

An aerial photograph of the Shanghai skyline, featuring the Oriental Pearl Tower on the left and the Shanghai Tower on the right. The city is partially obscured by a thick layer of white clouds, creating a misty atmosphere. The sky is filled with soft, white clouds. The overall color palette is dominated by blues, greys, and whites, with a prominent red rectangular box on the right side containing white text.

Unicorns: Harnessing innovation for hypergrowth

Key themes from the PwC
China Unicorn Survey 2019 and
reflections on what they mean in
light of the COVID-19 crisis

Foreword

Around the world, ‘unicorns’ — privately held start-ups valued at more than US\$1bn — are now a well-established feature of both the economic landscape and innovation ecosystem. Driven largely by technology and backed mostly by venture capital, these dynamic companies generate enormous wealth early in their development phase. Many are in the vanguard of their industry, leading the way in the development and rollout of innovative new technologies and business models. And some will see a good opportunity in the midst of the COVID-19 crisis.

China epitomises this trend. Though the full effect of the coronavirus outbreak on China’s economy is currently unknown, the fact is that — over many years — the country’s fast-growing marketplace and readiness to adopt new technology have made it especially fertile ground for the growth of unicorns. In sectors ranging from transportation to media, Chinese unicorns are now world leaders and more are emerging all the time.

PwC launched its China Unicorn Survey in 2018 to provide a unique annual snapshot into trends, developments, challenges and opportunities in the Chinese unicorn sector. In 2019 we updated the study, which gives us additional insights and a robust basis for annual comparisons.

The findings from our latest study — based on questionnaire responses from executives at more than 120 unicorns in 13 industries and in-depth, face-to-face interviews with more than 20 enterprises — are drawn exclusively from unicorns in China. But they have clear resonance and implications for their peers around the world.

This global relevance is underlined by the extent to which the findings from our China unicorns research are mirrored in PwC’s [23rd Annual Global CEO Survey](#), launched at the World Economic Forum 2020 in Davos. There’s especially clear alignment with the CEO Survey findings from two specific sectors that overlap significantly with unicorns: those from private business CEOs and those from the CEOs of technology, media and telecommunications (TMT) companies.

“Although it is too early to fully gauge the economic impact of COVID-19, it has affected businesses and industries in a profound way and significantly changed the start-up ecosystem. Some companies in sectors such as online learning/education, videoconferencing, remote working, online entertainment, grocery delivery and healthcare are seeing a good opportunity in the midst of the crisis. However, many start-ups are slashing spending to ensure business continuity in a more challenging fundraising environment. The crisis is making start-ups rethink their business models and consider how to build resilience against disruptions. It is also worth noting that the private sector in China has contributed a lot in the battle against the epidemic since the outbreak of the coronavirus. It is critical for enterprises to collaborate with clients and government authorities to navigate the tough times.”

— Elton Huang

Entrepreneurial and Private Business Co-Leader, PwC China

Three thematic areas come to the fore in these distinct yet interrelated research studies. First, the vital importance of **talent** in fuelling and sustaining unicorns' growth — and of **upskilling the workforce** to keep pace with headlong change. Some 83% of the respondents to our China Unicorn Survey rank attracting high-quality and skilled talent as a high-priority growth strategy, up from 77% in 2018.

Second, the massive potential of **fifth-generation (5G) communications technologies**. Thirty-nine percent of our China Unicorn Survey respondents believe 5G technology will have a major impact on their business and product development, up from 34% in 2018, the biggest increase among all emerging technologies.

And third, the fast-evolving area of **digital and cyber**, which offers a rich blend of opportunities to be seized and risks to be managed. Our research shows the proportion of Chinese unicorns experiencing challenges in cybersecurity and data security rose to 26% from 19% in 2018, prompting an intensifying focus on these areas.

In this concise report, we've looked to capture and explore some of the main insights from our China Unicorn Survey 2019, supplemented and supported by findings from our 23rd Annual Global CEO Survey and reflections from our leaders on the impact of COVID-19 on the unicorn market. We hope you find our analysis interesting and informative, and we would welcome any feedback.



Top-line findings



Innovative enterprises worldwide — including unicorns — faced a challenging environment in 2019, owing to the collision of several factors, including economic uncertainty, trade conflicts, and geopolitical tensions.

