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OF BUSINESS

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Digital Dynasties

**As China's tech giants expand and diversify,
a new era of conglomerates is dawning**

-
- China scores a victory with the Asian Infrastructure Investment Bank
 - Can the Made in China 2025 plan overhaul Chinese manufacturing?
 - Haier CEO Zhang Ruimin's offbeat management philosophy

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Cover Story

20

The New Empire Builders

With Baidu, Alibaba and Tencent branching out into new areas, China is witnessing the rise of a new breed of digital dynasties

6

China Data

From stats on China's online gaming revenues to tier-one home sales, the numbers you need to know

10

China Insight

Needing a Lift Up

A persistent provincial divide remains in China despite decades of government intervention

27

China Insight

Revenue Streaming

Expensive investments and licensing agreements are putting pressure on China's culture of free online music and video

44

China Insight

Banking on Development

The China-led AIIB looks to be a win for both Asia and China

8

Snapshot

China's Growing Cities

The process of urbanization in China has been one of the most significant in history

City	2000	2010	2015	Growth
Chengdu	16,133,000	24,378,000	31,270,000	41%
Guangzhou	7,206,000	12,478,000	18,428,000	54%
Shenzhen	1,212,000	10,321,000	16,428,000	67%
Xiamen	2,600,000	4,428,000	6,728,000	62%
Tianjin	10,128,000	14,428,000	21,428,000	57%
Shanghai	16,428,000	24,428,000	31,428,000	47%
Wuhan	7,428,000	12,428,000	18,428,000	37%

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China Insight 36

Hunger Games

Despite a policy of grain self-sufficiency, China has a growing appetite for the world's food

China Insight 32

The Chinternet of Things

Can China be a global leader in the Internet of Things?

42

Business Barometer

Cooling Optimism

Businesses remain confident in the face of difficulties, but only just

54



C-Suite

Zhang Ruimin, CEO of Haier, on what it takes to keep innovating at the world's largest white goods manufacturer

57



The Thinker Interview

Francesca Gino, author of *Sidetracked*, on how to stick to a plan of action

60



Q&A

Author and tech entrepreneur Martin Ford tells us what to expect from impending workplace automation

64



C-Suite

Melissa Yang, CTO of Tujia, explains how to make a sharing economy business model work in China

China Insight 48

Sky's the Limit

Shenzhen's DJI is the world leader in the nascent consumer drone market. How did it get there?

China Insight 2015

Made in China 2.0

As manufacturing in the country struggles, China's leaders want to move it up the value chain

Downtime

Game On

With the lifting of a 14-year long games console ban, Sony and Microsoft are finally taking on the mainland video game market

67 70

Bookshelf

Matthew Crabbe, Director of Research, Asia-Pacific at Mintel, tells us which books give a reality check

The New Economy Versions of GE

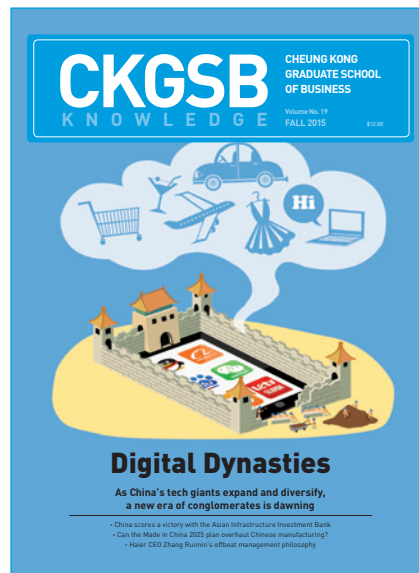
What would you think if someone told you that Google, Facebook and Donald Trump's real estate company have set up a strategic alliance? Although it is probably unimaginable in the US, alliances like this are being forged everyday in China. In recent days, Baidu, Tencent and Wanda (a search engine company, a gaming and social media company and a real estate giant, respectively) finally launched their much vaunted online-to-offline (O2O) venture, termed Ffan. The key driving force is to enter retail and e-commerce, territory dominated by Alibaba.

If you look closely at any big company in China—be it the big three internet giants, Baidu, Alibaba and Tencent (BAT), or the likes of LeTV (like Netflix), Fosun (like Berkshire Hathaway) or Wanda—it would be hard to place a finger on the one area that they dominate. They are starting to look more and more like, say, a GE, albeit most of their businesses are in the digital space. Alibaba is perhaps the best example of the rise of digital conglomerates in China. While it continues to dominate the e-commerce space, Alibaba is making rapid strides in the world of internet finance, cloud computing and big data applications, mapping, online-to-offline retail, video streaming and even completely unrelated industries such as film making and soccer.

We at *CKGSB Knowledge* have been tracking these developments with much interest. In our cover story this issue we take a look at this curious trend of the rapid diversification of China's New Economy companies. How do these companies go about deciding what areas to get into? Is there a method in the madness? To understand this phenomenon, please turn to page 20.

While Chinese companies have started achieving global dominance, a lot of them are often accused of lifting ideas from the West. In this issue we turn the spotlight on a Chinese company that bucks this trend. The Qingdao-headquartered Haier has not only achieved world-class status, but it has also pioneered several business model innovations and management ideas that are starting to earn the attention of management academics in the West.

After a several-month long effort, *CKGSB Knowledge* finally got the very rare opportunity to sit down with the man who started it all, Zhang Ruimin, CEO of Haier, at the company's headquarters. Zhang, who has been heading the company for more than three decades, has led it through a remarkable transformation from a bankrupt refrigerator manufacturer to the world's leading white goods



manufacturer. In the interview on page 54, he shares secrets from this remarkable journey and also his own management philosophy and leadership style that is starting to draw leading global academics to Qingdao.

If you are outside China, chances are that your impressions of the country are dominated by visions of gleaming cities like Shanghai. On page 10, we turn the spotlight on China's provincial divide and the less-developed cities, and ask the crucial question: will they ever catch up?

Globally many people often think of China as the country that makes cheap products, but that might change soon. China recently unveiled an ambitious plan to move its industry up the manufacturing value chain. On page 15 we demystify for you the ambitious Made in China 2025 plan.

In our interviews section, we bring you an eclectic mix of interviews: tech futurist Martin Ford on how the robots will take away all our jobs; Tujia cofounder Melissa Yang on how 'China's Airbnb' is different from Airbnb; and *Sidetracked* author Francesca Gino on why our wayward mind distracts us from our plan of action.

I am happy to announce that you can now find and install the *CKGSB Knowledge* app and read this magazine and our archives on your smartphone and tablet. Please download it from the app store. If you are on WeChat, please search for 'CKGSB' to find us. (Those who do not know what WeChat is, it is time for you to find it out!)

I hope you enjoy reading this issue of our magazine. As always, please feel free to email us at ckgsb.knowledge@ckgsb.edu.cn if you have any suggestions and comments. We will publish them in our future issues.

Yours Sincerely,

Zhou Li
Assistant Dean, CKGSB

For more insights on the Chinese economy and business, please visit the *CKGSB Knowledge* site: <http://knowledge.ckgsb.edu.cn/>



China Data

The stats you need to know

What's in the Vault?

China's foreign currency reserves fell by \$40 billion in Q2 of 2015, following a record drop of \$113 billion in the first three months of 2015.

Date	Amount
September 2014	3,887.70
October 2014	3,852.92
November 2014	3,847.35
December 2014	3,843.02
January 2015	3,813.41
February 2015	3,801.50
March 2015	3,730.04
April 2015	3,748.14
May 2015	3,711.14
June 2015	3,693.84

Unit: Billions of US Dollars

Source: State Administration of Foreign Exchange



Online gaming revenues continue to rise, driven primarily by the booming popularity of mobile games.

Source: iResearch



Key to the City

Home sales volume in China's tier-1 cities, including Shanghai and Beijing, surged **42.9%** in the first half of 2015 from a year earlier. Sales in tier-2 cities also enjoyed an increase of **16.9%**.

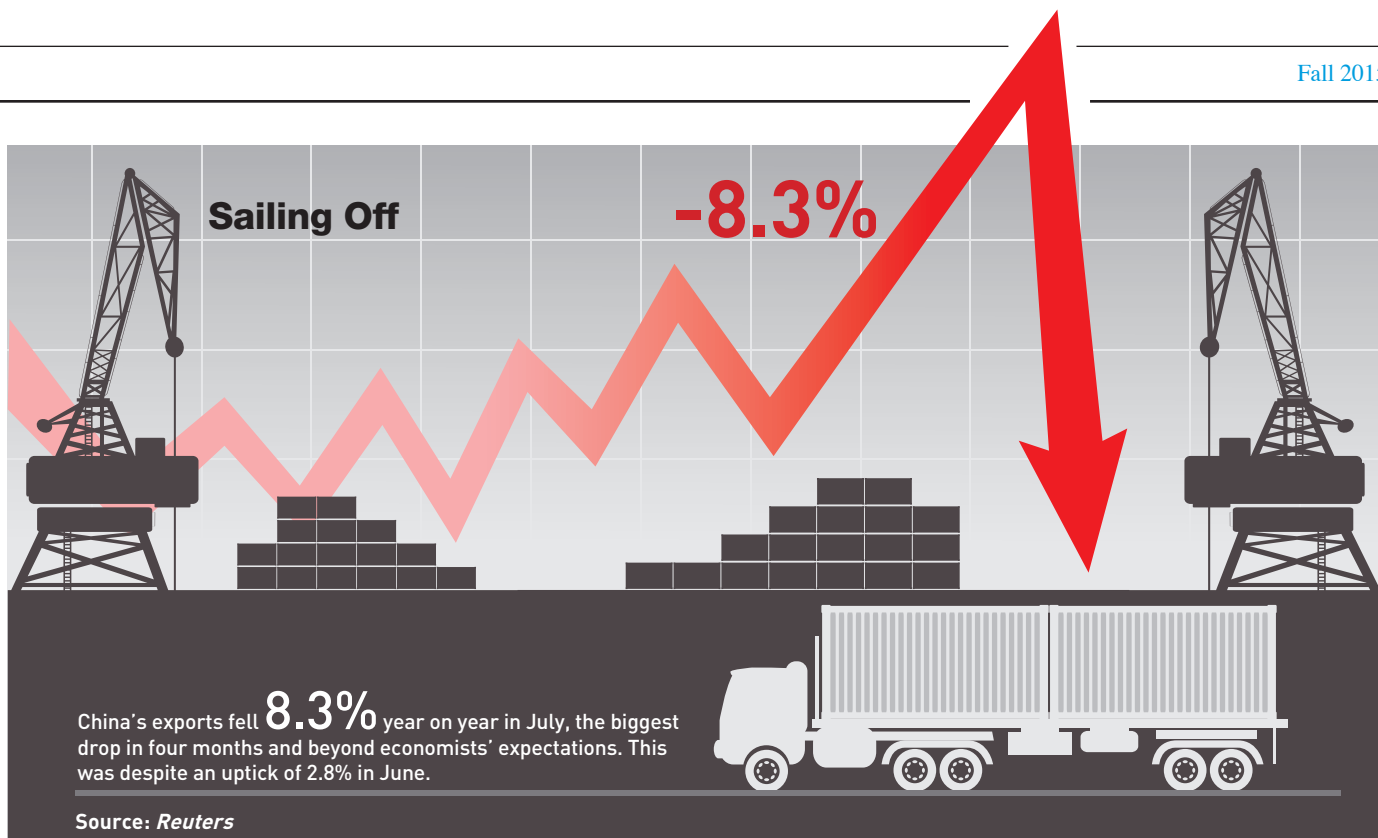
Source: *Shanghai Daily*

China is planning to invest up to **€10 billion** in Europe's new infrastructure fund, which is currently valued at **€315 billion**.



