Yin Qi, the 35 year-old founder and CEO of facial recognition unicorn Megvii has announced a Hong Kong IPO to fuel his global expansion.
The social media sensation in China over the last week was a face-swapping app called Zao.

Similar services have been available in the past but Zao has been a breakaway success, winning fans from across the country.

Developed by Nasdaq-listed dating platform Momo, it allows its users to pick from hundreds of video clips, some of them classic movie scenes, and replace the star’s face with that of their own. All they need to do is provide a few selfies – taken from different angles and with different facial expressions – and Zao’s artificial intelligence (AI) will do the rest.

The software quickly became China’s most downloaded app – overloading the company servers. It popularity prompted a number of venture capital firms to woo Zao’s development team with funds.

Yet there was controversy too when Zao was forced to make a statement on Sunday pledging changes to its data privacy policies – which had given it free and ‘relicencceable’ rights to all user-generated content.

Apart from the privacy row, critics have also warned against how it might be used for so-called ‘deepfakes’ (content that is distorted or superimposed with new images).

On Wednesday the Ministry of Industry and Information took note, asking the software developer to “rectify and improve” its business model.

The IPO will offer investors their first opportunity to buy into a major, pure-play facial recognition firm. And in another tech landmark that company will be Chinese and not, as has been more customary, a product of Silicon Valley.

What does Megvii offer?

Founded in 2011, Megvii is best known for its Face++ system, which is capable of analysing more than 100 facial data points and confirming a person’s identity with a high degree of accuracy.

Face++ is an open platform that gives other developers access to its
Talking Point

algorithm to create their own business applications. According to Megvii’s preliminary prospectus, the company is already the largest provider of cloud-based, facial recognition-powered identity authenticifiers in China with a market share of 60%. And as of the end of June it was claiming 339 corporate clients from 112 Chinese cities.

Sales of “City IoT” services – its term for surveillance and security systems – made up more than 70% of its revenues last year. That also makes the Chinese government – at local and central level – one of Megvii’s key customers. Applications of its technology have been widespread, with the domestic press reporting that it has led to the arrest of more than 5,000 criminals (not a data point that gets a direct mention in its listing document).

Megvii’s software can also spot transgressions from drivers and initiate road management changes by reacting to traffic flows. It supports monitoring systems to public housing to allow entry only to recognised residents. And it is also being tested as a way of curbing subleasing in government-subsidised housing as well.

While law enforcement and security work has provided the bulk of Megvii’s revenue, its technology is also being deployed in retail and services contexts. Most notably, its major shareholder Alibaba used Megvii to power its “Smile to Pay” service at a concept store in Hangzhou (see WiC378). Didi Chuxing, China’s biggest car hailing firm, relies on the same technology to let passengers verify their driver’s identity. And Megvii software also powers device authentication for over 70% of the Android-based smartphones made in China (Huawei and Oppo are major clients).

**Who is behind Megvii?**

The company’s founder and CEO Yin Qi is just 35 years-old. Born to a middle-class family in Wuhu in Anhui province, Yin studied at Tsinghua under Andrew Yao, a winner of the Turing Award (the Nobel prize of the computer world). It was in Yao’s class that Yin met his two co-founders.

According to Xinhua, Yin is also a Communist Party member. In 2017, at one of the State Council’s consultation sessions with think tanks and entrepreneurs, he was described as the youngest attendee. That exclusive event saw him share his ideas with Chinese Premier Li Keqiang.

At the outset Megvii tinkered with smartphone photo applications and worked with dating sites. But Yin and his team soon attracted the attention of renowned private equity groups such as tech-focused Legend Holdings (parent of Lenovo) and they turned their focus more to surveillance and security.

Alibaba became an investor in 2014. Besides the financial support, China’s biggest e-commerce firm has helped to raise Megvii’s profile. For instance, Alibaba founder Jack Ma showed off Megvii’s ‘pay-with-your-face’ technology at an AI conference in Hanover in front of German leader Angela Merkel.

Together with its payment unit Ant Financial, Alibaba owns about 30% of Megvii. Yin and his two co-founders now own less than 10% of the shares. Yet they still exert control over the company through a dual-share structure that gives the partners more votes (Alibaba has something similar).

**How much is Megvii worth?**

According to Reuters, a fundraising round earlier this year valued it at about $4 billion, but its backers want a higher price once it lists on Hong Kong’s stock exchange. Reportedly company executives are hoping to raise up to $1 billion in its initial public offering – which will break new ground as the first AI stock to go public in the city.

Megvii has its fair share of competitors. Inside China the main rivals are SenseTime (also backed by Alibaba, see WiC405), Yitu and CloudWalk. Together with Megvii the group is known collectively as “the four little AI dragons”. The other members of the quartet also want to go public, although local media reports say they have been sizing up the newly-established STAR bourse in Shanghai instead (see WiC461).

AI concept stocks aren’t entirely new to investors in China. iFlytek,
an AI firm that specialises in voice recognition technology, went public in Shenzhen as long ago as 2008. It was worth Rmb76 billion ($10 billion) this week – a valuation of 120 times its 2018 earnings. Some analysts are now benchmarking Megvii against iFlytek, although the IPO candidate is yet to make a profit. In fact it lost Rmb3.4 billion last year (on revenues of Rmb1.4 billion, more than four times its 2017 sales).

iFlytek is trading at about 6.4 times its 2018 sales. Megvii would need to price itself on a higher premium – at least 7.5 times sales – to get the IPO away at a market value that comes close to its $4 billion valuation target. Is that realistic, Caixin Weekly asked, noting the uncertainty over whether Megvii would reach profitability in the next two or three years.

How big is the facial recognition market?

According to Megvii’s filing, there are already about 210 million surveillance cameras installed across China, although it says most of these are outdated and require replacement.

It also estimates there are at least 1.2 million locations where new facial recognition systems are required for the premise’s entrances. In Beijing alone 13 public rental housing communities installed entranceway facial recognition in July – and 46 more will do so by October. Megvii reckons the overall market for its services was worth Rmb300 billion last year but that it is still growing rapidly.