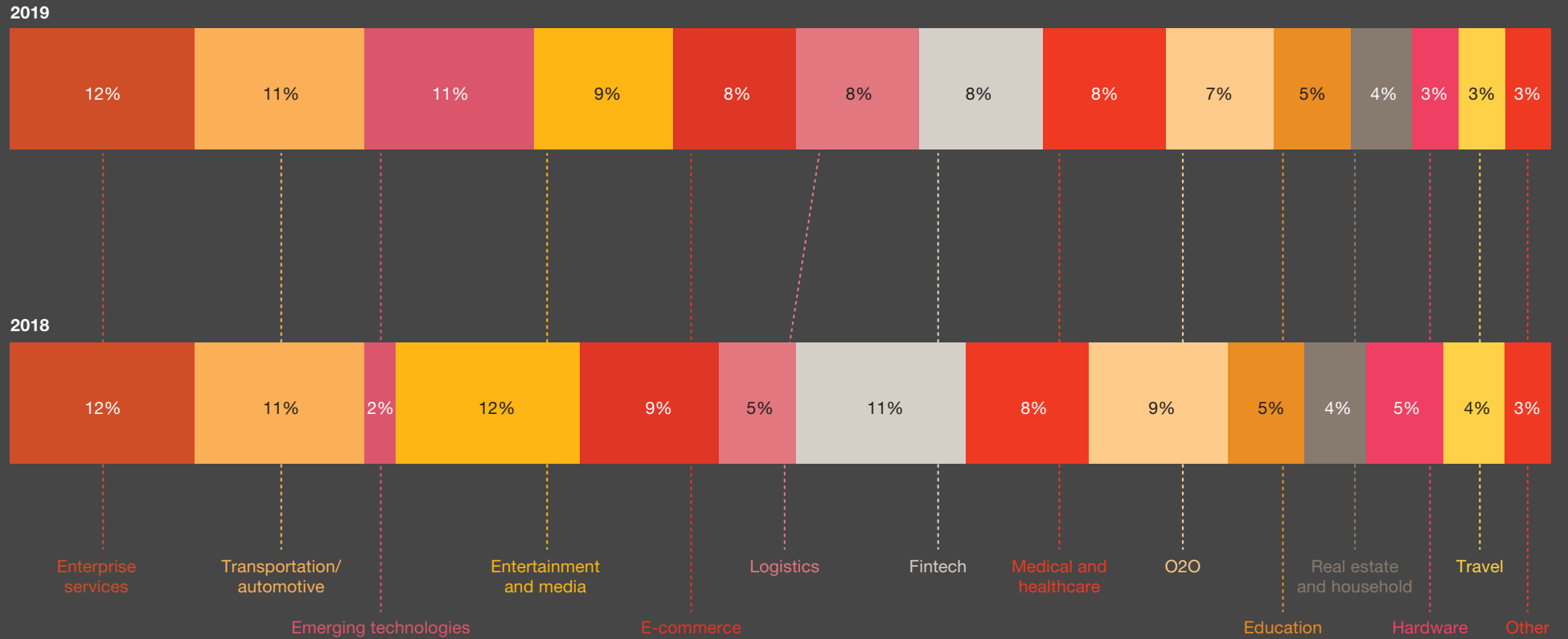
At a global level, this is clearly reflected in the findings from private businesses in PwC's latest CEO Survey. In line with the global trend across all industries, more than half of private business CEOs say they expect the rate of global economic growth to decline over the coming 12 months, a response that indicates their level of pessimism is at a record high. Their confidence in their own company's short-term revenue growth has also declined, with the number professing themselves 'very confident' plummeting to historical lows.

The participants in our China Unicorn Survey mirror this declining optimism. In 2018, 83% reported year-on-year turnover growth of more than 50% in the previous year — a figure that's fallen 13 percentage points to 70% in the 2019 survey. Growth in employee head count has also slowed. In 2019, 38% of those surveyed said their employment growth rate was less than 20%, up sharply from 24% of those surveyed in 2018. So it seems the challenging environment is constraining expectations and growth even in the most dynamic of companies.

Though China unicorns' growth rate may have slowed, it would still be the envy of most other companies around the world: the World Bank has projected global economic growth for 2020 at just 2.5%. And an analysis of sector distribution and investment hot spots confirms that unicorns' desire to identify and seize opportunities remains undimmed. As Exhibit 1 shows, the proportion of China unicorns active in the emerging technologies sector surged from 2% to 11% in 2019, while the proportion engaged in logistics rose from 5% to 8%.

In contrast, there was a decline in the proportion of unicorns operating in some sectors that are traditionally more crowded, notably fintech, e-commerce, and entertainment and media. And in terms of funding, the growth in the number of unicorns focussed on emerging technologies as a sector leapt from fifth in 2018 to second in 2019, behind only transportation/automotive.