Building Funds

Source: Reuters



Shopping Spree



Source: Reuters

Shopping Around



Source: Ming Tian Di

Getting the Job Done

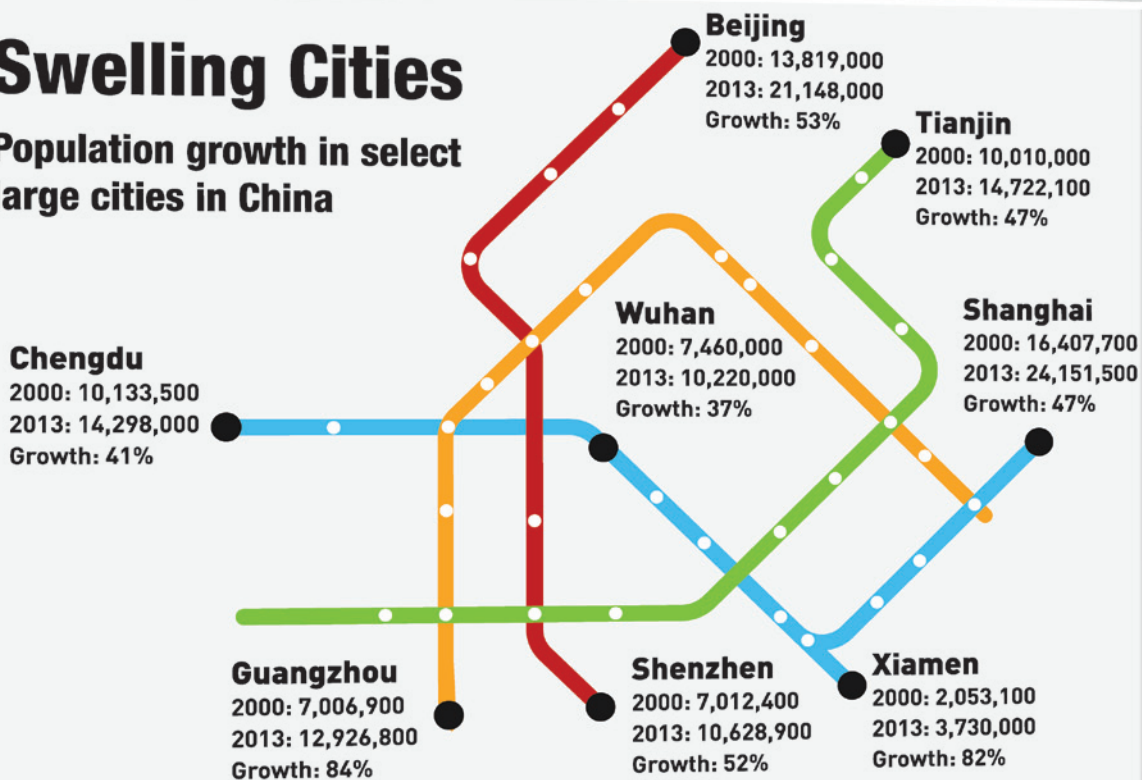


Source: Xinhua

A TALE OF GROWING CITIES

Swelling Cities

Population growth in select large cities in China



Sources: UN Data, China National Bureau of Statistics, China Labor Bulletin, Municipal Governments

For the last two decades, China's cities have exploded in size, the result of the largest and fastest migration in human history as hundreds of millions of people have moved from rural to urban areas in search of work and a better future. This urbanization process has had incalculable implications for Chinese society, economy and environment, as well as for the global economy, with Shenzhen, for example, rising from almost nothing to become one of the world's leading economic hubs. And this process is still ongoing and nowhere near finished—with over half of China's people now city dwellers, the United Nations expects China to add a further 292 million people to its urban population by 2050.

China's urban population

53.2%

South Korea: **83.8%**

Japan: **92.5%**

India: **32%**

US: **82.9%**

Number of migrant workers in China

274 million

A LIFT UP

Can China's less-developed regions ever catch up with the coast?

By Hudson Lockett



It is a hot summer morning when Mr Chen and his family arrive at the Bund—and hazy to boot. Hailing from the inland prefecture of Chongqing, Chen moved out to the coast to follow his boss, who had found business opportunities near Shanghai in the neighboring prosperous province of Jiangsu. But today as barges pitter by below the iconic skyline of Lujiazui, Chen says, “We’re here for fun.”

Like many before—and no doubt after—Chen was drawn from his inland hometown to the prosperous eastern corridor by the lure of greater economic opportunities. The numbers are on his side: The chief beneficiaries of China’s three-decade economic boom have been the provinces on China’s southern and eastern coasts, with booming metropolises such as Guangzhou and Shanghai acting as advertisements within China for all that is modern and new.

But these gleaming coastal skylines obscure lagging development inland. There, provincial economies reliant on cheap labor and low-value-added manufacturing are being left behind as China’s east transitions toward an e-commerce and services-centric model.

Today more than ever, Deng Xiaoping’s decision to let some get rich first begs the question of whether the rest ever will. Programs targeting inequality through spending on infrastructure and other development initiatives have helped boost GDP in China’s west, center and northeast, but the long-hoped-for trickling down of wealth from such government spending has yet to emerge.

“Build roads if you like,” says Jane Golley, Associate Director of Australian National University’s Centre on China in the World, whose research focuses on regional development. “But if there’s no market at the end of it... it can be very wasteful.”

State of Nurture

While market mechanisms may have spurred inequality, neither Mao nor Deng began with a blank slate. The now-thriving cities of Shanghai, Fuzhou, Guangzhou, Ningbo, Xiamen, Tianjin and Hong Kong

“

[Inland provinces’] economic growth has been more or less driven by the energy industry and infrastructure development

Lu Ding

Visiting Senior Research Fellow
Singapore National University

first became littoral leaders of industry following the Opium Wars, when they became treaty ports after the Qing Dynasty’s defeat by the British Empire.

These cities’ coastal locations and commercial infrastructure made them ideal hubs for international trade, but after the founding of the People’s Republic of China in 1949 these strengths became problems. Mao Zedong condemned the concentration of virtually all economic capacity on the eastern seaboard as “irrational” in light of the inland provinces’ lagging development.

Mao’s development strategy for the interior was bolstered by geopolitical devel-

opments when China’s ties to the Soviet Union became strained, and calls to establish a “Third Front” to fall back to inland should invasion occur helped direct state spending to industrial development away from the coast. Though short of Mao’s goal of moving 90% of heavy industry inland, the interior’s share of industrial output eventually rose from 31% in 1953 to 46% in 1978, according to Golley’s research.

Market Nature

After Mao died in 1976 and Deng Xiaoping assumed leadership of China, the Chairman’s inland-focused development plans were quick to go.

“The high cost imposed by the inefficient relocation of industry to remote, underdeveloped areas was one of the many problems that called for dramatic changes to China’s economic system,” Golley says. Ever the pragmatist, Deng argued that “since conditions for the country as a whole are not ripe, we can have some areas become rich first. Egalitarianism will not work.”

Deng kicked off coastal development by announcing the Open Door Policy in 1978 and establishing special economic zones in the coastal Fujian and Guangdong provinces to encourage foreign direct investment. This shift was officially endorsed with the adoption of the Coastal Development Strategy in 1988, Golley says, and by 1995 the region accounted for 65% of industrial output in China. Historical, geographical and cultural factors helped make industrial bases there bigger and better than elsewhere.

“A ‘natural’ consequence of economic development is that it compounds these advantages, as improvements in transport linkages between regions make it possible for firms and workers to move to towns with the largest markets,” says Golley.

That can result in one region emerging as an industrial core that grows richer as other regions on the periphery lag behind—though Deng always intended coastal development to spread inland. He suggested that something would have to be done about it by around the turn of the millennium.

Policy Prophecy

Thus in 1998 the government of Jiang Zemin and Zhu Rongji began promoting a strategy of “Great Western Development”. The brunt of these reforms were aimed at getting provinces in the west of the country up to economic speed with their more advanced coastal counterparts. But the kind of economic environment that helped the latter thrive had already changed drastically.

That prompted Zhu to also embark on a campaign of radical reform in the state sector during the late 90s that laid off huge numbers of workers at state-owned enterprises (SOEs), which were either shut down or merged to make larger conglomerates. SOEs had always had a larger presence in China’s central provinces, and so they were hit harder by the new reforms than the private-sector-centric east coast.

Lu Ding, a visiting senior research fellow at the East Asian Institute of Singapore

National University, says the draw of big eastern cities’ ample work and higher wages was and remains hard to resist for those living inland. “Generally those more prosperous areas attracted more capital inflow, labor inflow—not only investments, but a more productive labor force. It was a drain on the other provinces,” Lu says.

The SOE reforms also hit China’s northeast hard thanks to its traditional focus on heavy industry and reliance on government planning. In response, the government of Hu Jintao and Wen Jiabao announced a second regional development policy plank to “Revitalize Northeast China” in 2003. Shortly thereafter the Hu-Wen administration announced the “Rise of Central China” development drive with similar goals in mind.