It also goes without saying that the Ministry of Public Security is an important focus for all of the facial recognition unicorns. For instance, Chinese police are relying on them to pluck suspects from crowds (we have reported on the fugitives arrested at Jacky Cheung concerts; see WiC410) and some police forces have been relying on Google Glass-style devices to allow their cops to scan faces while they patrol the streets. Local authorities are looking to use facial recognition more – for everything from paying subway fares to fining jaywalkers.

The ‘AI dragons’ are also eying overseas markets, where Chinese firms are already sitting on an estimated 40% share of the ‘security solutions’ market.

Countries such as Brazil and India have been bigger buyers in recent years and Megvii says it is well-positioned to capture more opportunities abroad.

In fact, it plans to allocate some of the proceeds from its IPO to bankroll its overseas expansion. “With the help of our investors and customers, we aim to accelerate our development as a trusted global leader in AI and internet of things, empowering humans and enabling industrial progress,” Yin Qi wrote in a letter to investors included with its listing document.

Is Megvii a reliable bet?

Megvii has a research lab in Seattle but the US market seems unlikely to be an enthusiastic customer for its services – or for any of the other Chinese AI firms.

Tensions unleashed by the Sino-US trade row have already put telecom major Huawei on the sanctions list and Megvii warned in its listing document that this is a risk factor for its investors as well.

In May American media reported that the US government was thinking about expanding its blacklist to other Chinese tech firms, including Megvii, drone maker DJI and the surveillance camera maker Hikvision (see WiC375). Back in China this threat was regarded as a “badge of honour”, given the widespread perception that it is only the most tech-savvy Chinese firms that are getting scrutiny from Washington. Nonetheless, Megvii is bound to face more questions about its links to the Chinese state as it courts more investors and cus-
Megvii says 4.9% of its revenues came from outside China in the first half of this year, compared with 2.7% for all of 2018. The plan is to launch joint ventures in places like Thailand and the Middle East. But critics of the company will ask questions about its links to the Chinese state and query whether Megvii can meet appropriate privacy standards, especially in European and North American markets.

Indeed, news about it being a potential addition to Washington’s watchlist emerged only a month after reports in the international media that it was involved in one of the world’s most sophisticated surveillance systems in the restive Chinese region of Xinjiang.

Megvii then found itself enmeshed in another unwelcome debate this week. Promotional video for its roadshow had shown its equipment at work monitoring student behaviour in a classroom (catching, for instance, that a student might be daydreaming, based on facial expressions). A screenshot of the clip went viral online, with netizens soon questioning whether Megvii was infringing student rights with such intrusive applications. It responded that the video was only a product demonstration and that its main focus in the education sector was improving campus safety (a growing concern for Chinese parents following a series of knife attacks in recent years). But it was another reminder that facial recognition firms are working in sensitive areas. Megvii is aware of the risks to its reputation, making plain in its prospectus that “rumours or negative publicity” about how its software is applied are a genuine threat to its image and growth prospects.

**Big brother is watching...**

The Chinese government has already provided significant financial and policy support to the nation’s burgeoning AI sector. There are hundreds of new entrants in the industry: the World Artificial Intelligence Conference (WAIC) kicked off in Shanghai last week with more than 300 firms, a 50% increase in exhibitors on the previous year.

There is, of course, no certainty that the four AI dragons will emerge as genuinely dominant tech titans. Also in the news at the Shanghai conference last week was a new “national open innovation platform for next generation AI” that aims to encourage domestic firms to share their source code. The question is whether collective efforts like these might reduce some of the early-mover advantages enjoyed by the likes of iFlytek and Megvii. And the AI quartet might also need to deal with a major new competitor like Hikvision, which could scale up its own R&D in facial recognition or acquire one of the dragons and merge it with its vast surveillance camera business.

The potential synergies from such a deal must be tempting, given the government’s Orwellian vision of covering the country with its ‘Skynet’ surveillance system.

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**Chengdu’s new chippy**

Where is the best fish and chip shop in Britain? Not an easy one to adjudicate, although WiC’s top two candidates are in Skye and Ullapool. However, it seems the Chinese have made their own choice by recreating one of the UK’s more popular chippies back in China.

The Daily Mirror reported late last month that a Yorkshire eatery named Scotts is set to open in Chengdu after proving overwhelmingly popular with Chinese tourists. Owner Tony Webster told the Mirror that he was approached by a consortium of Chinese businessmen to “recreate Scotts” in their home city and is set to get the deep fat frying there later this month.

“The partner we are working with in China said he wants two more sites there, so we are hoping to have three restaurants in China by 2020,” said Webster.

The most popular dish among Chinese visitors to Webster’s takeaway near York is cod and chips, with the chips cooked the traditional Yorkshire way in beef dripping, Scotts says. The new restaurant in Chengdu – a city best known for its panda reserve – will keep things authentic, although Webster reckons the locals’ love of spicy food might see a few tweaks “like replacing the ketchup with Sichuan chilli sauce.”
New 15% tariffs went into effect on September 1 on about $112 billion of Chinese imports, with warnings that they could start to push up the prices of consumer goods arriving in the US. Just 29% of consumer goods had suffered from tariffs up to this point, the Washington Post reports, but the figure will now rise to 69%, and eventually 99% when a final tranche of tariffs is imposed on December 15, according to the Peterson Institute for International Economics. However, news on Thursday that the two sides have agreed to meet for further talks in October was greeted positively by investors, with the S&P 500 rising 1.3%.

Reuters has highlighted how customers of Apple are also going to feel the impact of the increases, noting that 46 out of the 50 products that the brand makes in China could face tariffs by the end of the year. The first two rounds of tariffs last year didn’t do much damage to the Californian firm, it said, only affecting the Apple USB Super Drive. But now virtually all of its goods will be hit, although Apple may try to change the codes it uses to import products or source them from a different country.

Provincial governments are relying on the sale of state-owned assets to offset the impact of tax cuts and slower economic growth, according to Caixin. In a bid to balance their budgets, the governments of Guangdong, Sichuan and Liaoning provinces will be selling “idle assets, as well as those operating inefficiently over the long term”, local media reported. An asset selldown is said to have generated more than Rmb40 billion in the first half of this year for Guangdong, for instance, an increase of almost two-thirds from the same period last year.