Exhibit 1: Percentage of unicorns by sector, 2019 versus 2018

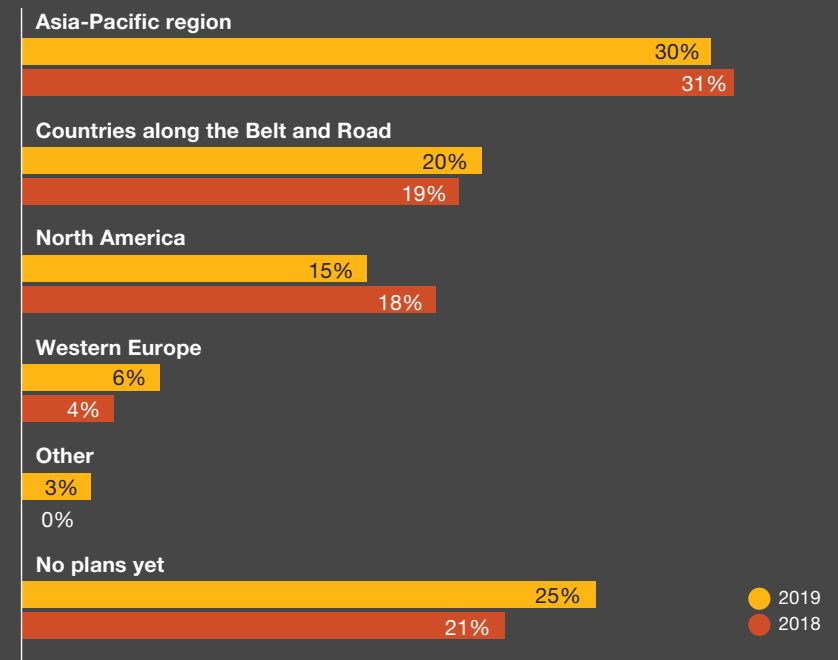


Shifting global horizons

Alongside these changes in their sector focus, we're also seeing ongoing shifts in the geographical areas that China unicorns are targeting for overseas expansion. Though the full impact of coronavirus on China's economy — and on Chinese unicorns in particular — remains to be seen, it is undeniable that there will be knock-on effects on the productivity and profitability of some of China's largest unicorns. Only time will tell how extensive these effects will be. However, before the outbreak, it's clear China's stable local economy and huge domestic demand were continuing to underpin Chinese unicorns' growth — conditions that have seen these start-ups increasingly go global. This international expansion helps foster cooperation, competition and the international development of value chains, while also opening up new growth opportunities. As Exhibit 2 shows, in 2019 Chinese unicorns' focus shifted slightly away from Asia-Pacific and North America, and towards Western Europe and countries situated along China's ambitious global development strategy, the [Belt and Road Initiative](#).

The recent trade conflicts have created uncertainties around globalisation, potentially affecting some Chinese unicorns and indeed those from other regions that are expanding their geographical footprint. Looking globally, our latest CEO Survey shows that approximately two in five private business CEOs who are concerned about trade conflicts are adjusting their supply chain and sourcing strategy. And almost three in ten private equity-backed CEOs who are concerned about trade conflicts say they're shifting their growth strategy and production to alternative territories.

Exhibit 2: China unicorns' preferred regions for overseas expansion

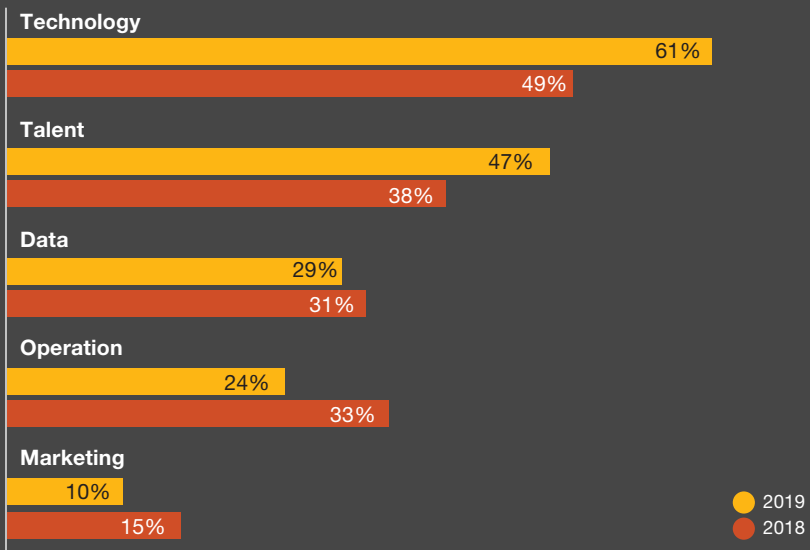


Source: PwC China Unicorn Survey 2019

Sources of competitive advantage: Technology, talent, data

Against this mixed background, unicorns in China and elsewhere are innovating and growing their business. To drive this growth, they're drawing on a range of core competitive advantages that evolve from year to year. As Exhibit 3 shows, China unicorns now regard their top three competitive advantages to be technology, talent and data, with data having overtaken operations in third place from the previous year.

Exhibit 3: China unicorns' core competitive advantages



Source: PwC China Unicorn Survey 2019



These top three sources of competitive advantage have clear linkages to three focus areas that emerge strongly from PwC's latest research studies, including the China Unicorn Survey and CEO Survey: talent and upskilling, 5G communications technology, and digital innovation and cyber.

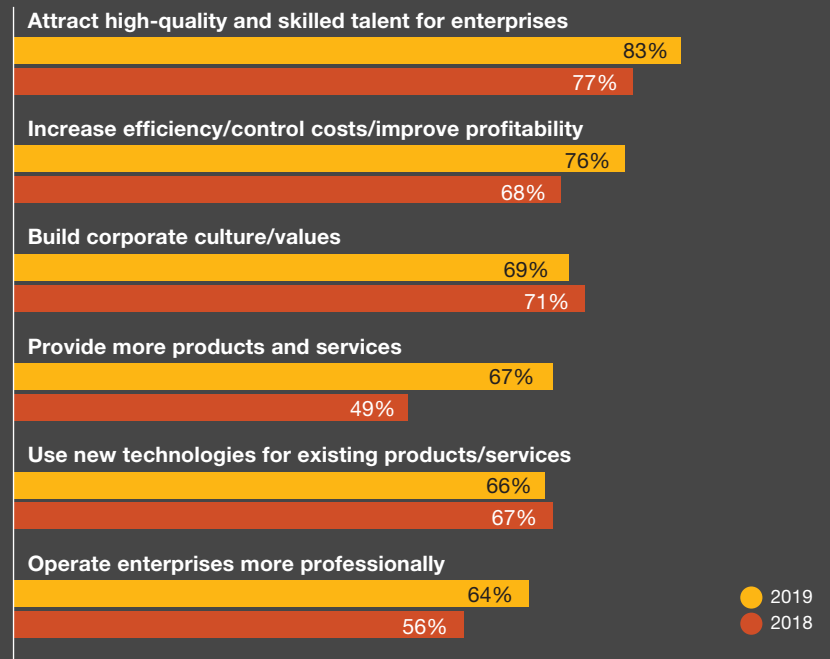


1. Talent and upskilling: Imperatives for success

The importance of talent to unicorns' success is underlined by the fact that our survey respondents in China rate it as second only to technology as a competitive advantage. And it appears that talent is becoming even more important: as Exhibit 4 shows, attracting high-quality and skilled talent remains the top priority in China unicorns' development strategy for the next one to three years, with 83% citing it in 2019, up from 77% in 2018. It's also interesting that unicorns are paying a relatively high degree of attention to building a corporate culture and values, which is often regarded as the preserve of larger and longer-established enterprises.