Rugged Reality

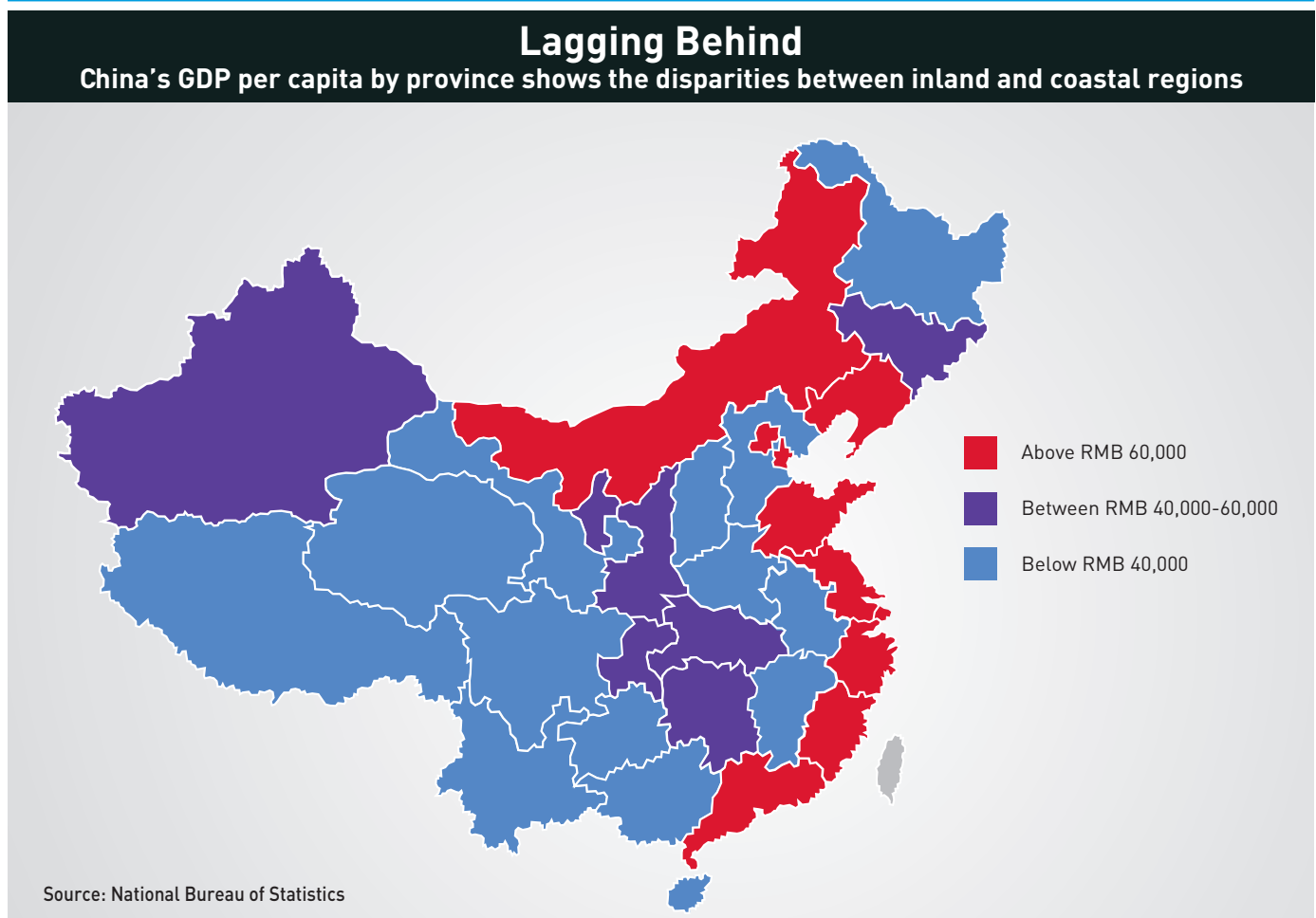
These policy drives were supposed to make China’s less prosperous regions into

booming economic belts. But when policy planners adopted market mechanisms, they also appeared to absorb other assumptions about growth that went unchallenged at the time—like the idea that any less-developed country or region could follow a universal route to becoming an advanced economy through industrialization.

Today those assumptions are under fire from skeptical development scholars who subscribe to concepts like dependency theory, in which perpetually poor countries provide cheap labor and natural resources to developed countries.

Under this rubric, developed countries seek to preserve their status by rebuffing attempts to level the playing field. When residents of China’s richer provinces protest suggestions they share education and welfare resources, they may be doing the same.

But more concrete are the physical fac-



tors obstructing policymakers' idealized development. Historically, those include rough terrain that increases the cost of developing infrastructure and industry, distance from coastal hubs of commerce and the resulting isolation that limits the flow of resources. When China opened up, its export-centric model of growth oriented itself out and toward the West and away from its erstwhile inland Soviet ally.

Infrastructure can help, but it can also distract, and resource development can benefit those in the provinces being supplied more than local living standards. A quantitative analysis of GDP on counties bordering either side of the boundary delineating western provinces from the rest by Jeffrey Warner at the University of California San Diego's School of International Relations and Pacific Studies found a positive effect of almost 20% on GDP resulting from Great Western Development policies.

Yet it also notes the boost may "only [be] demonstrative of increases in central government expenditures and not an increase in jobs or incomes." Lu notes that is often the case. "[Inland provinces'] economic growth has been more or less driven by the energy industry and infrastructure development, but not much else from other parts of the economy," he says.

Heading for the Hills?

The most significant measure taken to promote inland development might have occurred even before development of the west became a strategic goal. In March of 1997, the city and periphery of mountainous Chongqing was cordoned off from the rest of Sichuan province and turned into the fourth provincial-level municipality directly administered by the central government.

According to policy analysis by Lai Hongyi at the National University of Singapore, the move was intended to both facilitate the development of the Three Gorges Dam downstream on the Yangtze River and help the new administrative region spearhead inland development. But although Chongqing is now often referred to as the world's largest city, in truth it is largely rural: its core urban area accounts



The so-called success of trickle-down development is in fact not that much [of a contributor] to the real economy

Simon Zhao
Associate Professor
University of Hong Kong

for only about 1.1% of its land.

Chongqing's 340-square-mile urban area has a population of only about 6.8 million, but its total population was 28.8 million as of the 2010 census, down 1.7 million from 2000 thanks to the emptying out of its vast countryside as rural residents left home—not all of them for the nearby city proper.

Economic growth in Chongqing has been driven largely by investment-driven manufacturing, but Golley notes that it has always been "one of (or the) best-developed cities out west" thanks to its own historical legacy. During the war with Japan it was an interim capital for the Republic of China to which many coastal factories relocated. She says its current stronger links to the central government also likely

provide it with more lobbying power.

Yet even with historic weight to throw around, Chongqing lacks in foreign direct investment (FDI)—the kind that helped boost coastal provinces' growth in previous decades—when compared to other municipalities under the direction of the central government. Beijing's FDI was equivalent to less than half of Shanghai's nearly \$500 billion total in 2013 according to the State Administration for Industry and Commerce. But at just \$58.8 billion Chongqing fell short of even half the FDI of third-ranked municipality, Tianjin. Indeed, Chongqing's FDI only accounted for 1.7% of the national total that year.

Chronic Ailments

Not all the numbers for inland provinces come off as puny. Simon Zhao, an associate professor at the University of Hong Kong who specializes in urban and regional studies and planning, says that non-coastal provinces have done well in the past five years in terms of GDP growth.

"But currently things are bad because in the past five years, the so-called success of trickle-down development is in fact not that much [of a contributor] to the real economy," Zhao says. "Rather, they are basically in land development."

With the country stuck in what Zhao calls a deep recession, less developed regions are now in dire straits thanks to development policies that ignored provinces' real economies in favor of lucrative real estate deals.

That's on top of pay gaps. A 2013 study on the persistence of regional inequality in China by the Federal Reserve Bank of San Francisco broke down the factors contributing to inequality in real wages. It found that during a sample period from 1993 to 2011, about half of the cross-province real wage difference could be explained by differences in quality of labor, industry composition, labor supply elasticities and geographical location.

China's household residency permit—or *hukou*—system explained much of the rest. Imposed in 1958, this system's main impact was on rural-to-urban mobility and cross-regional migration. Enforce-

ment became less strict in 1978, but until 2003 a repatriation law meant that migrant workers could be forcibly returned to their home province and subject to fines and detention without the proper papers.

But while many provinces have all but abolished limitations on rural-urban migration, inter-provincial migration is still incredibly difficult, with the most populous urban centers like Beijing often adopting the harshest measures against migrant worker inflows.

Work and Wages

The San Francisco Fed also calculated the correlation between real wages and transfers from the central government to provincial budgets—only to find that there was none. In other words, as recently as 2013 funds dispersed to provinces for projects were not substantially improving local wages.

Meanwhile, the “Made in China 2025” (see the opposite page) program announced in February may put more pressure on inland provinces whose capacity for basic manufacturing is only beginning. The program is meant to move China’s manufacturing sector up the value chain by encouraging factories to produce higher-value-added products in fields like robotics. That means ending subsidies that favor low-end manufacturing and ratcheting up regulation.

“I’m not saying the government wants to get rid of traditional industries,” Stanley Lau, Chairman of the Federation of Hong Kong Industries, told news agency *Reuters* in June. “But with the actions they are taking and the policies they are launching, they’ll eventually kill traditional industries.”

Manufacturers that do move inland can get caught between government policy and market forces. In late 2014 a *Wall Street Journal* exposé revealed that because so many workers had left for work in more prosperous cities, at least 8 million students at vocational schools in Chongqing were being dragooned every year into “internships” at local electronics factories and forced to work for up to a year just to graduate—all sanctioned by the education ministry.



We’re not going to live to see a China without substantial regional inequalities in our time

Jane Golley
Associate Director
Centre on China in the World
Australian National University

Thinking Long-term

While the government has signaled its intention to address these issues, it isn’t clear much can actually be done from a policy standpoint. Lu is generally skeptical that the central government could undo what market forces have done.

“For regional development in China at this moment, the important thing is [the provinces] all need to focus on their own real economies, focus on what they can do,” he says. That includes agriculture and mining, as well as new industries like biochemistry, he says.

Golley points out that policy can help drive migration as it has for the western province of Xinjiang. Zhao was careful to add that measures needed to be taken to address unrest in that region and others where ethnic minorities are clustered,


which can stem from unequal distribution of development’s financial gains.

That is not to say China’s economic growth is destined to be undone by mounting regional inequality, or that the coast will remain the only rich region. It is true that strong growth in manufacturing labor costs driven by rising wages could undercut China’s role as a manufacturing hub. But a 2014 report by The Economist Intelligence Unit found that China remains highly competitive internationally, and estimated its labor costs would still be under 12% of US labor costs in 2020.

The report also confirmed that internal disparities in manufacturing labor costs were narrowing in China, suggesting that development policies based on assumptions about lower inland wages were unlikely to reproduce coastal successes. Regionally, China’s labor costs per hour are projected to grow to 177% of those in Vietnam and 218% of those in India by 2019. If these countries develop better supply chain infrastructure, they could attract substantial business.

But the report also singled out the less-developed provinces of Jiangxi, Henan and Hebei as attractive manufacturing destinations thanks to relatively low labor costs, more established infrastructure and large labor pools. That’s not quite the regional coverage Deng might’ve hoped for, but between them these provinces account for 16.5% of China’s population according to figures from the National Bureau of Statistics.