The battle to become Gree’s largest shareholder is down to the final two contenders from an initial list of 25. A Zhuhai-based private equity fund backed by Hillhouse Capital and a joint venture controlled by Hopu Investment Management are the last two bidders in the running to buy 15% of China’s largest air-conditioner maker in a deal worth at least Rmb39.9 billion ($5.58 billion), according to a company statement. The seller is the current majority owner, a unit of Zhuhai’s local government, which wants to divest most of its stake.

Dai Zhikang, the founder of property and finance conglomerate Zendai Group, has given himself up to the police, following an investigation into illegal fundraising at his peer-to-peer lending business. Public security officials in Shanghai said that Dai has confessed to setting up illegal pools of capital and embezzling funds. His detention came a week after the lending platform published a note from Dai on its website saying that the company wouldn’t “run away”. The authorities had just closed down the platform – called Laocaibao – which was said to have processed funds worth Rmb10 billion.
When senior executives are selling down stakes in their firm, it’s often a signal for stock-market investors to consider their exit strategy: particularly if the person in question is one of the company’s founders.

And sure enough, Xiaomi came under selling pressure in August after co-founder Lin Bin insisted on his complete faith in the company as he divested 1.48% of his stake. Lin’s subsequent declaration that he had to generate the funds so that he could set up a charitable institute didn’t really cut much ice with investors (the stock fell about 5%) and the share price only recovered after Xiaomi announced a share buyback programme.

The problem that investors have is that they still do not know what to make of Xiaomi. Many have also been wrongfooted by a company which has lost 50% of its market value since it listed at HK$17 per share last June too.

At the time of its listing it carried a $53 billion market capitalisation – which was half the level that its founders had told bankers they deemed fair value prior to the IPO.

As we wrote in WiC415, investors are still divided over whether Xiaomi should be classed as a hardware company that makes (cheap) smartphones or a software firm that is set to dominate the market for Internet-of-Things (IoT) products.

Xiaomi considers itself the latter and one of the standouts of its recent first half results was the impressive growth in the number of devices connected to its network – 196 million, up 69.5% year-on-year. Xiaomi is trying to change investor perceptions at a tumultuous time in the tech sector. Admittedly, Huawei is bearing the brunt of trade and technology tensions between Beijing and Washington. But its struggles with the Trump administration are having a direct impact on Xiaomi too. Recent data shows that Xiaomi is reporting lower sales in the Chinese smartphone market, for instance, where Huawei has re-focused its attention. But it has been gaining ground in Western Europe. Canalys research points out that Huawei’s shipments slipped 16% from January to June, whereas Xiaomi’s rose 40%.

Over the last year, Xiaomi co-founder Lei Jun has acknowledged the tougher market conditions – with many consumers also waiting for a fuller advent of the 5G era before changing handsets. But he thinks this upgrade new cycle will kick in from the second quarter of 2020 and that it will help him to win a second wager he’s struck with Gree chairwoman, Dong Mingzhu.

In 2013, the two famously made a bet as to which company would have the higher revenues at the end of 2018. At the time, it seemed like a no-brainer: Gree’s sales were 10 times higher than Xiaomi’s. In the interim period, Xiaomi went on to become the youngest company to get into the Fortune 500. But Gree still won the bet: although only just (see WiC445).

Dong and Lei have now extended their wager, with a challenge on who will report the highest sales in five years time (the gracious Dong opted not to take from Lei the Rmb1 billion at stake in the first bet). And while this looks like another marketing gimmick to keep both companies in the public eye, Gree won’t be as confident of winning this time around, especially in light of how quickly Xiaomi has closed much of the existing revenue gap.

Of course, Dong is still hoping to diversify Gree further from its core air-conditioning business, although her efforts so far haven’t proven particularly successful. But Gree is about to gain a new strategic investor after its big government shareholder, Zhuhai Sasac, decided to offload its 15% stake. This week it was announced that the final two companies in the running were both private equity groups – Zhang Lei’s Hillhouse Capital (see WiC393) and Fang Fenglei’s Hopu (see WiC25).

When Gree was floated in 1996, Sasac owned 60%, but very soon the air-con group will look a lot more like a Western multinational, with no controlling shareholder.
Back in 2011, Yum China – which owns the Chinese businesses of KFC and Pizza Hut – agreed to pay $86 million for a stake in the popular hotpot chain Little Sheep. The goal, the fast food giant said at the time, was to introduce hotpot to a global audience. A year later Yum China raised its stake in the Hong Kong-listed firm and took it private. Separately, it also bought a controlling stake in food delivery company Daojia for an undisclosed amount in 2017.

The acquisitions, however, have failed to deliver the envisaged returns, according to InvestorsCN, a blog. In the last seven years, Little Sheep has been shutting down non-performing stores. The number of restaurants fell from 469 (both franchises and company-owned) before Yum’s initial acquisition to ‘around’ 320 outlets according to its most recent financial statements (the qualification is due to the fact this category in its reporting also includes the coffee chain COFFii & Joy and Mexican chain Taco Bell, although Little Sheep accounts for the majority of outlets).

Similarly, Daojia, which ranked a distant fourth in China’s food delivery industry, behind leaders Meituan Dianping and Ele.me, has become “marginalised,” says InvestorsCN. After the acquisition, not only did Yum China pay little attention to the platform, it even established a rival online food delivery network for Pizza Hut and KFC.

Still, in a sign that Yum China hasn’t given up its localisation effort in the Chinese market, the fast food giant announced in late August that it has signed a definitive agreement to acquire a controlling stake in the chain restaurant Huang Ji Huang. The transaction is subject to closing conditions and regulatory approval, and is expected to complete by early 2020.

“With the acquisition of Huang Ji Huang, Yum China hopes to obtain a stronger foothold in the Chinese catering industry as Chinese food and beverage has a considerable market share in the country,” it said in a statement.

Yum China now operates 8,750 restaurants in China. Ant Financial bought a minority stake in the company in 2016 but the American parent reportedly refused an $18 billion buyout from Chinese investment firm Hillhouse Capital last year.