The critical importance of talent is also reflected in our CEO Survey findings. Private business CEOs rank the availability of key skills as a top business threat to their organisation's growth prospects, alongside cyber-threats. And skills availability is also rated in this year's CEO Survey as the clear number one business threat by TMT companies many of which are unicorns; communications and technology companies express especially profound concern about it.

Exhibit 4: Strategic priorities for sustainable development of the enterprise in the next one to three years



Source: PwC China Unicorn Survey 2019

Reskilling the workforce is vital not only to keep pace with rapidly advancing technologies and business models but also to win and retain talent in an increasingly competitive recruitment market. In our China Unicorn Survey, 39% of respondents say they've experienced a crisis in which their core talent is hired by competitors. Asked to cite the best ways to attract and retain talent, they put financial incentives on top, but also stress talent and employee development as an important tool (see Exhibit 5). Interestingly, start-up teams with no entrepreneurial experience place more emphasis on reskilling than do those with experience.

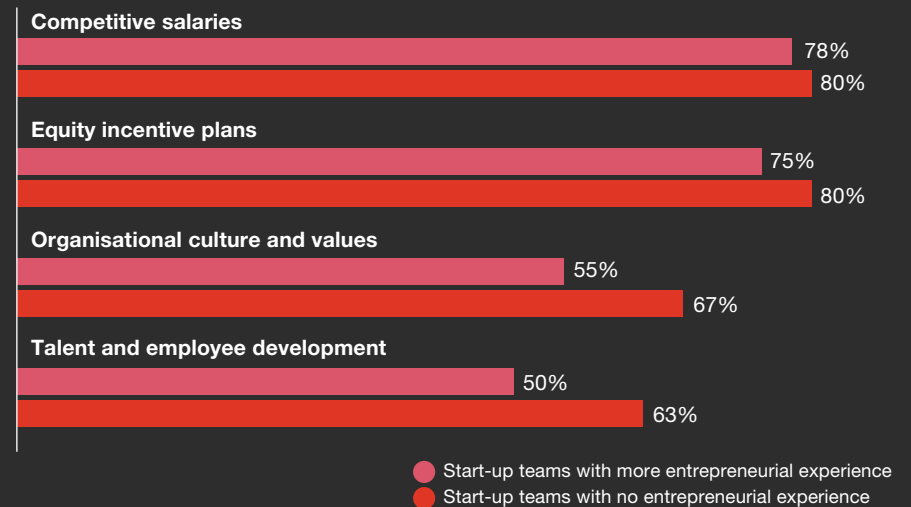
Once again, our CEO Survey casts an interesting light on these findings. Asked to assess their progress along their upskilling journey, many private business CEOs admit they still have a long way to go, but say they're making the most progress in such areas as building employee engagement, defining skills gaps and implementing diversity strategies. They add that the biggest challenges to their reskilling efforts are the ability of employees to learn new skills, a lack of resources and the difficulty of retaining employees who have been upskilled. This final point closely echoes both the China unicorn findings and our investigations with business leaders worldwide. Generally, we find that most global CEOs agree in principle that the digital age will bring benefits to their business and workforce — but also fear that neither they nor their people are ready.

Research studies and ongoing trends suggest they're right to be worried. It's estimated that technological change is likely to cause one in three jobs to be severely disrupted or to disappear altogether in the coming decade — a disruption that could affect almost half of all low-skilled jobs. A recent research report from the World Economic Forum — *Towards a reskilling revolution: Industry-led action for the future of work* — projects that upskilling the 1.37m workers in the US whose jobs are currently threatened will cost a total of some US\$34bn, or US\$24,800 per person. Multiply that sort of investment requirement up to a global level, and the sums become mind-boggling.

The message is clear. As PwC has highlighted in its *New world. New skills.* thought leadership, the discrepancy between the skills people have today and those needed for jobs in the digital world is one of the most critical global problems of our time. And given unicorns' frequently heavy reliance on these new skills to drive and sustain their growth, it's a problem that's especially relevant and urgent for unicorns — not least those in China.