Nor is persistent inequality unique to China: different parts of the United States also suffer from wage and wealth gaps. But Golley is not optimistic about a quick fix for the issue in China. “Whichever way that goes,” she says, “we’re not going to live to see a China without substantial regional inequalities in our time.”

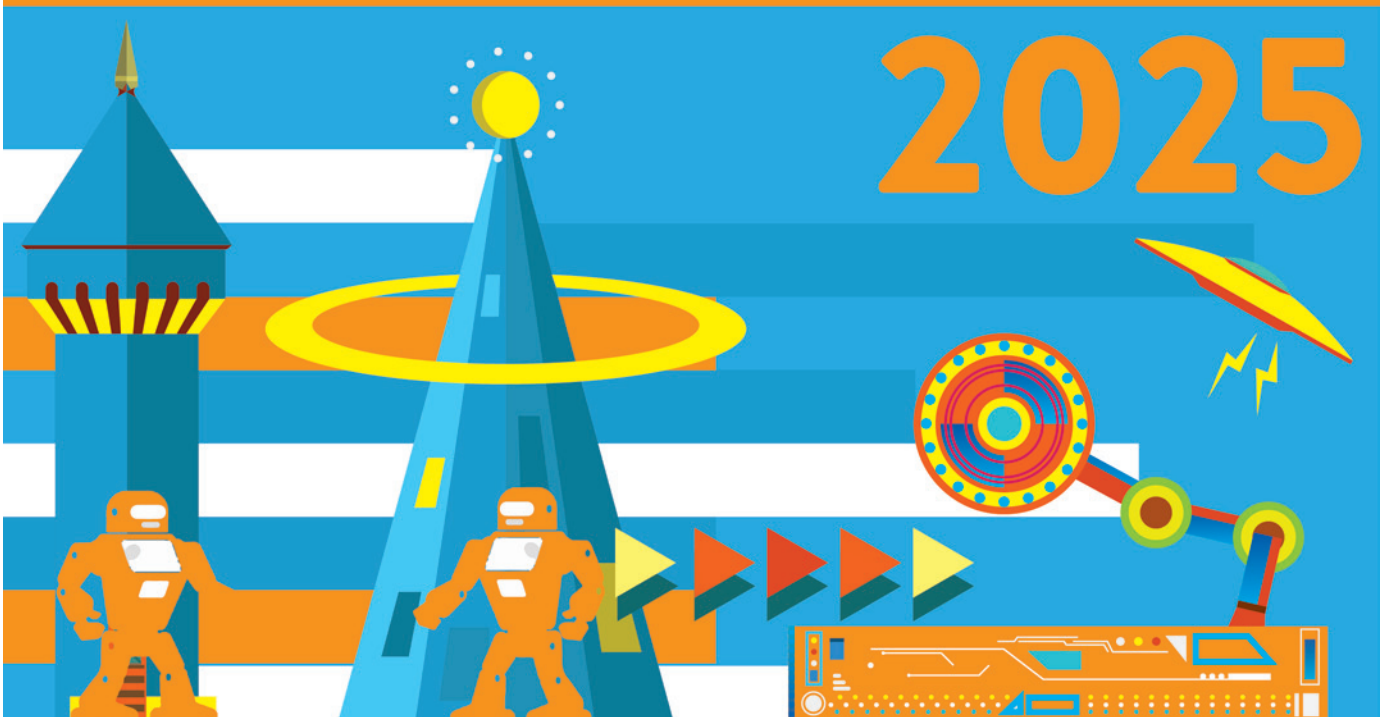
For Chen, on the Bund, the fact that Chongqing may never look like Shanghai doesn’t seem too troubling. Asked if his hometown could ever feature a futuristic skyline like that on the Huangpu River’s opposite bank, he smiles and shrugs. “Chongqing is already very beautiful,” Chen replies. 

Made in China 2.0



As its economy matures, China's leaders are now trying to move the country's manufacturing up the value chain

By Xin En Lee



From the late 70s onwards, the southern coastal city of Shenzhen has acted as a microcosm of the wider Chinese economy—from its humble origins as a collection of relatively insignificant towns to becoming a glittering metropolis and emblem of China’s manufacturing might, the developments the country has seen are all on display. And China’s leaders surely hope this will continue to be the case, with the city fast gaining a very different reputation as China’s incubator for a generation of exciting new manufacturers.

From BYD, the Chinese maker of electric vehicles, to Huawei Technologies, the telecoms equipment giant, genomics research firm BGI and drone maker DJI, Shenzhen is now home to an array of innovative companies that belie notions that China can only do cheap, low-value manufacturing.

That the government is staking their hopes on these companies providing an indication of China’s economic future was made clear when their industries were emphasized in the State Council’s Made in China 2025 (MiC2025) initiative—China’s most comprehensive and ambitious industrial plan to upgrade China’s manufacturing.

Yet the plan comes amidst a barrage

of bad news about the health of China’s economy and manufacturing sector.

As economic growth slows to a pace of 7% GDP growth, its slowest in a quarter century, the Caixin China general manufacturing PMI (Purchasing Managers’ Index), a major indicator watched by investors and economists for clues about the Chinese economy, posted a figure of 47.8 for July—below the 50 mark, the point that separates contraction from expansion, and the sharpest deterioration since July 2013. Despite some positive economic data coming out of the country in recent months, manufacturing has continued to languish in the contractionary territory that it has occupied for most of the year.

And with countries such as Vietnam and Indonesia slowly eroding China’s advantage of a huge and cheap labor force, manufacturers are bracing for even harder days ahead. As such, the government now faces a race against time to move Chinese industry up the value chain.

The Fine Print

MiC2025 aims to remedy China’s manufacturing problems with a comprehensive upgrading of the sector. The plan draws inspiration from Germany’s Industrie 4.0 as China aims to make use of technologies

like the Internet of Things, cloud computing and big data to upgrade its manufacturing. The initiative spans the entire manufacturing industry, including processes, standards, intellectual property rights and human capital, and has a strong focus on integrating production chains and factories.

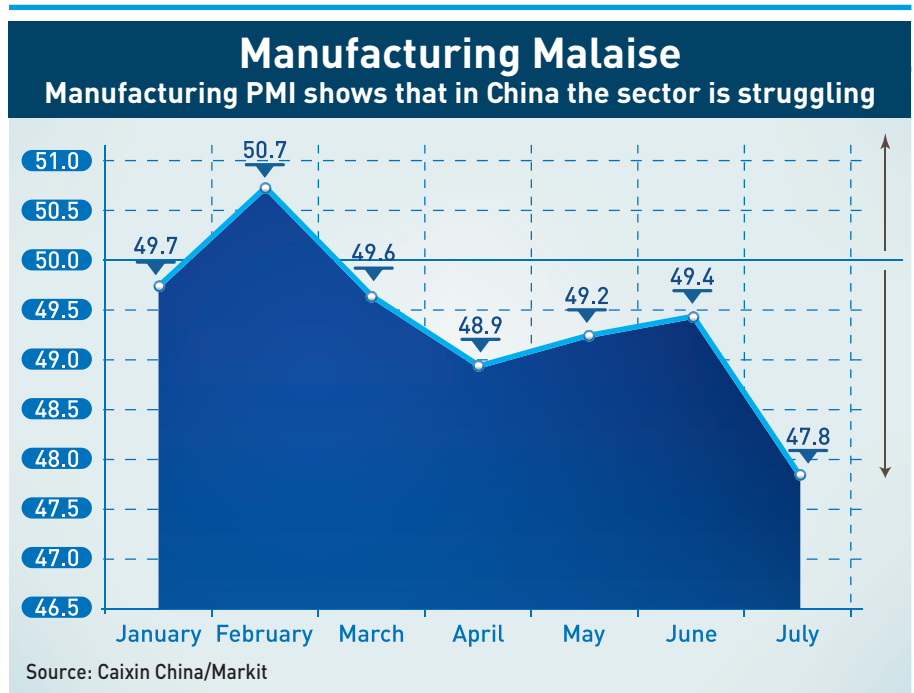
Authorities also announced that MiC2025 is the first step in a loosely defined three-stage plan to overtake rival manufacturing hubs such as Japan, the US and Germany by 2049—the 100th anniversary of the founding of the People’s Republic of China.

Like previous Chinese plans, the many goals which MiC2025 aims to achieve have been clearly spelled out. While the plan aims to advance Chinese industry, making it more efficient and integrated, it also seeks to foster innovation through the creation of 15 innovation centers by 2020, and 40 by 2025. Localization is another goal, with the plan aiming to raise the domestic content of core components and materials to 40% by 2020, and 70% by 2025.

Similar to previous plans, such as 2010’s Strategic Emerging Industries, 10 priority industries have been highlighted. These include new advanced information technology; automated machine tools and robotics; aerospace and aeronautical equipment; maritime equipment and high-tech shipping; modern rail transport equipment; new-energy vehicles and equipment; power equipment; agricultural equipment; new materials; and biopharma and advanced medical products.

However details have been scarcer on how the initiative will be implemented. Five follow-up policies have been announced, including Vice Premier Ma Kai’s role in leading the plan from the Ministry of Industry and Information Technology (MIIT).

But the other policies provide little detail on exact sums and policies to be expected. For instance, the One Plus X scheme involves the planning of “supporting programs” for MiC2025, and merely lists that these will include financing, finance and tax, talent and innovation. As for subsidies, *Xinhua* reported that each subsidy amount will not exceed RMB 50 million (\$8 million).



While some experts have called this a typical goal-oriented Chinese plan, Scott Kennedy, Director of the Project on Chinese Business and Political Economy at the Center for Strategic and International Studies, wrote in a commentary that he thinks that MiC2025 is a “significant departure from previous plans.”

“Although there will be problems with implementation... this plan is much better conceived and more appropriate for China’s situation than [previous plans],” he wrote, adding that he expects it to be “more coordinated and utilize a wider array of policy tools.”

Hu Quan, President of Research at the think tank China Academy of Industry 4.0, agrees that the plan is significantly different from other plans in its focus on manufacturing.

“Although it is conceived in a traditional way, this plan is different in that it is China’s first high-level plan that completely focuses on manufacturing,” he said.

Nis Grunberg, a PhD fellow at the Copenhagen Business School who researches the Chinese political economy and the role of SOEs, highlights that while naysayers might dismiss the plan, several factors highlight that China’s leaders have the impetus to carry out the plan.

“The plan is of very high priority. The creation of a leading small group under the State Council would improve coordination across interest groups and significantly push forward its implementation,” he says.

He adds that while the plan aims to make China a global competitor in manufacturing, security concerns would be a strong driver in implementing the plan.

“China is worried about national security and independence and they crave indigent information technology because they are concerned that every IBM chip or Cisco Systems telephone is a security risk. China lacks advanced technology in many areas, and is dependent on goods vital for its infrastructure, thus making high tech manufacturing a security issue.”