Its latest purchase highlights that Yum is determined to continue its strategy of catering to local tastes. Just recently KFC added Sichuan-style skewers, a popular street food in China, to its menu, (see WiC462).

“The acquisition of Huang Ji Huang suggests that Yum China is still eager to expand the scope of the Chinese restaurant industry and adapt to the domestic market,” Zhu Danpeng, a food industry analyst, told China Times.

At Huang Ji Huang, diners can choose from various proteins and vegetables that go into their stew pot. The server then sets an electric hot plate and a heated pot in the centre of the table. Each ingredient – completely raw – is added in layers and then cooked in its own juices until fully done (the pot is specially designed to cut down cooking time). A sauce – usually containing elements of traditional Chinese medicine for health benefits – is added towards the end to enhance the flavour of the stew.

When it comes to the operation of the restaurant, there’s a similarity between Huang Ji Huang and Little Sheep. Both concepts are more scalable as they don’t require a lot of cooking technique – a major staffing bottleneck for a lot of restaurant chains in China. The ingredients can also be prepared in advance, which makes it easier to centralise food preparation.

The Beijing-based chain was founded in 2004 and it now operates 640 outlets at home and abroad. The business is primarily a franchise model, with the company only operating six outlets itself. Its brand portfolio also includes the newly launched Chinese-style fast food brand Sanfenbao.

Nevertheless, some industry observers do not seem optimistic about the deal. “Yum China acquiring Huang Ji Huang is hoping that the ‘East meets West’ model is going to work; that is, one plus one is greater than two. But Huang Ji Huang is not a very good target... And more importantly, these ‘stew pot’ style of restaurant chains have been oversaturated and there is little room for growth,” a sceptical Zhu concluded.
 Licence to drive
The government seeks to rekindle car sales

For years the Tesla founder Elon Musk held out from making cars in China, waiting until he was allowed to do so without the profit-diluting and technology-sapping embrace of a local partner. But once the rules changed he made his move, announcing that Tesla would build a plant in Shanghai.

That decision means he’s unlikely to be so badly impacted by last week’s announcement that the Chinese government will resume 25% tariffs on imported cars (in retaliation for a new round of American tariffs on Chinese goods). Handily for Musk, the government won’t reintroduce the levies until December – the month its forthcoming gigafactory is set to go into full production.

Last week, a high-profile meeting between Musk and transport minister Li Xiaopeng was capped by more good news for the California-based tycoon: the announcement that Tesla’s China-made cars will also be exempt from a 10% purchase tax.

Good news all round? Predictably, existing Tesla owners were unimpressed. The new exemption has reduced the cost of buying a Model S by as much as Rmb99,000 ($13,960) – stoking sentiment that earlier customers overpaid. The Global Times reports that various WeChat groups have sprung up in which Tesla drivers have argued for a refund and bashed the brand.

In response Tesla’s China head Zhu Xiaotong told the government-owned newspaper that it had applied for the exemption several times in the past but that it ‘didn’t have the right to make public the information” as it wasn’t clear if the application would be approved.

Clean Technica describes the government’s more accommodating treatment of Tesla as “completely giving the White House the finger”. But the latest tax break is part of a bigger picture as the government grapples with the best ways to pump-prime consumer demand at a time of slowing economic growth.

The latest retail sales figures show that spending growth slipped from 9.8% in June to 7.6% year-on-year in July. Much of that fall came from plummeting sales across the auto industry, which was hit by a nasty double whammy. Conventional car sales were constrained by the introduction of new emissions standards, which prompted dealers to offload non-conforming inventory at deep discounts (see WiC460). And sales of electric vehicles (EVs) were hit by a reduction in subsidies: cars with driving range below 250km lost the sweeteners altogether, and the rest suffered a 50% cut.

According to Clean Technica, electric vehicle sales dropped 7% year-on-year in July, the first negative growth in two years. Brands such as Geely’s Emgrand and BYD’s E5 were badly hit, but the better-performers included BMW, whose 530Le rose from sixteenth bestseller in June to fourth in July on sales of 2,752 units. (Tesla does not release sales figures but has said it hopes to produce 3,000 Model 3 cars a week in China from December).

Maybe that signals that sales of foreign brands will hold up better in the tougher environment. But most analysts think that car sales will pick up again once some of the shorter-term dampeners are removed from the equation. At the end of August, the State Council took action to stimulate consumer spending once again, with 20 policy measures, many targeting cars.

Making most of the headlines is a plan to increase licence plate quotas in major cities – Shenzhen and Guangzhou have increased licence plate quotas for conventional cars by about 50% already. The capital city meanwhile is included too – Beijing enforces a quota on plates for new electric cars too. There is an estimated 420,000-long waiting list of potential electric vehicle buyers needing plates in Beijing – the current annual quota is around 50,000.

The capital’s municipal officials didn’t sound enthused by the potential changes, telling China Times that they had not been formally instructed to change the current lottery arrangements for acquiring licence plates. At the very least, car industry experts say the Beijing government should prioritise families in the lottery system.

Any increase in the quota would help in boosting overall EV sales, which are forecast to reach about 1.2 million cars nationwide in 2019.
Switzerland’s Engelberg has been a resort town for nearly 170 years. As its English name “Angel Mountain” suggests, the spot is pristine and picturesque, exuding an alpine charm. It might not, however, seem the best location for a scientific research and development centre. But a Shenzhen-listed laser equipment maker established one there eight years ago. More surprisingly, the actual nature of its Engelberg investment went unremarked until recently, when the company was embroiled in a scandal concerning the country’s leading auditing firm.

In a letter dated July 17, the Shenzhen bourse asked Han’s Laser Technology a series of questions about financial irregularities. Top of the list was the construction budget of its “R&D centre” in Engelberg, which soared 21 times to Rmb1.05 billion ($150 million) between 2011 and 2018 – in addition to almost yearly capital injections into the relevant unit totalling Rmb160 million over the same period. In spite of these outlays only 64% of the planned construction was complete.