Exhibit 5: Ways to attract and retain talent



Source: PwC China Unicorn Survey 2019

2. 5G: A key technology of the future

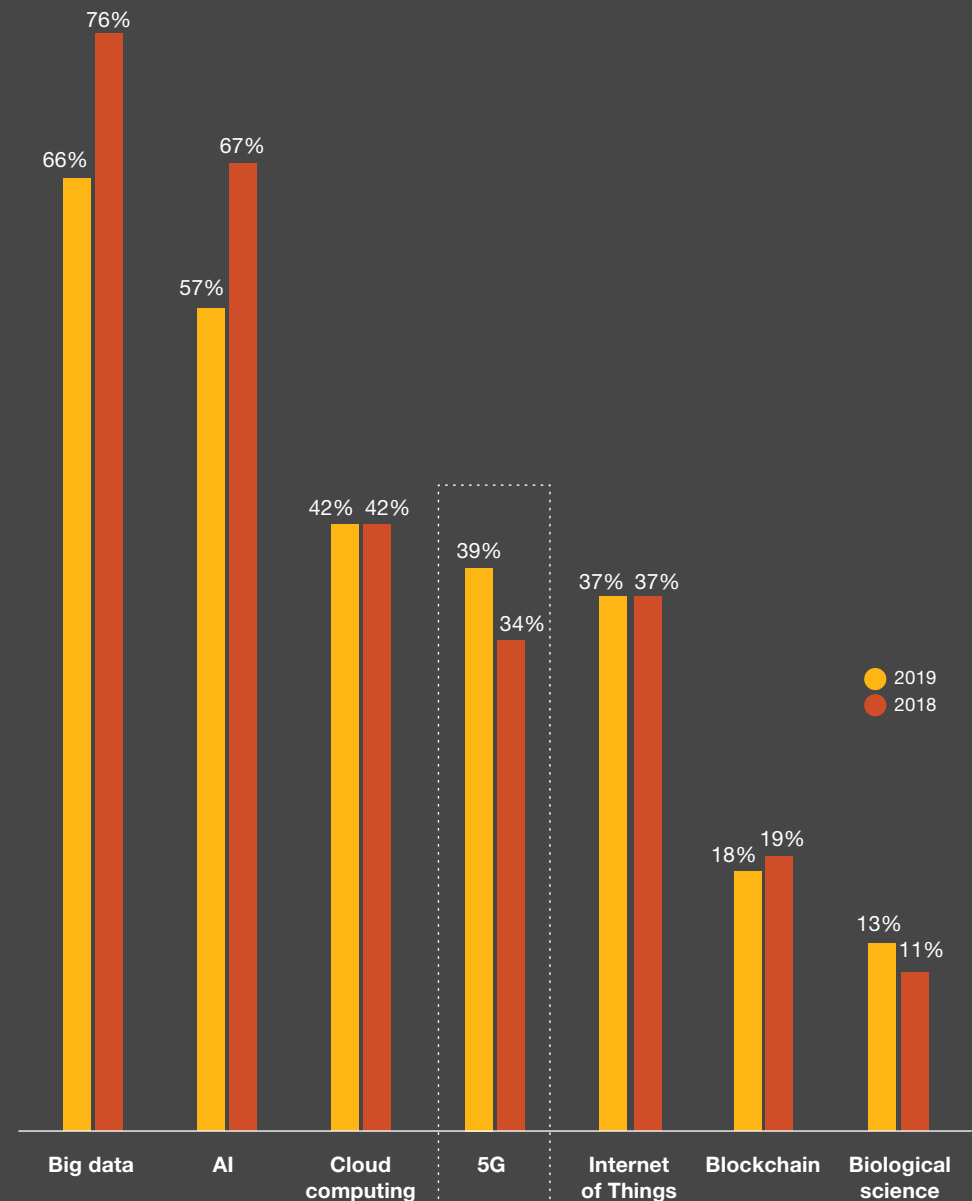
5G — the next generation of cellular mobile communications — offers an exponential improvement in functionality over 4G, being 100 times faster and having 1,000 times more capacity. The result of the implementation of the new technology will be mobile networks that offer far higher capacity and reliability, much lower latency, reduced energy usage, and massive connectivity for devices. It is hardly surprising, then, that the advent of this technology represents a seismic technology shift and massive opportunity for unicorns worldwide, including those based in China.

The number of China unicorns paying attention to 5G is increasing year by year. Among the 2019 respondents, the proportion of enterprises that believe 5G technology will have a significant impact on their business and product R&D rose to 39% from 2018's 34%, the biggest gain among all emerging technologies. As Exhibit 6 shows, though 5G is still rated well behind technologies such as big data and AI on the list of vital emerging technologies, it's closing the gap on them rapidly. Given the increasing attention being paid to 5G by the unicorn community globally, it seems likely that unicorns will be in the forefront of 5G developments in the future, playing a key role in driving innovation.

“5G could supercharge unicorns’ growth plans, fuelling innovation and unique product development as business value chains evolve. We’re seeing unicorns take an active interest in investing in new 5G technologies and infrastructure, while retrofitting existing devices to ensure they are 5G-enabled. As unicorns begin to embrace the opportunities that 5G presents, new business models and the Internet of Things will fuel growth which unicorns are uniquely ideally placed to capitalise on.”

— **Wilson Chow**
PwC Global TMT Industry Leader

Exhibit 6: Emerging technologies with a significant impact on business development and product R&D



So, how will 5G affect China unicorns in particular? Three-quarters of them believe it will have a significant or moderate impact on their business in the next one to three years. Drilling down, 56% say 5G will enrich the technical means by which they provide products and services, especially in industries such as entertainment, medicine and enterprise services that rely on high-speed and low-latency information transmission. And 27% say the 5G industrial chain will bring new business opportunities (see Exhibit 7).