Automatized Innovation

Lately, doomsayers have been casting doubt on China’s reputation as the factory



Chinese manufacturing is only automated to a limited extent

Jost Wübbeke
Research Associate
Merics

of the world, with China’s leading exporter and world’s largest contract manufacturer Foxconn moving its assembly factories to India, and manufacturers steadily moving production to lower-wage economies like Cambodia and Vietnam.

But there is still no question that China is still the factory of the world. According to statistics from MIIT, the output value of China’s equipment manufacturing industry in 2013 surpassed RMB 20 trillion (\$3.2 trillion), accounting for one-third of the global total. Among the 500 major types of industrial products, China ranks first worldwide in terms of output in more than 220 categories.

Yet for all that, according to Jost Wübbeke, a research associate at the Mercator Institute for China Studies (Merics), most Chinese factories are still far from industrial automation, and a long way from reaching the MiC2025 vision. “China’s industry is in transition from Industry 2.0, which is mainly assembly lines, to Industry 3.0, which uses more industrial automation, electronics and IT. On the whole, Chinese manufacturing is only automated to a limited extent and is hardly digitized

at all,” he says.

Only about 60% of Chinese companies use industrial automation software such as Enterprise Resource Planning, he adds. The use of industrial robots is even less widespread, despite China now being seen as the largest and fastest-growing market for industrial robots. There are 282 industrial robots to 10,000 factory workers in Germany, as opposed to just 14 in China, according to Merics.

Using the example of energy storage technology as an example, Lilia Xie, a research associate for Boston-based research group Lux Research, which focuses on emerging technology markets, says that China’s level of manufacturing has improved in the past decade, but that the level of industrial automation remained a key problem.

“The quality has improved, but many in the industry report that China-made batteries still lag behind their South Korean and Japanese counterparts. In particular, the automation in second-tier Chinese lithium-ion battery factories is low, leading to poorer quality control,” says Xie, who covers the new energy sector.

China has been on an innovation push, most evident in its overseas filing of patents, which the government began subsidizing in recent years. Last year, China emerged as the highest climber in the rankings for patent filing in Europe, reaching fourth spot with an 18% increase from the year before. Huawei, China’s telecoms giant was the fifth most active applicant of patent filing.

Yet despite optimistic signs of China’s rise as an innovator, its patent applications appear to be of low quality. While China accounts for about 10% of patents filed to the European Patent Office, the proportion falls to about 2% when it comes to patents granted.

Research Resources

In the last decade, China has been ramping up its R&D spending. According to an OECD report last year, China is poised to be the world’s top R&D spender by 2019. While public R&D budgets stagnated globally between 2008 and 2012, China’s R&D

spending doubled, hitting \$257 billion in 2012. In comparison, the US spent \$397 billion while the 28 member states of the EU collectively spent \$282 billion.

But experts believe that government spending has not translated into significant results for better quality manufacturing. Xie notes that the huge amounts of spending have not prevented a lag in “basic technological knowhow”.

“China’s government has invested billions into the research and development of lithium-ion batteries as well as new energy vehicles, in particular electric vehicles and plug-in hybrid vehicles since 2001... but the quality of the technologies still appears to lag behind government efforts to promote them,” she says.

Hu attributes the failure to translate spending to significant gains in industrial upgrading to China’s penchant of involving only the “big guys”—the state-owned enterprises (SOEs).

Although it was “technically possible” for smaller outfits to gain access to subsidies and initiatives, Hu says that the policies named so far in MiC2025 suggested that the funding was going to go to SOEs, or large companies such as Huawei and Alibaba, adding that this was a typical Chinese approach of betting on those who had demonstrated success by achieving scale. But this might not be the best approach as larger companies, particularly SOEs, are often not as agile or willing to take risks as smaller companies.

“How can you expect the SOE worker, with a lifetime of working in hierarchy and structure, to be disruptive and innovative? It needs a culture of risk-taking and experimentation, and I don’t think the SOEs would be able to foster that sort of innovation,” says Hu. He adds that the lack of attention paid to fostering small and medium enterprises (SMEs) is the biggest weakness in the Made in 2025 China plan.

But Grunberg, whose research focuses on the role of SOEs, thinks that their capacity should not be so easily dismissed. He says that while SOEs will not be able to innovate as quickly as private companies, linking SOEs and private companies under the current mixed ownership reform plan is



The policy itself may not be so effective, but it’s given birth to an environment that may well help China reach Industry 4.0

Hu Quan
President of Research
China Academy of Industry 4.0

aimed at building genuine innovation capacity in the SOEs in the long-run.

“Did anyone think China could fly to the moon by 2013? SOEs were responsible for much of the technological development, so I think we should be careful to totally disregard their ability to innovate and build very advanced technology,” he says.

“Resources is rarely the issue for them, so when capacity and resources can solve a problem at hand, SOEs are probably good at it,” he adds.

Wang Qing, Professor of Marketing and Innovation at Warwick Business School, thinks that while SOEs are not good examples of innovation themselves, they could still have a role to play in making Chinese manufacturing more successful—by making ‘Made in China’ more global.

“SOEs could take a leading role in helping China compete abroad on the global stage,” she said, adding that they could gather resources abroad through acquiring companies and related technological know-how, rather than competing domestically with SMEs.

“They could pave the way to help Chinese companies make it abroad,” she added, citing the example of government support in Japan in helping Japanese companies such as Sony expand abroad.

Other experts think that human capital will be the most pressing problem for China in upgrading manufacturing. Dan Wilson, an economist at ANZ says that China’s growth model has focused on building the capital side of the labor/capital growth model, and less on the quality of labor. “China will face the issue over the next decade about how to bring up the human capital component of the equation to achieve their productivity and the goals of Made in China 2025.”

Making in China

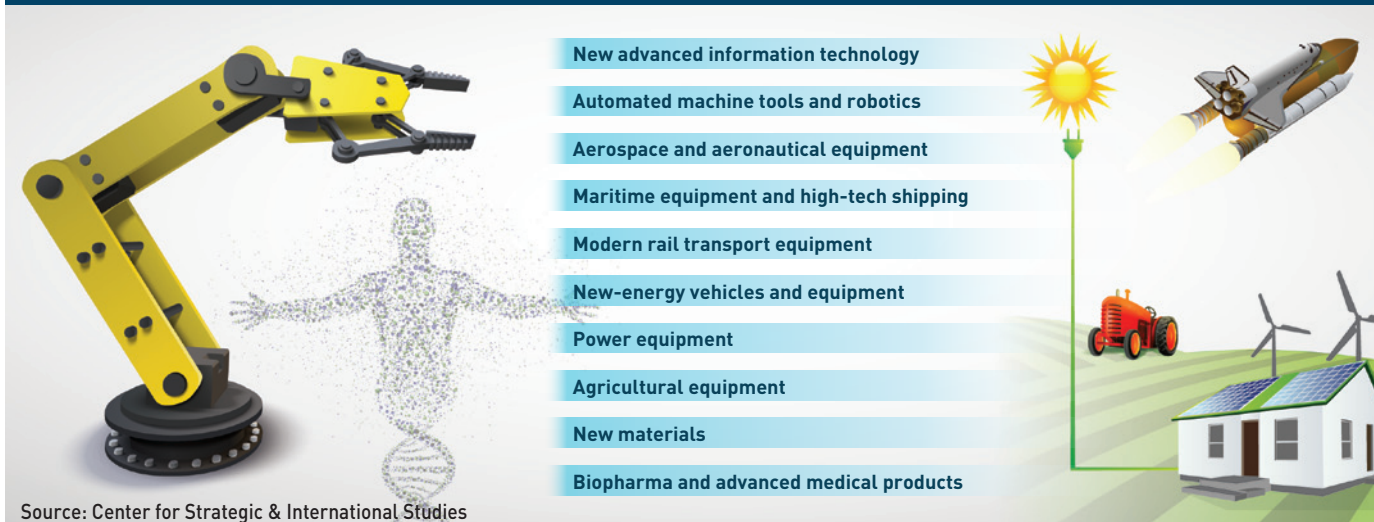
An indication of the implications for foreign companies of a China with a much-improved manufacturing prowess is already being felt in China’s aggressive pitching for high-speed rail projects around the world. There it has successfully edged out traditional train manufacturers such as France and Japan to secure large contracts, for example with its biggest overseas contract with Nigeria in a \$12 billion railway deal last year. If similar advances can be made in other sectors, the global ramifications could be huge.

But China clearly has a long way to go before it reaches Germany’s level of industrial production and innovation, as MiC2025’s name and details indicate. Of more immediate concern is what it means for foreign companies already on the ground in China, as China is intent on upgrading its manufacturers with government measures and incentives, presenting a full-on challenge to foreign MNCs.

Increasing Chinese demand and consumption will further brighten the prospects of Chinese manufacturers, who are better positioned to tap that demand than

Strategic Sectors

Priority sectors identified by the Made in China 2025 plan



Source: Center for Strategic & International Studies

distant rivals. In several of the priority industries which China hopes to dominate in, such as in biopharmaceuticals and renewable energy, Chinese manufacturers have an edge over foreign competitors because of their understanding of the Chinese regulatory climate.

But Kennedy pointed out advantages that multinational companies (MNCs) can look forward to in China upgrading its manufacturing capacity. “There will be greater investment and attention to the 10 industries, and MNCs that align themselves with these sectors and the general goals of this plan can benefit. There will be greater competition from Chinese companies... but it is a guarantee that MNCs will be needed to provide critical components, technology and management for this plan to work.”

A longer-term advantage, he said, for both the global economy and companies was that “if China successfully upgrades its manufacturing capacity, that will have also meant it has also likely improved its overall economic governance, including its financial and fiscal systems, strengthened the education system and increased access to varied sources of information.”

However Manuela Zoninsein, CEO of business intelligence firm Smart Agricultural Analytics, points out that the implica-

tions for foreign MNCs are not so clear-cut. “At a glance, Made in China 2025 may seem like a death knell for foreign machinery companies operating in China, but it isn’t that simple,” she says. “Government officials have yet to specify whether equipment that is designed, manufactured, or assembled by foreign companies on Chinese ground will make the cut. Locally registered subsidiaries and joint ventures of foreign companies are in the same boat.”

On the Up

Most industry analysts are cautiously optimistic about Made in China 2025, anticipating that the inflow of capital and unprecedented focus on manufacturing processes will at least improve quality and efficiency in China, although all are still waiting for more concrete details to see how these plans can be implemented.

Nick Duan, an analyst for Bloomberg New Energy Finance, says, “At the moment, the plan is more like a conceptual vision to me. I can say it should add a positive outlook for industries such as the solar industry, but with limited direct impact.”