Han’s Laser explained that its R&D project involved refurbishing an existing hotel into a multi-purpose complex that could serve as a venue for conferences, meetings and staff training. It blamed the lengthy construction process and budget overrun on unforeseen difficulties – which included delays in the local government issuing a building permit, and a previously undisclosed plan to acquire an adjacent property so as to enlarge the so-called R&D facility.

A report by China Business Network, which dispatched its correspondent to the site in Engelberg, painted a different picture, however. “The centre’s actual registered address is just a 10-metre-square room in another building in Engelberg,” revealed the Shanghai-based media outlet. With a healthy dose of cynicism, it suggested that the chances of the hotel being repurposed into an actual R&D hub are “slim” because Switzerland’s rules over property use are strict. It also noted that not much was known about the project when its reporter made enquiries among the Swiss town’s officials.

What made things worse was Han’s Laser’s disgruntled boss, who got defensive about media enquiries into the unfinished project. “Who the heck are you? Who do you think you are to question me?” Gao Yunfeng, Han’s Laser’s CEO, blasted a CCTV reporter in a taped interview. Gao’s response did not go down well with the market, sending Han’s Laser’s share price to a two-year low. And his attempt to shield the investment from the public eye has left some investors querying his disregard for corporate stewardship. Having employed Ruihua Certified Public Accountants, the now infamous auditor fined by regulators for failing to detect financial fraud at listed companies (see WiC463), Gao’s European project looks like another odd case of auditing.

Established in 1996, Han’s Laser has been a key supplier to the likes of Apple (the logo imprinted on the back of an iPhone requires its laser technology). It was among the first batch of stocks that went public on Shenzhen’s SME board in 2004, and has been locally regarded as a “white horse” stock, the equivalent of a blue chip elsewhere.

Having lodged steady profit growth over the past 14 years, it has also proven popular among foreign investors. So popular that following its official inclusion into the MSCI index in March, foreign holdings in the company crossed the 30% ceiling, meaning that trading in the stock – via the Hong Kong-Shenzhen stock connect channel – had to be suspended. But with the recent scandal and a dive in net profit for the first half – down 63% from a year earlier – that threshold is no longer under threat.

Gao: not keen on questions
Maybe Mark Twain was right when he talked about ‘lies, damn lies and statistics’. Certainly the maxim has merit in the case of Wang Baoan, a man who held the post of director of the National Bureau of Statistics for less than a year in 2015, before being exposed for deceit and corruption.

Wang was at the bureau at a time when China’s stock market was in meltdown mode. Appearing at a press conference at the end of January 2016, he was in feisty mood, extolling the health of the Chinese economy and dismissing claims that a harder landing was unavoidable. Rejecting his reassurances on the health of the A-share market, shares still dropped a 6% during his media session.

But an even more unexpected denouement would follow. Three hours and 40 minutes later, the Central Discipline Inspection Commission announced that Wang had been detained on “severe disciplinary violations”.

That was a dubious new record, Beijing News pointed out: the fastest time ever for a senior official to be cuffed after having made a public appearance.

Wang was actually a lot less confident about the outlook than his comments to the press had suggested too.

In fact, when anti-graft investigators arrested him, they found that he had already packed his suitcase, Beijing News says.

Also in his possession: two different passports and two sets of first-class air tickets, one for a flight to Paris and the other to Frankfurt.

Apparently he had been planning to flee the country that night. His mistress was arrested the same day in a VIP lounge at Beijing’s airport.

Born in 1963, the financial technocrat began his career in the State Administration of Taxation before moving to the Ministry of Finance in 1998, where he held several positions, including a role as secretary to former minister of finance Xiang Huaicheng. In 2012 Wang was promoted to a role as one of the country’s vice finance ministers, before getting his next appointment to run China’s statistics bureau.

Most of his crimes were committed during his spell in the ministry of finance, where he served as a key decisionmaker – allocating state funding and giving approvals for new projects.

One of Wang’s pay-offs was a villa next door to the Diaoyutai State Guesthouse in Beijing. The bribe – from a real estate developer – was worth more than Rmb50 million ($7 million). In a confession shown by state broadcaster CCTV last year, Wang explained how easy it all was: all he needed to do was “put a little circle” in a document, giving the green light to another property project in Jiangsu.

This was just one of the bribes that Wang received. And documents published by a court in Hebei late last month revealed that he was the recipient of another highly unusual gift from another corporate crony surnamed Guan.

According to National Business Daily, which cited the court ruling, Guan was the boss of an electronics firm in Shandong. He wanted to approach Wang in the hope of subsidies from the ministry of finance. After careful research, Guan discovered that Wang – who was in his 50s at the time – had lamented to friends that he had no son to carry on his family’s bloodline. So Guan paid a surrogate mother Rmb3.5 million to help Wang get the male heir he wanted.

In fact he got more than one son: two boys were born, the first in May 2015 and the second in January 2016.

In return, Guan’s firm won government subsidies worth more than Rmb90 million.

But only a week after his second son was born, Wang was put under investigation for corruption and he is currently serving a sentence of life imprisonment for taking bribes valued at more than Rmb150 million. All of his personal property, including the villa, has been confiscated by the state.
The 75-minute Skype call between Pan Jianwei in Beijing and his former doctoral supervisor Anton Zeilinger in Vienna on September 29, 2017 was anything but ordinary. Supported by a Chinese satellite installed with a quantum device, the exchange was supposed to be private because any attempts to hack, interrupt or eavesdrop were scientifically bound to fail. And yet it was also very public moment, as physicists and governments around the world were all watching, knowing its success marked a technological breakthrough that could shape the next century.

Until now, cryptography has been all about creating mathematical puzzles that are beyond any computing power to solve. But the call between Pan and Zeilinger was different because it was safeguarded by the laws of quantum physics. One key theory is that light particles – also known as photons – can take on a state of superposition, meaning they can represent multiple combinations of zeros and ones simultaneously. Such quantum states, also known as quantum bits or qubits, are fragile. The implication is that if a hacker tries to tamper with an encrypted quantum exchange (where the decryption key is in photons over fibre optic) the qubits will be altered, leaving behind a telltale sign of the unsolicited activity. To all intents and purposes, messages sent through quantum communication systems have existed since at least 2004, according to Inside Science, a US online news outlet. But they worked only across short distances, restricted by how well they manipulated the law of quantum entanglement. The call between Pan and Zeilinger, however, demonstrated the possibility of ground-to-space quantum teleportation, stretching the permissible range of quantum entanglement to a record 7,600 kilometres.