Looking forwards to future 5G applications, unicorns are most optimistic about the Internet of Things (IoT), and believe that 5G-enabled intelligent manufacturing, virtual/augmented reality and smart cities will be commercially available within three to five years. Asked how they'll convert 5G into profit, 27% say they'll provide services to customers by joining 5G operators' ecosystems, and 26% say they'll invest in stand-alone R&D to develop new products or services such as high-definition video and virtual reality offerings. In our CEO Survey, the intention to invest in 5G is echoed by TMT enterprises, especially communications companies, 34% of which say this will be a priority over the coming 12 months.



Exhibit 7: 5G's impact on unicorns

Percentage agreeing with the statement below

56%

5G technology will enrich the technological means for enterprises to provide products/services

27%

5G industry chain will bring new business opportunities to the companies' products/services

14%

5G communication ecological chain is conducive to the business transformations of enterprises and the development of new product or service application scenarios

3%

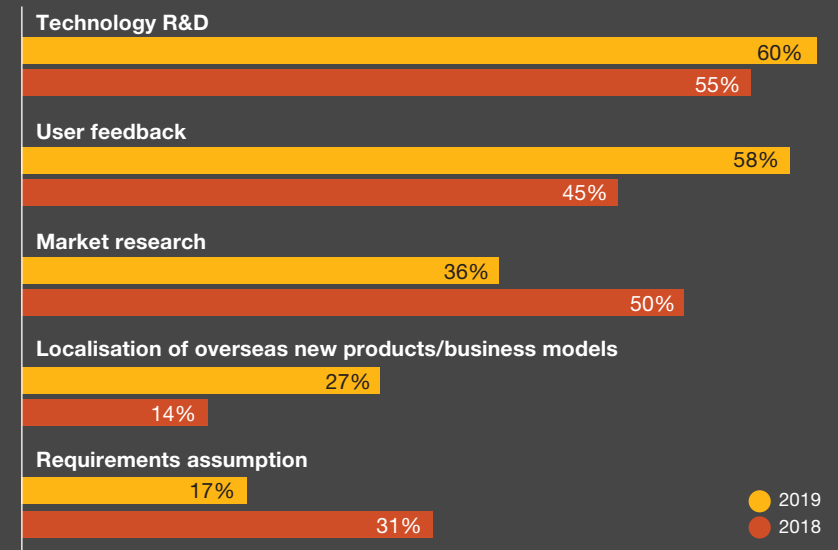
5G has little to do with companies' business

3. Digital innovation and cyber: Balancing opportunity and risk



As we saw in Exhibit 3, China unicorns increasingly regard technology as the principal driver of their success in the market, with 61% of respondents in our survey ranking it as their primary core source of competitiveness, up sharply from 49% in 2018. And they're striving to sharpen their technology edge through rising investment in technology R&D, which remains their top means of innovation (see Exhibit 8). Though other expenditures such as marketing have declined as a percentage of total costs, China unicorns' proportion of spending going into R&D has increased, with 32% of firms investing more than 40% of their total costs in R&D, up from 26% in 2018. This indicates that in a technology-driven market, China unicorns are focussing on building competitive barriers underpinned by technological capabilities, effectively building an economic 'moat' for themselves through technology innovation.

Exhibit 8: Main approaches to innovation adopted by China unicorns



Source: PwC China Unicorn Survey 2019

In most cases, the core objective of China unicorns' R&D efforts is digital innovation: as we saw in Exhibit 6, the top six emerging technologies with a significant impact on unicorns' business development and product R&D — big data, AI, cloud computing, 5G, IoT and blockchain — are fundamentally digital in nature. Though these are all high-potential areas, unicorns' heavy reliance on them inevitably exposes them to cybersecurity and data security risks. These risks are rising rapidly up unicorns' agenda: as Exhibit 9 shows, the proportion of respondents suffering a cybersecurity or data security crisis in 2019 rose from 19% to 26%, making it the third most prevalent type of crisis, behind issues in the capital supply chain and loss of talent to other companies, including to competitors.

Other findings in our research confirm that unicorns are responding to these growing threats by strengthening their cyber defences. Almost two-thirds, or 64%, say they now have a dedicated chief information officer (CIO) or chief technology officer (CTO) responsible for cybersecurity and data security, and many have put a dedicated chief digital officer (CDO) in place to manage data. It's clear that as unicorns embrace new technologies, and the cyber risks facing them increase as a result, they're recognising the increased threats and appointing CIOs or CTOs with direct responsibility for identifying, monitoring and managing these threats. Also, as we move to an increasingly digital economy, unicorns are becoming more aware of the importance of good data governance — an understanding reflected in increased cybersecurity measures, and, in a growing number of cases, the appointment of a CDO to oversee data and data governance.

The rising importance of cybersecurity and data security risks is further underlined by other PwC research studies. In our 2019 *Digital Trust Insights China Report*, based on research among 121 Chinese corporate executives, 28% of the respondents said they thought data governance or privacy protection would become the most severe risk facing their organisation during digital transformation. And in the most recent PwC CEO Survey, private business leaders ranked cyber risks as the second-biggest threat to the business's growth prospects, after availability of key skills; more than one-third (35%) of private equity-backed respondents professed themselves 'extremely concerned' about cyber-threats.