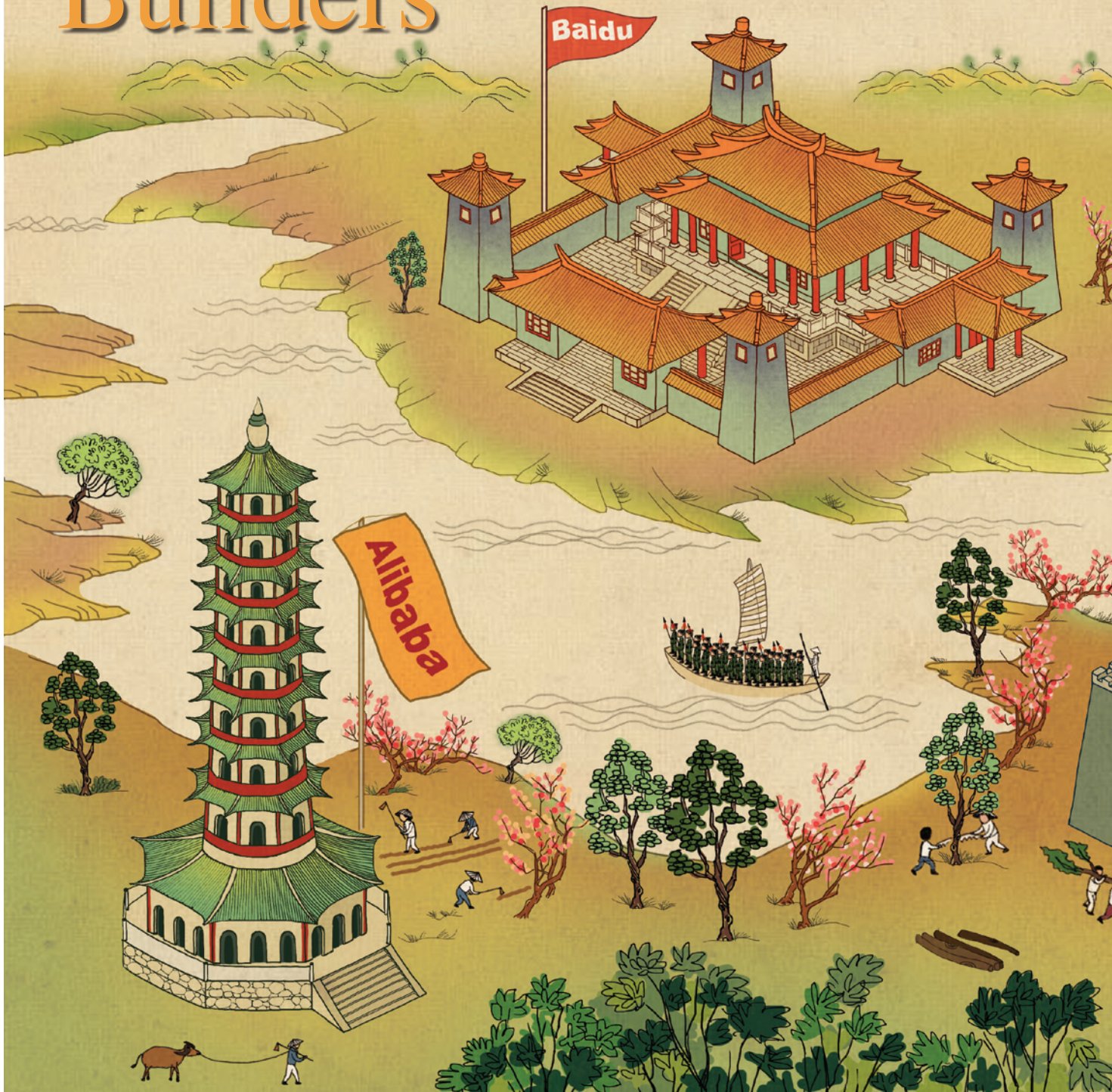
Meanwhile Zoninsein says she is “excited about the myriad ways this policy will trickle down and influence not just the Chinese agricultural equipment sector, but also the global sector.”

“Government funding will encourage adoption of agricultural machinery, and corporations will seek ways to scale and raise margins, and manufacturing will continue its steady evolution into industries that result in higher value-add products and services,” says Zoninsein. “These shifts will have immense impact on the world, especially other emerging economies that are beginning their own process of agricultural modernization and can look to China as a new, alternative model of development.”

But Hu is less optimistic about Made in China 2025. “In China, we have our own unique term for innovation and the commercialization of research which adds the term ‘government’ in front of it. That’s pretty symbolic of how the government sees innovation and research—it needs to be beneficial to the government. But that idea is in itself antithetical to innovation, which is why I am skeptical of Made in China 2025.”

“But what China has going for it is huge market demand, a huge labor force in which you can be sure that some creative sorts will come out of, and that the policy has created a buzz about innovation and manufacturing,” he adds. “The policy itself may not be so effective, but it’s given birth to an environment that may well help China reach Industry 4.0.”

The New Empire Builders



With Baidu, Alibaba and Tencent branching out into new areas, China is witnessing the rise of a new breed of digital dynasties

By Colin Shek



Jack Ma's mix of charm, drive and self-deprecation was on display as he addressed the Economic Club of New York in the Grand Ballroom of the Waldorf Astoria in early June. As club members tucked into a lunch of herb-stuffed chicken breast, mushroom risotto and baby zucchini, the Alibaba founder and Executive Chairman breezed through topics that ranged from his days as an English teacher back in 1988 in Hangzhou to the future of his e-commerce powerhouse.

One name stood out though when Ma listed a handful of American businesses he had learned from while nurturing Alibaba. Microsoft and IBM were unsurprising nominations, but it was the mention of General Electric that caught the eye.

With more than a century separating their respective foundings, the industrial conglomerate and China's largest online retailer would seem to share little in common. One sells power plants and jet engines, while the other is a mix of businesses resembling Amazon, eBay and PayPal. But as Alibaba expands into new areas, it too is beginning to resemble a conglomerate, and it is not alone.

Gone are the days when China's three biggest internet companies peacefully co-existed in separate domains: Baidu in online search, Alibaba in e-commerce, and Tencent Holdings in social networking services. Now, China's troika of dotcom titans—BAT for short—are locking horns by using their financial power to muscle into each other's territories, taking capital stakes and forging business partnerships in aggressive bids to expand beyond their own backyards. They have spread into an at times bewildering array of new sectors, ranging from finance and film production to soccer clubs and gaming.

The three companies' investment frenzy—estimated by Credit Suisse at \$15 billion in one year and 90% of the Chinese total—is aimed at making them an even more central part of Chinese consumers' digital lives. "It's all linking back to the fact these guys are platform companies. They move quickly. They're certainly moving more quickly than their traditional counterparts," says Michael Clendenin, Managing Direc-

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There's an element of 'grab it while you can' going on

Duncan Clark
Chairman
BDA China

tor of Shanghai-based RedTech Advisors.

"There's a lot of hype in China about building a platform, especially among the internet companies," says Jonathan Zhou, a senior e-commerce and mobile internet analyst for Pacific Epoch, a tech research firm in Shanghai. "They all want to become a so-called platform business. It doesn't mean all will succeed."

The explosion of smartphone usage in China with the arrival of the mobile internet has also played a part, according to Duncan Clark, Chairman of consulting firm BDA China and the author of *Alibaba: The House That Jack Ma Built*, to be published next year.

"BAT are all focused on mobile," says Clark. "It's the future—approaching half of Alibaba's business for example. So this brings them in competition with each other. The former silos in the PC world of e-commerce, search and games no longer apply."

BAT are leading the charge for diversification but minnows are catching on too. Chinese online entertainment giant LeTV wants to expand into sports, smart cars and cloud computing (and has already launched smartphones and a smartbike), while Xiaomi has already moved beyond the inexpensive smartphones where it made its name

to home appliances such as power strips, bedside lamps and air purifiers.

Out of Step?

China's digital and internet companies are inching towards becoming conglomerates, when such giant sprawling companies went out of fashion in the West decades ago. "I think conglomerates are pretty much out of vogue in the United States and Western economies, but they seem to be the fashion in China," says Michael Pettis, a professor of finance at Guanghua School of Management at Peking University in Beijing.

They have strong roots in Asia. Ancient family monopolies known as *zaibatsu* controlled swathes of Imperial Japan's economy. Today, the likes of Mitsubishi, Mitsui and other post-World War II *keiretsu*—literally 'headless combine'—hold similar sway over Japanese industry and represent the country's traditional business model. South Korea's economy is dominated by numerous so-called *chaebols*—family-owned business houses that include household names such as Samsung, LG and Hyundai.

In the decade up to 2010, non-state owned conglomerates in China made up about 40% of the largest 50 companies by revenue, according to McKinsey. In South Korea, where *chaebols* are deeply embedded in the national psyche, they accounted for 80%. Over the same 10 years, private and independent Chinese conglomerates expanded into 65 new businesses, while Korean companies entered 119 new sectors.

Conglomerates are an integral aspect of Asia's emerging markets too. In Indonesia, the family-owned Lippo Group has invested in everything from department stores and groceries to internet services and hospitals, while Astra International is a leader in automotives and infrastructure. Thailand's largest private company, CP Group, does business in agriculture and insurance.

Hulking state firms have long dominated China's economy, with a tendency to monopolize a single sector, such as energy, banking or railways. But there are also diversified groups both state-owned and independent that are prominent across a range of sectors. State-run CITIC Group is China's

largest conglomerate with holdings in finance, resources and real estate. Then there is privately owned Wanda Group—operating in 10 areas including cinemas, commercial property and theme parks—and Fosun International, China’s largest private conglomerate, which is involved in pharmaceuticals, insurance, steel and real estate.

Both Wanda and Fosun have gone on aggressive spending sprees in recent years to build new, income-generating businesses. Wanda paid \$2.6 billion for the AMC cinema chain in 2012 and \$1.6 billion for British yacht maker Sunseeker a year later, while Fosun completed its long-running \$1.1 billion buyout of France-based resort operator Club Med deal in February, and then in March brought a 5% stake in holiday provider Thomas Cook for \$140 million. It has also spent heavily on insurance and banking assets in Germany, Belgium and Portugal—including last year’s \$1.5 billion acquisition of Portugal’s largest insurer.

Spreading Their Wings

China’s dotcoms are now emerging as

the next generation of conglomerates for the digital age. They have expanded into a broad set of businesses that sometimes have strong linkages to their roots—and are at other times totally unrelated—in an effort to diversify their user base and business model. “The lines between what their core business used to be and what it will be in the future are quickly blurring,” says Clendenin. “In many of these cases, the new areas that they’re pushing into are quite related to their core business.”

“There’s an element of ‘grab it while you can’ going on, both in terms of investing into or buying companies—as we saw with the taxi wars—or in grabbing spaces still left open as a legacy of past inefficiencies in the state sector, like finance, media and perhaps healthcare,” says Clark.