“At a time when most practitioners were still happy to get quantum information safely across a lab bench, Pan was already starting to think about how to teleport it across the planet,” commented Nature, a leading science journal, adding that the feat was made possible by a satellite that Pan proposed to build back in 2003 as part of his vision for a global-scale quantum internet. Should Pan’s grand vision be realised, the world’s quantum computers – which process massive and complex datasets more efficiently than classical computers – would then be connected on a single grid, ushering in an era governed by artificial intelligence and machine learning.

The US is still ahead in quantum computing: Google last year unveiled a quantum processor with 72 qubits; and IBM has a quantum processor capable of manipulating 50 qubits. Chinese researchers are now working on 24-qubit processors but are striving to catch up quickly. Pan’s team achieved ‘only’ an 18-qubit entanglement last year.

Hailing from a rural area in the eastern province of Zhejiang, Pan, 49, was born before the era of
China’s reform and opening up began, and was brought up in great poverty. “Happiness was that coat of lard on the corn paste,” he once told a group of students at Tsinghua University.

But his childhood was not short of inspiration, thanks to his parents who he says always gave him free rein to follow his heart and nurture his inquisitive scientific mind. He was offered a place at Zhejiang University that would have enabled him to bypass the stressful college entrance exam (gaokao) – but turned it down because he didn’t want to major in economics and management. Instead he sat the gaokao and got his desired place at the University of Science and Technology of China (USTC), also known as China’s Caltech. Here he studied modern physics and as an avid reader of Albert Einstein developed a huge interest in quantum mechanics.

Einstein had a profound effect on Pan during his early years. “Einstein’s prose… makes me feel that I can derive from simple facts universal principles, which are constant – present and future,” Sohu.com quoted Pan as saying.

At the age of 26 Pan furthered his studies at the University of Vienna in Austria and worked at a lab that was run by Zeilinger – the scientist at the other end of the 2017 satellite call.

“When Pan came to me as a young student, he was a theoretical physicist. He had not done any experiments before. But I very soon realised he had the gift for doing experiments,” Zeilinger told China Daily, noting that Pan was highly motivated in finding solutions to problems and pushing the frontiers of science. He was particularly impressed with Pan’s ambitions for his home country, recalling that on the first occasion they met, Pan said his dream was to build in China a world-leading lab like Zeilinger’s.

Pan’s dream came true in 2001, when he returned to his alma mater USTC and established a quantum physics laboratory with funding from the government. It soon became the training ground for quantum physicists. Many of its graduates later attended the best science schools in the West.

According to Chinese media, Pan occasionally gives lab tours to Chinese leaders, including President Xi Jinping, who takes a keen interest in his work. During a grand ceremony to celebrate the 40th anniversary of China’s reform and opening-up last December, Pan was one of the 100 Chinese nationals honoured as a “reform pioneer”.

Of the different quantum technologies, Pan’s team focused on information teleportation, a process reminiscent of the movie Star Trek, where characters are ‘beamed’ off spacecraft to the surface of planets. What interested him at the time was the physical limits of such communication and the ways in which potential disruptions (such as noise and light) could be minimised. The quest drove his team to conduct feasibility tests to evaluate the circumstances in which photons would lose their entanglement, sparking a multiyear rivalry with Zeilinger’s team at the Austrian Academy of Sciences. “They would compete fiercely to break records for transmitting entangled photon pairs across ever-wider gaps, and in ever-more extreme conditions, in ground-based experiments,” observed Scientific American, a magazine.

The turning point came in 2016 when Pan led the Chinese to launch the world’s first quantum-communication satellite, named after Micius, a Chinese scientist and philosopher (who is said to have conducted an experiment to prove that light travels in straight lines during the Warring States period 2,200 years ago).

Pan was convinced that satellites and space-based links could be an ideal carrier for quantum communications because signal decay is drastically lower in a vacuum.

Pan managed to race ahead of Zeilinger and tested this theory, helped by the fact his ideas were embraced by the China National Space Administration, reports Scientific American. By contrast Zeilinger’s proposals were mired in a bureaucratic swamp at the European Space Agency.

The following year saw an end to the competition between the duo as they joined hands again to conduct experiments using Micius, which orbits the Earth at an altitude of 300 miles. That included the un-hackable video-conference call between Beijing and Vienna. The same day Pan also unveiled the 2,032-kilometre QKD network between Beijing and Shanghai, the world’s longest terrestrial QKD link. This ultra secure network was supported by 32 local quantum node stations, according to QuantumCTek, one of China’s main QKD device manufacturers, and in which USTC and Pan have an 18% and 11% stake respectively. The network has been used
by IT firms, banks and government bodies.

The Washington Post reported last month that China filed nearly twice as many patents for quantum communications technology as the US (the next closest country) in 2018, according to Patinformatics, an Ohio-based research firm. Leading a team of over 130 researchers, Pan has authored more than 270 articles that have received more than 32,000 citations as of June, adds the American Physical Society. (In 2018 Pan was recognised by TIME magazine as one of the 100 most influential people of the year.)

By 2022, China will launch more quantum communication satellites, including one at an altitude of 20,000 kilometres for covering a larger area of the earth’s surface. A Chinese manned space station is also scheduled to carry an experimental quantum-communications payload that will require human operators to maintain and upgrade, Pan told Science and Technology magazine.

The ultimate goal is a globe-spanning constellation of satellites for powering an ultra-secure quantum internet. Pan’s support base, not too surprisingly, includes the military industrial complex. State-owned China Shipbuilding Industry Corporation, which builds nuclear submarines, for instance, is working with Pan to develop quantum sensors capable of spotting stealth aircraft or warships.

Separately, the country is building a lab for quantum research in Hefei, costing Rmb7 billion ($980.19 million) in its first phase. The provincial government of Anhui will also contribute an additional Rmb10 billion to promote quantum science industrial development through a dedicated fund, China Daily reports.