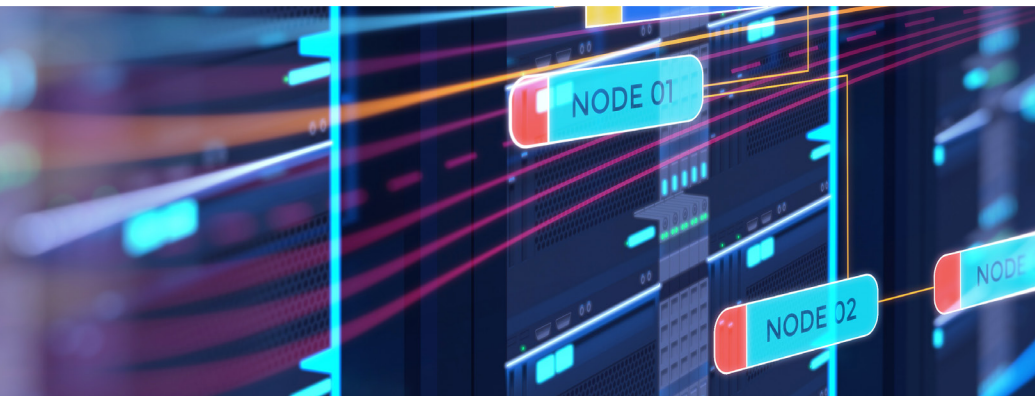
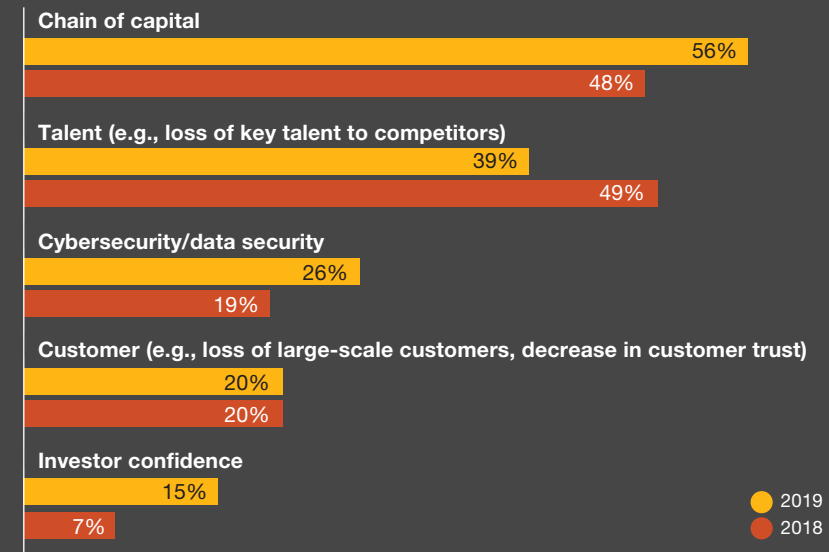