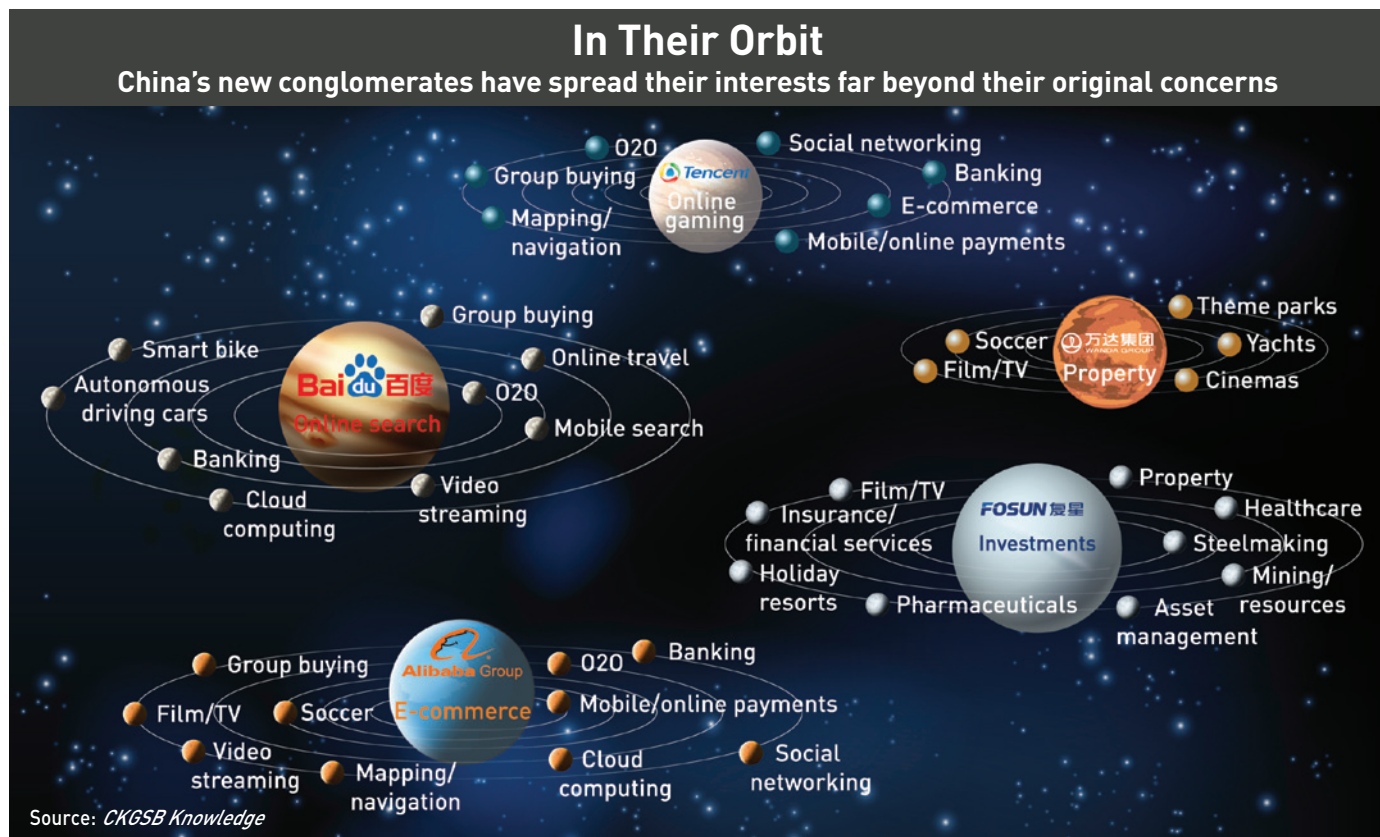
In Alibaba’s case, the e-commerce juggernaut has entered a number of different sectors to grow its operations beyond online shopping. It invested heavily in social media in 2013, by buying popular music-streaming service Xiami and taking an 18% stake in Sina Weibo for \$586 million. Nota-

ble purchases tangential to e-commerce last year included \$1.22 billion in video portal Youku Tudou and \$192 million for half of domestic soccer champions Guangzhou Evergrande.

The buying spree has intensified this year. In August, Alibaba announced its biggest deal to date—pumping RMB 28.3 billion (\$4.6 billion) into electronics retailer Suning for a 19.99% stake, while Suning will spend up to RMB 14 billion for around 1.1% of Alibaba. The acquisition dwarfs the \$590 million Alibaba paid in February for a minority stake in Meizu Technology, a lesser known Chinese smartphone maker.

It has also aggressively offered new financial services around Ant Financial, formerly known as Alipay. The subsidiary clears 80 million online transactions per day, including 45 million transactions through its mobile wallet app—making it the ideal central platform for a plethora of new businesses, including an online bank and credit scoring system launched this summer.

“Getting into finance is a natural extension of what Alibaba already does,” ar-



gues Clendenin. He notes understanding a person's purchasing behavior—what they buy, how much they spend, and how often they do it—can be of key help when deciding whether to offer that person credit or a loan. Alibaba has access to a rich trove of detailed purchase data and user behavior insights collected over years that can be mined for that purpose—which partly explain its investments in 'big data' analytics.

"This all goes into trying to model or predict what kind of credit risks they're going to be," says Clendenin. "This is the holy grail if you were a provider of loans. They have this sitting in their toolbox, they just haven't used it properly before."

Alibaba has taken some flack, however, for a seemingly scattergun approach to investments. Some deals, such as buying into a soccer club, do not make a lot of sense on paper either. That has raised concerns over whether Alibaba risks losing focus by investing in so many disparate sectors at the same time. "Sometimes it seems a little bit like a spaghetti strategy where they are throwing things at the wall and seeing what sticks," says Clendenin.

Tencent has also stepped into sectors both adjacent and unrelated to its existing activities of social networking and online entertainment. China's second-biggest internet company has particularly made a number of forays into Alibaba's turf of e-commerce, with some high-profile investments last year that included \$215 million for a 15% stake in e-commerce giant JD. It also took a 20% stake in Dianping, one of China's most popular listing review and group-buying services site (often called China's Yelp), for an estimated \$1 billion, and injected \$700 million in taxi-hailing app Didi Dache.

Dianping and JD were both integrated into WeChat soon after the investments, signaling Tencent's determination to build an online services platform centered on the messaging service. And like Alibaba, Tencent also has detailed and exploitable data about consumer behavior gathered from its WeChat and QQ services. The information could prove useful for WeBank, the company's online bank venture—and China's first private bank—that launched in January.



Sometimes it seems a little bit like... they are throwing things at the wall and seeing what sticks

Michael Clendenin
Managing Director
RedTech Advisors

Baidu has been relatively quieter on its ambitions than its peers. "Baidu's been the slowest and most conservative out of the three," says Clendenin. Analysts say the search engine's aversion to risk and preference for control over invested companies can be detrimental for deal making, as it reduces the pool of potential investments.

Nonetheless, Baidu has stepped up investment to extend its dominance of the search engine market in China into other strategically important sectors such as online travel and video. Clendenin points to the company's \$306 million investment in travel search engine Qunar in 2011 as an example. Baidu's acquisition of video streaming service PPStream for \$370 million in 2013 and ownership of iQiyi, another video portal, are also ultimately about search and helping people find services on the web.

"If you look at iQiyi and PPStream,

there's a certain search element to it in that people go out and search blindly for video titles," says Clendenin. More recently, it has ploughed money into start-ups operating in niche categories like online education and healthcare delivery.

But Baidu also has projects that are outliers for a search engine. The company's Beijing Deep Learning Lab raised eyebrows toward the end of last year when it unveiled the DuBike, a so-called 'smart' e-bike project loaded with data-generating sensors and regenerative electric tech. Baidu has also worked on wearable tech similar to Google Glass named Baidu Eye and has plans to roll out self-driving cars with BMW later this year. Curious as they are, these research exploration efforts tie into deep learning—an artificial intelligence technique that could help systems such as search engines recognize and process natural or semantic language much better.

Baidu served notice of its ambitions in this promising field last May by hiring renowned deep learning researcher Andrew Ng—a professor of computer science at Stanford and founder of Google's deep learning efforts—as Chief Scientist and Head of Baidu Research. Not everything has gone according to plan though; earlier this year, a Baidu team was caught cheating in an AI competition that tests how well supercomputers can recognize objects and locations in photos.

Clendenin, however, sees a silver lining to Baidu's underhanded efforts. "Investing in artificial intelligence is important, and I'm just happy they're concerned enough about that to try and game the system," he says. "It shows me that they're definitely investing in it, that they think it's important, and that they want to rank internationally. That's all important when you consider one of the things Chinese companies are often criticized for is not investing enough in their R&D."

The troika is following in the footsteps of its global peers in diversifying beyond their core competency. Google has undertaken value-chain expansions in recent years—it has reached upstream by building a fiber internet business in the US, and ventured downstream into hardware by selling

Costly Expansion

Investment activity by Baidu, Alibaba and Tencent in 2014



Source: Credit Suisse

laptops and smartphones. Amazon's hugely successful Kindle e-book reader line represents a similar foray into hardware, and away from its primary e-commerce business.

A second driver for China's new wave of conglomerates is the looming consolidation of large state-owned enterprises (SOEs). China underwent a major round of SOE reform in the late 1990s, with almost 60,000 industrial SOEs closed and 30 million state workers laid off. Now a new round of restructurings is taking place, with the country's two largest train manufacturers already in the process of merging into a \$26 billion global giant. The government is reportedly mulling a raft of similar mergers for industries such as aerospace and defense, shipbuilding, oil and gas, and telecommunications.

Clunking Conglomerates

Conglomerates may be thriving in China and elsewhere in Asia, but they have a checkered past in Western economies. "Generally speaking the history of conglomerates has not been very convincingly in favor of creating value," says Pettis.

In the case of the US, conglomerates de-

veloped on the basis that by expanding into a variety of businesses, a company lowered the risk of bankruptcy as well as the overall cost of capital and all the associated benefits. But Pettis says a major problem is that managers of the different businesses within a conglomerate can sometimes act against the interests of shareholders—the so-called agency problem.

"Managers in a company have a different incentive structure to the owners, so they behave in ways that benefit managers but that don't necessarily benefit owners," says Pettis. As managers grew their operation, the more important they would become to the company and the likelier they would receive higher compensation. "All of those things justified the process of becoming a conglomerate from a management point of view."

From a value creation perspective, however, the managers were unable to efficiently administer very different types of businesses. "They were actually destroying value for their shareholders while increasing value for themselves," says Pettis.