No surprise, says the Washington Post, that Pan has publicly credited former NSA staffer Edward Snowden “for motivating China’s quantum research” and getting his work so much state backing.

Quantum technology is also one of the priorities listed in the “Made in China 2025” blueprint, a state-led industrial policy that aims to help China climb the technology ladder. Recruited through China’s “Thousand Talents Plan” (see WiC27) – a national strategy to lure Western-educated Chinese scientists home with personal perks, promises of research autonomy, as well as generous funding.

Pan was clearly in the right place at the right time. But his growing success has caught the attention of Washington’s hawks: not just because of his work, but also because of the state-sponsored ‘talent’ system that has fast-tracked his results and enabled him to recruit swathes of researchers educated overseas.

Indeed, there is an increasing view – especially as the Sino-US trade and tech war escalates – that Beijing’s scientific ‘talent’ policy is a state-backed means to raid America’s top seats of learning so as to instigate intellectual property theft and technology transfer.

This has led to a shake-up in US visa policy. For instance, in February Pan and his team were awarded the 2018 Newcomb Cleveland Prize – one of America’s oldest science awards – for their contributions in communication security technology (i.e. satellite-based quantum entanglement).

However, Pan’s application for a visa to visit the US was not processed, causing him to miss the awards ceremony in Washington.

“No one at the US embassy requested additional information from Pan to facilitate visa processing,” reported the South China Morning Post, adding that the quantum expert was the first mainland Chinese scientist to win the accolade in its 95-year history.

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A year ago, K-pop stars HyunA and E’Dawn took the unusual step of going public with their relationship. After dating in secret for two years, they didn’t want to keep their romance covert anymore. The next day they were fired by their record label.

“When we manage artists, we consider mutual trust and faith our top priority,” Cube, the record label, said in a statement. “We decided the trust is broken beyond repair, so we are expelling the two from our company.”

‘No dating’ clauses aren’t uncommon in the employment contracts of K-pop stars. The concern is that romances make them less compelling to fans and put commercial returns at risk. Of course, the Korean stars aren’t the first to face the issue. Even John Lennon saw the dangers, keeping his first marriage to Cynthia Powell a secret from Beatles fans for some time.

The dangers of springing a similar surprise on starcrossed fans is now becoming more apparent to Kris Wu, a hugely popular rapper-model in China.

Wu has provoked an anguished reaction from millions of his admirers after being caught out in a paparazzi video last week. In it he is seen holding hands with a woman later identified as Luyi Luna (her social media handle), a drama student from the Beijing Film Academy.

The news sparked uproar among his more ardent followers, many of whom claimed to be heartbroken over the rapper’s relationship.

Others went into sabotage mode, telling Wu that the 21 year-old actress was using the love affair to further her career. Many left messages on the film school’s official weibo account, petitioning it to expel Luyi Luna. Others blamed Wu’s recent weight gains on the budding relationship. Soon the cyber-bullying became so severe that the actress had to shut down her social media account a day after the news broke.

For many male pop stars in China, avoiding romantic entanglements, or at least keeping them under wraps, is an unspoken rule. Rumours of relationships are routinely swatted way by their press agents to avoid unsettling fans.

Few of China’s pop idols have learned the commercial cost of
falling in love – and declaring it publicly – than Lu Han.

In 2017, the star posted on his personal Weibo that he was in a relationship (still ongoing) with actress Guan Xiaotong. The post generated over a billion views – so much traffic that Sina’s social media platform crashed (see WiC384). But his fans weren’t in a congratulatory mood. After standard service on Weibo was restored, millions of fans unfollowed him and many hurled insults at Guan, saying the starlet was not worthy of his affection. And the romance went on to cost Lu a number of his endorsement deals. Companies like Ofo, the bike-sharing company, dropped him as brand ambassador. His concert tour, too, had to slash prices in response to slower-than-anticipated ticket sales.

“The first time a ‘high traffic star’ [celebrities with huge online followings] went public with his love life was also the first time the world saw how powerful the fans are,” reckoned Entertainment Capital.

“Lu Han’s experience shows what happens when a star openly admits that he’s in love. If it wasn’t for him, we would never have known how much money young girls are willing to spend on their idols, based solely on their fantasies.”

Much of the pop idol business is based on the fantasy of fans having pseudo-relationships with the singer. Cash-rich and impressionable, fans can – when they act in concert – hold enormous power over their favourite star. They coordinate efforts to support the stars online, making them appear more influential to brands, and they bulk-buy the products their idols endorse. In Wu’s case, that has meant downloading his album repeatedly to make sure it tops the charts (see WiC432). So to a significant extent, they can make – or break – an idol.

“He’s on his diehard fans, has always played up the sexual fantasy to get fans to spend money on him. Imagine if it was the same song but that he didn’t sing it – would they still pay their own money to make sure it becomes the biggest hit in the charts?” Entertainment Capital wondered.

Sensitive to risks like these, the rapper and his management company avoided comment when Wu’s relationship started to make headlines, refusing to confirm or deny the validity of the video.

However, before Luyi Luna shut down her own social media account, she published a post saying she was an admirer of Wu but that they were not in a relationship.

“For a lot of these celebrities and their management companies, they are now forced to choose between love and rice [material wealth],” Entertainment Capital concluded.

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**Shooting for the stars**

*Alibaba’s co-founder buys the Brooklyn Nets*

Paul Allen co-founded Microsoft with Bill Gates in 1975. Gates went on to become the
world’s richest man. Allen wasn’t quite as wealthy but after he left Microsoft in 1982, he had more than enough cash for his many different interests.

One of them was being a sports owner and in 1988 his trophy buy was the Portland Trailblazers, a basketball team in the NBA.

Fast forward to the present day and Alibaba’s executive vice chairman Joseph Tsai shows signs of following in Allen’s footsteps. Since helping Alibaba to grow into China’s biggest e-commerce brand, Tsai has invested in a string of American sports teams. And last month the 55 year-old also joined the highly exclusive club of NBA owners too.

