Bank of Shanghai, Red Horse Capital
8	Terminus Technologies	529	JD.com, SenseTime, Iflytek, IDG Capital, WANDA Group
9	Yitu Technology	411	ZhenFund, Sequoia Capital China, Gaorong Capital, ICBC International, Shanghai Pudong Development Bank
10	4Paradigm	375	Lenovo, Agricultural Bank of China, Cisco, Sequoia Capital China, Sinovation Ventures



Top Funded Chinese Start-ups: Smartphones & Smart Devices

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	New Leshi Smart Home	1,679	Tencent Holdings, JD.com, Sunac China Holdings
2	Royole Corporation	1052	Yingke Capital, ZTCH, Warsun Holdings Group
3	Meizu Technology	890	Alibaba Group, Haitong Kaiyuan Investment
4	UIOT	426	Red Star Macalline, Poly Capital, Jin Hao Investment, Xingzao Finance
5	Smartisan	235	Suning.com, PurpleSky Capital, Hejun Capital, Tang Yan
6	Coocaa	218	Tencent Holdings, Baidu
7	Yunding Technology	128	Xiaomi, Shunwei Capital, Fosun International, Red Star Macalline, Midea Group
8	Lumi United Technology	115	Shunwei Capital, Cathay Innovation, Joy Capital, Cathay Capital, Lanting Capital
9	DJI	105	Accel, Sequoia Capital China, Lighthouse Capital Management
10	SmartMi International Limited	50	GIC, Shunwei Capital, Morningside Venture Capital



Top Funded Chinese Start-ups: Autonomous Cars

Rank	Company	Total Funding (US\$m)	Selected Investors
1	Xiaopeng Motors	1691	Xiaomi, Alibaba Group, GGV Capital, CICC, IDG Capital
2	WM Motor	1597	Tencent Holdings, Baidu, Sequoia Capital, Ameba Capital, Linear Venture
3	BYTON	1200	Tencent Holdings, Suning.com, Foxconn Technology Group, Tusholdings, Contemporary Amperex Technology
4	LeSee	1080	Lenovo, Shenzhen Capital Group, Legend Holdings, Yingda Capital Management, Macrolink Group
5	Pony.ai	726	IDG Capital, Toyota Motor Corporation, Legend Capital, DCM Ventures, Sequoia Capital
6	DiDi Autonomous Driving	500	SoftBank Vision Fund
7	WeRide.ai	204	Qiming Venture Partners, Alliance Ventures, SenseTime, ABC International, Renault-Nissan-Mitsubishi
8	Momenta	203	Tencent Holdings, GGV Capital, Shunwei Capital, ZhenFund, Sinovation Ventures
9	AutoX	160	ZhenFund, Plug and Play, Alibaba Entrepreneurs Fund, Hong Kong Science and Technology Parks Corporation (HKSTP), Hongzhao Fund
10	Roadstar.ai	140	Shenzhen Capital Group, Green Pine Capital Partners, Glory Ventures, CMB International Capital Corporation, Vision Plus Capital



Top Funded Chinese Start-ups: Fintech

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	Ant Group	22,000	General Atlantic, Sequoia Capital, GIC, Silver Lake Partners, Temasek Holdings
2	JD Digits	5,034	CICC, Sequoia Capital China, COFCO, China Creation Ventures (CCV), Intonation Ventures
3	Du Xiaoman Financial	4,802	The Carlyle Group, TPG, Bank of Tianjin
4	Lu.com (Lufax)	3,015	CICC, Goldman Sachs, Macquarie Group, COFCO, JP Morgan Chase
5	Suning Finance	1,820	Shenzhen Capital Group, GP Capital, BNP Paribas Private Equity, Bank of Nanjing, YF Capital
6	Jiedaibao	694	NA
7	Dianrong	549	GIC, Tiger Global Management, Data Collective DCVC, Standard Chartered Bank, Northern Light Venture Capital
8	CGTZ	521	Shunwei Capital, CMC Capital Group, Guangzhou Yuexiu Industrial Investment Fund, Geo-Jade Petroleum
9	E-Life Financial Services	356	HNA Group, H Capital Advance, The Pacific Securities
10	Tuandaiwang	351	China Minsheng Investment Group, Beijing Yingsheng Innovation Technology, Beihai Hongtai Investment



Top Funded Chinese Start-ups: Online Education

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	Yuanfudao	1,544	Tencent Holdings, IDG Capital, Matrix Partners China, Warburg Pincus, CMC Capital Group
2	Zuoyebang	1,335	GGV Capital, Goldman Sachs, Legend Capital, New Enterprise Associates (NEA), Tiger Global Management
3	VIPKID	1,055	Tencent Holdings, ZhenFund, Matrix Partners, Coatue Management, Sequoia Capital China
4	DaDa	864	TAL Education Group, Tiger Global Management, Warburg Pincus, Oriental Fortune Capital, Loyal VC
5	17zuoye	585	ByteDance, DST Global, ZhenFund, Tiger Global Management, Temasek Holdings
6	Zhangmen	502	Warburg Pincus, Shunwei Capital, CMC Capital Group, Fortune Venture Capital, Qingsong Fund
7	Aixuetang	337	Mooc-CN Education, Huahong Asset, Huayu Investment
8	Knowbox	306	Alibaba Group, TAL Education Group, Baidu Ventures, Bertelsmann Asia Investments, Legend Star
9	Huikedu Group	302	Fosun RZ Capital, China Oceanwide, Xinlongmai Capital, Qianhe Capital, Beijing Huaruan Jinhong Asset Management
10	Gaosi Education Group	286	Tencent Holdings, CICC, Sinovation Ventures, Warburg Pincus, CMC Capital Group



Top Funded Chinese Start-ups: Healthtech

Rank	Company	Total Funding (US\$mn)	Selected Investors
1	WeDoctor	1,021	Tencent Holdings, Qiming Venture Partners, Goldman Sachs, Fosun International, Hillhouse Capital Group
2	JD Health	1,000	JD.com, CICC, Baring Private Equity Asia, CPE
3	Ping An Healthcare Management	1,000	SBI Group, SoftBank Vision Fund
4	United Imaging Healthcare	503	CICC, CMB International Capital Corporation, CITIC Securities, China Life Insurance, SDIC Fund Management
5	Yitu Technology	411	China Industrial Asset Management, GC Capital, ZhenFund, YF Capital, Sequoia Capital China
6	Chemclin	315	Matrix Partners China, Legend Capital, Next47, SAIF Partners, WI Harper Group
7	Jianke	280	Volcanics Venture, HBM Healthcare Investments AG, Crescent Point Energy, ShenZhen GTJA Investment Group, YungPark Capital
8	Haodf.com	278	Tencent Holdings, DCM Ventures, Trustbridge Partners, Ceyuan Ventures
9	Zhangshang Tangyi	260	CICC, IDG Capital, Samsung Ventures, Health 100, SIG China (SIG Asia Investments)
10	Tencent Trusted Doctors	255	Tencent Holdings, Lightspeed Venture Partners, Sequoia Capital China, Lightspeed China Partners, Gaw Capital Partners



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