Exhibit 9: Major crises experienced, 2019 versus 2018

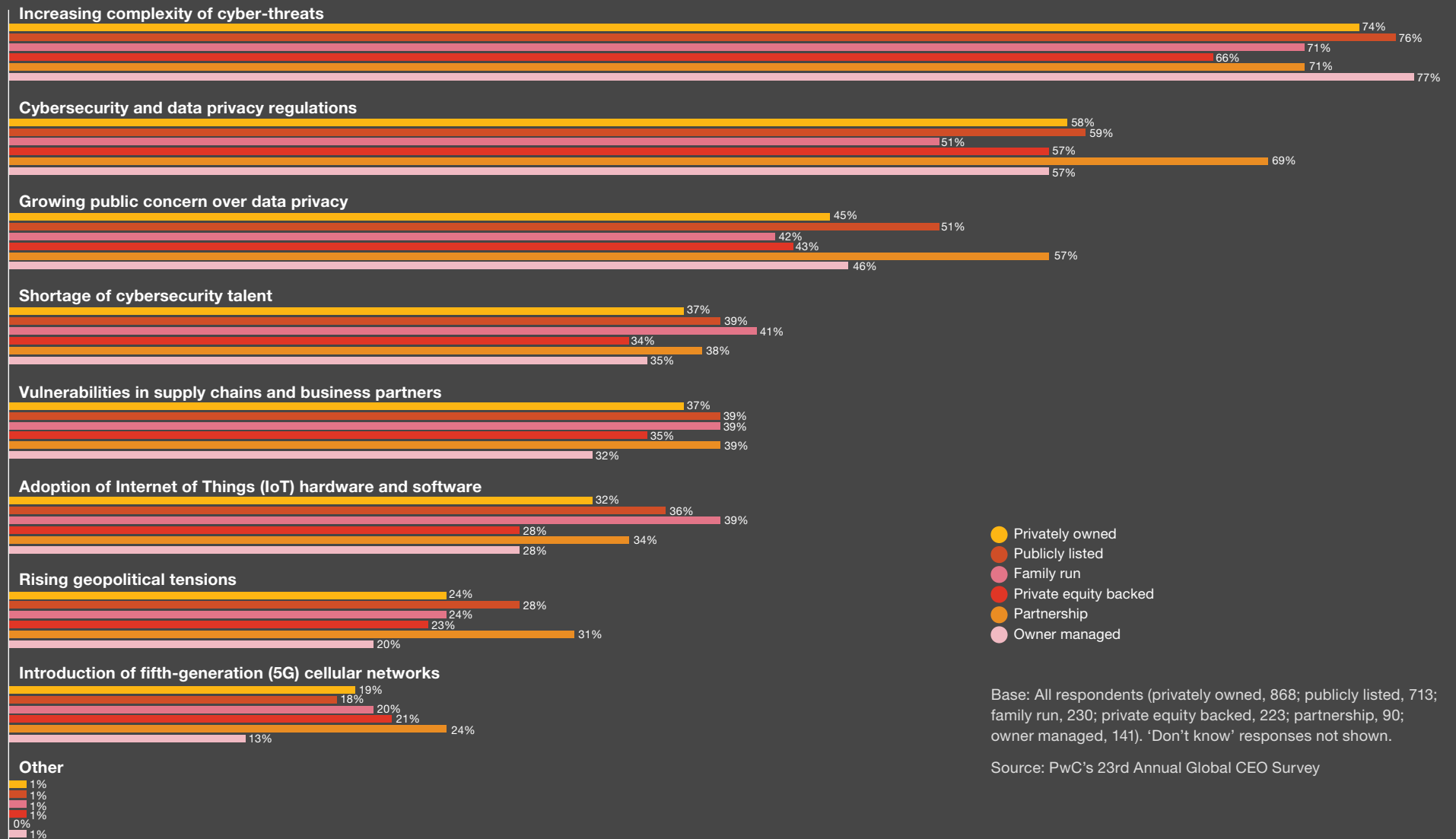


Source: PwC China Unicorn Survey 2019

Private businesses also rate cybersecurity as the most important area of emerging technology on which businesses and government should collaborate in order to build trust in society — a view echoed by TMT CEOs. Asked what factors were shaping their cybersecurity strategies, private business CEOs rank the increasing complexity of cyber-

threats at the top, followed by cybersecurity and data privacy regulations, and growing public concern over data privacy (see Exhibit 10). Such findings suggest unicorns should take a holistic view of cyber-threats, looking beyond the technology to consider wider issues involving public trust and collaboration between the public and private sectors.

Exhibit 10: What key factors are having the greatest impact in shaping your cybersecurity strategy?



“In response to the global impact of COVID-19, unicorns have launched a range of digital services for businesses in different sectors to meet new consumer dynamics as more people turn to digital applications and online services. In particular, we have seen increased collaboration between healthcare players and telecom operators as unicorns develop pioneering ways to address the enormous demand for digital solutions for 5G-enabled tools such as AI robots, sensors, and biometric and genetic screening for the remote diagnosis and treatment of patients or citizens under health quarantine.

“The demand within unicorns for enterprise communications services, especially unified communications and collaboration, has grown significantly. By their very nature, many unicorns already encouraged remote working practices, and thus employees in unicorn companies were increasingly using smartphones and portable devices to access company data and workstreams long before the COVID-19 pandemic. As a result, employees are increasingly reliant on audio and videoconferencing solutions, telepresence and other online meeting tools to connect and collaborate with customers and colleagues alike, a trend we are now seeing in companies worldwide.”

— Wilson Chow

PwC Global TMT Industry Leader



Conclusion: Building for a bright future

Overall, our China Unicorn Survey 2019 paints a picture of a sector that is continuing to grow and mature at pace. Born amid rapid advances in technology innovation, these businesses are becoming more pragmatic and long-term in their thinking, and increasing their focus on profit and performance improvement alongside scale, traffic and valuations. It's a maturation process that's being mirrored across the world, as today's unicorns continue their evolution into the global corporations of tomorrow.

So, what should unicorns — both in China and worldwide — be looking to do now to map out and accelerate that evolutionary journey? As our research underlines, they're facing an operating environment that's becoming more challenging owing to the collision of a disparate array of forces. In response, they're moderating their growth expectation and seeking out new areas to focus on, in terms of both geographical markets and sectors of activity.

But this refocussing doesn't signal any reduction in the opportunities for innovation and growth going forwards. And we believe three vistas are coming especially prominently to the fore:

- **Talent and skills:** The need to reskill the workforce to capitalise fully on emerging technologies applies as much to unicorns as to any other kind of business — and arguably more so. In this context, a key finding of our China unicorns research is that start-up teams with no entrepreneurial experience place more emphasis on reskilling than do those with experience. We believe reskilling should be a core focus and strategic priority for all unicorns.
- **5G:** As the next generational step-change in wireless communications, 5G will help redefine businesses and societies worldwide, opening up a massive opportunity for unicorns. And it's one they're moving to seize; the number of unicorns paying attention to 5G increases every year. Those that succeed in implementing innovation driven by — or related to — 5G today will be well-placed to lead and capitalise on its ongoing development and expansion in the future.

- **Digital innovation and cyber:** With the proportion of China unicorns citing technology as their primary source of competitiveness rising strongly, and technology R&D remaining their primary approach to innovation, it's clear that digital innovation is central to unicorns' efforts to differentiate themselves and create barriers to entry. It's vital that unicorns balance this emphasis on innovation with a clear focus on the risks that come with it, not least around cybersecurity.

These are exciting times for unicorns in China and around the world. Though challenges abound, they're far outnumbered by the opportunities on offer. And unicorns' proven track record in entrepreneurialism and growth means they're ideally placed and qualified to realise those opportunities.

“The COVID-19 outbreak has affected business operations in many ways. Crisis management has become one of the top priorities for both established private enterprises and start-ups. It's a time for business leaders to rethink the best ways to respond to potential crises and put effective contingency plans in place. Enterprises need to improve their crisis management system and incorporate it into their daily business. Enterprises also need to stabilise or adjust their supply chains to better manage the crisis.”

— **Stephen Wong**

Entrepreneurial and Private Business Co-Leader, PwC China

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