Prior to Tsai the only foreign owner in the NBA’s 30 basketball franchises was Mikhail Prokhorov. It was the Russian billionaire who sold a 49% stake in the Brooklyn Nets to Tsai for $1 billion in April last year. Late last month the team announced that Tsai had agreed to buy the remaining stake, taking full control.

Tsai is paying about $2.35 billion for the Nets in a sale that the Wall Street Journal said would mark a new record for a professional sports franchise in the United States. In a separate deal, Tsai will also pay $1 billion for the Nets’ home stadium in New York.

The deal still needs approval from the NBA’s board of governors but that looks like a formality, as the association’s officials gave the green light for the Taiwan-born Tsai’s first investment in the Nets last year.

A statement from the Nets said the transaction should be finalised by the end of September, which means that Tsai should have full control of the team by the time the Nets travel to China to play two exhibition games against the Los Angeles Lakers.

Alibaba was founded in 1999 by Jack Ma and 17 “lakeside partners” (an interesting coincidence: Paul Allen and Bill Gates first met at the Lakeside Programmes Group, although the reference in the Alibaba context draws from the revered West Lake in Hangzhou, where the tech company is based).

Tsai was not one of Alibaba’s original founding team. But one of the original 18 – rather unfortunately for him as things turned out – dropped out a month after the group was founded.

But having got to know Ma and his co-workers well, Tsai took a gamble on the fledgling e-commerce startup: he gave up his lucrative position at a private equity firm to join the founders.

It is something of an understatement to say that taking the plunge has paid off: Forbes estimates that Tsai is now worth at least $10 billion.

That’s probably just as well: the Nets have spent heavily to bring in high-impact players since last year – such as Kevin Durant, who arrived from the Golden State Warriors on $164 million four-year contract – and fans are hopeful of more high-profile signings to come.

Tsai has made investments in other American sports teams as well: the WNBA’s New York Liberty, the MLS soccer side Los Angeles FC, and the San Diego Seals, a franchise in the new lacrosse league (Tsai was a lacrosse player when he studied at Yale). The combined properties represent roughly a third of his net worth, analysts think, a reflection, perhaps, of his passion for US sports. ■
When Beijing’s new airport opens in Daxing on September 30 it will be a temple to modernity.

The $12 billion hub – located to the south of the capital – will source solar and geothermal power to meet some of its energy needs; there are plans for nine in every 10 of its passengers to use automated check-in; travellers will even be able to keep an eye on the location of their luggage via e-tags.

But not everything about Daxing is quite so progressive.

Late last month the Beijing Transport Commission came in for criticism after it announced it had designed larger “female” spaces in the airport’s new car parking lot.

“The appearance and design is closer to the female style, the parking space is also more spacious,” a press release advised.

The statement described the women-only slots as a “humanising” measure for the new aviation terminal – listed alongside other features such as charging facilities for 600 electric vehicles and a vehicle tracking app to help people find their cars. However, it was the women-only parking spaces that captured most of the attention on social media with netizens soon calling the airport out for perpetuating sexist stereotypes.

“Why call them women’s spaces? Did I sit a female driving test? Are you going to give us women’s roads?” asked one weibo user.

“Why not call them learners’ spaces? Don’t assume all women are bad drivers and certainly don’t assume all men are good drivers!” fumed another.

The trope that women are poor, even dangerous drivers is pervasive in China. When a bus plunged off a bridge in Chongqing last year killing 15 people, the media were quick to blame the disaster on the driver of an oncoming car – a woman (see WiC431). Such was the frenzy that some netizens called for her to be executed. Yet a few hours later it became clear that it was the driver of the bus – a man – who was at fault.

In the aftermath of the case it was pointed out that gender was often cited in the headlines of traffic accidents involving women. But when men are involved, little attention is paid to their sex.

State broadcaster CCTV went further, highlighting that studies showed women drivers were actually safer than their male counterparts – a claim deployed recently by the China State Railway Group to explain why it was training its first batch of female bullet train drivers.

A spokesman for the group told Xinhua that modern trains require less physical strength to drive. “Women are more detail-oriented, which gives them an advantage,” he said.

Video footage taken from security camera in a car park in Shenzhen might also back that theory up. It showed a woman getting out of her car to measure the width of a narrow-looking parking space to work out if her vehicle could fit into it.

Some netizens praised the woman for being so methodical. Others – often men, it seemed – criticised her for not being able to do it by sight.

In fact the controversy over designated parking spaces for women is nothing new. In WiC45 we reported on a similar backlash after a shopping mall in Shijiazhuang designed a section of its car park for ‘women only’. The spaces were a metre wider than the standard design and were painted bright pink. And in case more help was required trained attendants were on hand to guide female drivers into the spaces.
Photo of the Week

China take on Poland at the Wukesong Arena in Beijing at the FIBA World Cup – the Chinese narrowly lost by 79 points to 76

Going places

“The truth is I believe China will soon be leading the automotive industry in terms of technology and innovation”

Toyota boss Toyoda Akio told a group of Tsinghua University students that “I need people like you” as he unveiled plans for a joint research institute for green technology. Toyota’s sales in China grew 12% between January and July to 902,000 cars versus a broader market decline of 11.4%. Toyota already has partnerships in China with BYD, battery maker CATL and autonomous driving firm Pony.ai.

In Numbers

3.8%
The drop in value of the yuan versus the US dollar in August, the biggest monthly fall in more than a quarter of a century. As of Thursday it had strengthened slightly to 7.133 yuan to the dollar.

19%
Automotive glassmaker Fuyao’s year-on-year decline in net profit to Rmb1.5 billion for the first half of 2019. The firm’s factory in Dayton, Ohio – the focus of a new Netflix documentary made by Barack Obama’s production company (see WIC464) – contributed Rmb15 million of profits. That was a gain of 16% over the same period last year.

60%
The percentage of Chinese car buyers who will be younger than 30 by the year 2025, according to the market intelligence unit at Volkswagen. The current proportion of buyers in this age group is about 25%.

$140 billion
The approximate amount of consumer loans that Alipay has made since it launched its Huabei revolving credit line in 2015, according to a company source that spoke to the Wall Street Journal. Huabei is embedded in Alipay, Alibaba’s mobile payments offshoot.

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