In terms of wider impact, the support for state firms and resurgence of conglom-

erates in China also arguably comes at the expense of small and medium-sized enterprises (SMEs) in China. Widely considered to be the most vibrant part of the Chinese economy, SMEs contribute around 60% of GDP and accounted for 8% of job creation in 2014. "We really want to be in the process of transferring resources from the large SOEs toward the SMEs," says Pettis.

Consolidating business power in a handful of companies could potentially stymie competition and slow innovation by throwing up barriers to entry for newcomers. The dominance of a few players could mean an unlevel playing field and would only help those with the right connections, while making success more difficult for start-ups without such connections. Connections will become more critical as the giants solidify their hold on the market.

BAT have leveraged the network effect—when the value of a product to consumers increases as it gets more popular—to drive their main services to greater heights. WeChat and Taobao are prime examples, as their attractiveness increased as more users joined. But Clark warns there is a risk that the benefits of the network ef-

fect will ebb over time, either because the companies cannot innovate fast enough or from limits imposed by authorities that fear consumer rights are in danger.

The other managerial problem with conglomerates is that success in one area does not breed it in another. A company that excels at manufacturing cars and marketing them will not necessarily do as well in hotels, and that poses a problem for resource allocation. The sensible move to take would be for the conglomerate to focus on expanding the booming business, while restructuring or even closing down the faltering operation.

But what tends to happen is that resources are shifted from the successful segment to the struggling side. “You never have to make tough decisions because there’s always some part of your empire that is generating cash,” says Pettis.

Not everything BAT touches turns to gold. In some instances, the trio have been guilty of overreach in efforts to build their online empires. Tencent’s forays into

e-commerce stand out. While the web giant has had huge success with social media and gaming, it has struggled with the capital-intensive, cutthroat competitive business of e-commerce. Its online retail offerings have struggled, most notably seen with online electronics retailer 51buy. Tencent invested in the start-up in 2011 and took a controlling stake a year later, but quickly discovered it did not have the expertise to be an e-commerce player.

“They tried to scale it over time by pumping a lot of cash into it but then it was bleeding losses,” says Zhou. “The Tencent margin was getting hurt and they realized they weren’t going to be extremely successful in the areas they weren’t proficient in.”

The struggles prompted Tencent to offload its underperforming e-commerce businesses QQ Wanggou and Paipai to JD, while also giving JD a 9.9% stake in 51buy. The move marked a change in strategy for Tencent, with the company shifting the operation and offline heavy lifting of the e-commerce business to a strategic partner

with plentiful experience in the market.

“Very smartly, they backed away from it,” says Clendenin. “There was a little bit of overreach but they learned from it. Tencent is usually very good at understanding they might be better off just investing and learning from the particular investee.”

For China’s three internet giants, a fear of missing out on the next big thing is driving their evolution into rival conglomerates. Keeping Jack Ma and his peers up at night is the thought that they might miss a certain trend or hot start-up that enables them to stay relevant and essential to consumers’ lives. With a combined market cap exceeding \$450 billion as of mid-July, their race to diversify shows no signs of stopping.

History has shown, however, that conglomerates are susceptible to failure—particularly those in consumer-facing industries. BAT emerged as winners in the highly dynamic and competitive business world of China’s internet, but their gradual conglomeration could see them overtaken by technological changes and upstart companies. ■

REUNION FESTIVAL



Mid-Autumn Festival is a time meant for families to come together, enjoy each other’s company and eat tasty mooncakes. This year, Shanghai Marriott Hotel Hongqiao will launch two new creative, premium mooncake flavors: sea-salt and salt-pepper seaweed, both in addition to the classic egg custard flavor.

Two new mooncake packages are available for purchase: **RMB 198** for six classic egg custard flavored mooncakes and **RMB 268** for eight mooncakes featuring a mix of all three flavors.

Starting from 31 August to 27 September, 2015, you can pick up your mooncake packages in the Shanghai Marriott Hotel Hongqiao lobby. For further details or to make a purchase, please call (021) 6010 6000 ext.6208

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Revenue Streaming

Expensive investments and licensing agreements are putting pressure on China's longstanding culture of free online music and video

By Chris Russell



If there's one activity that unites China's subway commuters, it's huddling over their smartphone screens to watch the latest local, South Korean or Western TV shows downloaded or streamed from one of China's many video websites. They're part of a wider trend where more and more consumers are heading online to find their entertainment, and government statistics show music and video are the fourth and fifth most popular uses for the internet, respectively.

But for all the prodigious growth, monetizing the interest has been a different matter. iResearch, an internet consultancy, estimates that online entertainment revenue, encompassing not just film and music, but also online games and more, will reach RMB 209 billion (\$33.6 billion) in 2015. But according to the consultancy, online video revenues will only hit RMB 36.3 billion (\$5.8 billion). Digital music revenue in the country was worth a meager \$91.4 million last year, according to statistics from the International Federation of the Phonographic Industry (IFPI) published in *The Wall Street Journal*. That is largely due to a pervasive culture of free, on-demand content, but that may be set to change.

Over the years previously illegitimate services have straightened up their acts, China's internet giants have piled in to the sector in search of users, traffic and, presumably in the long term, profits, while ever more licensing agreements are being inked with the world's entertainment heavyweights. With so much money on the line, all the incentives are there for the companies involved to begin the uphill battle of persuading consumers to switch to paid content.

Free for All

For decades now, the entertainment industry worldwide has grappled with internet-enabled piracy, with content being shared on a plethora of file sharing services which, hydra-like, have seemed to grow in number even as successful action is taken against them. But the situation was arguably worse in China, with the country acquiring a reputation, increasingly incorrectly, as somewhere copyright law goes to die.



[QQ Music has] been doing it for a long time and they've worked out how to build value into [their service]

Ed Peto
Managing Director
Outdustry Group

As a country already famous for counterfeit CDs and DVDs, the situation was exacerbated by a number of services offering free streaming and downloads of music and video. Even worse, some of the biggest companies in China were facilitating it. Baidu, one of the poster boys of China's dynamic internet sector, offered links to countless unlicensed music tracks for free download and streaming.

"For Baidu back in the day for example, their MP3 search was 10-20% of traffic in some cases as far as I was aware, although there's no official numbers for that," says Ed Peto, Managing Director of Outdustry Group, a firm that specializes in helping Western record labels and rightsholders enter the Chinese market. "It was a significant portion of their traffic which they then obviously converted in other ways, which would obviously be through advertising for Baidu."

A major turning point for video came in 2009 when Coca-Cola and Pepsi were sued for contributory copyright infringement in a case brought by a group called the China Online Video Anti-Piracy Alliance. The two companies had been advertising on the video website Youku—which at the time was full of unlicensed content—and were deemed to have been aiding Youku's copyright infringement with their advertising support. Fearing that this might affect their relationship with advertisers, Youku and other companies moved to legitimize their content to stave off a flight of advertisers from their websites.

For the music industry, the biggest breakthrough is widely considered to have been in 2011, when the world's major labels, through their subsidiary One-Stop-China, reached a licensing agreement with Baidu's music service. Prior to that, their only significant source of digital music revenue had come from ringback tones, the music that is heard by the caller while the phone rings.

But although the tide had begun to shift and rightsholders saw an increase in the license fees they received, free online content remained the norm. And the idea had been instilled in a generation that music and film, at least online, weren't really things you paid for.

"In China, the internet somehow equals free service," says Will Tao, Analysis Director at iResearch.

Play That Track

Growth in these services has nonetheless continued unabated, even with various legal wrangles over the legitimacy of content. A January 2015 report by the China Internet Network Information Center states that the country has 649 million internet users—of which 73.7% used the internet to listen to music and 66.7% to watch video, the fourth and fifth most popular uses, respectively. Consuming online music and video with mobile devices is also increasingly popular—65.8% of users do for the former, representing 25.9% annual growth, and 56.2% for the latter, 26.8% annual growth.

That usage is spread across an array of services: Kugou, QQ Music, TTPod, Kuwo

and Xiami for music, and iQiyi, Youku, Tudou, Sohu and LeTV for video, to name just some.

And the influence of China's internet giants—Baidu, Alibaba and Tencent—looms large, as it does elsewhere in China's digital landscape. Baidu purchased a majority stake in iQiyi in 2012, while Alibaba has secured investments in Xiami, TTPod and Youku Tudou (although they run separate websites, the companies merged in 2012), and in July it announced the creation of Alibaba Music Group, which would involve the integration of Xiami and TTPod with the new brand. Tencent is behind QQ Music and Tencent Video.

Both Tao and Peto note that these services represent a huge traffic driver for Baidu, Alibaba and Tencent. They can use them to encourage people to try their other offerings, and vice versa. Tencent has even gone as far as preventing the direct sharing of Xiami links on WeChat's Moments feature, a Facebook-like feed in the app.

"Their respective strength in search, e-commerce and social network enables them to reach targeted users based on numerous user data," says William Lam, China Entertainment and Media partner at PwC.

Alibaba is making further moves into the entertainment sector through its Tmall Box Office, although in this case the service is available through the company's set-top boxes and smart TVs. Companies such as Xiaomi and LeTV have also adopted a similar approach by making content, often in partnership with video sites, available through their own equivalent devices, and competition is likely to get even fiercer as state broadcasters attempt to reinvent themselves for the digital era.

But foreign services, many well known and used worldwide, are conspicuous by their absence: Spotify, Soundcloud, Deezer, YouTube and Hulu are all unavailable in China, while Apple Music, which launched to much fanfare in July, has skipped over China for the time being. That said, Netflix have announced their intention to enter the Chinese market, but progress has seemingly stalled.

"We're taking our time and being deliberate in finding a path and the right model to work," said David Wells, Netflix's Chief Financial Officer, on a conference call to investors. On that same call, CEO Reed Hastings admitted the company would likely miss its planned 2016 launch in China,

and in an interview with *Reuters* attributed this to regulatory issues.

License to Pay

In the main, China's online music and video services have adopted an approach of free content plus adverts, with commercials preceding or breaking content as it plays. However, according to Tao, it's a model much better suited to video than it is to music, as people are unwilling to put up with an advert playing before the start of a song in the same way that they would with a movie. He adds that he's not sure if the right kinds of adverts could be found to support online music platforms.

But to varying degrees, the services are moving towards subscription models. Typically, for a fee of around RMB 10 (\$1.60) per month users can access higher quality sound or video, downloads, a service free of adverts and sometimes perks for other services. By comparison, monthly subscriptions with Netflix and Spotify cost \$7.99 and \$9.99, respectively.

That has helped boost revenues—according to the IFPI, in 2014 China's music market increased 5.6%, helped by increased streaming revenues. But with the exception of QQ Music and its Green Diamond subscription tier, this represents new territory for many services and as such they are still finding out how to effectively drive interest in these premium tiers.

"[QQ Music has] been doing it for a long time and they've worked out how to build value into that Green Diamond service that they offer," says Peto. "[The rest are] very new to the whole concept, so it's going to take some time."

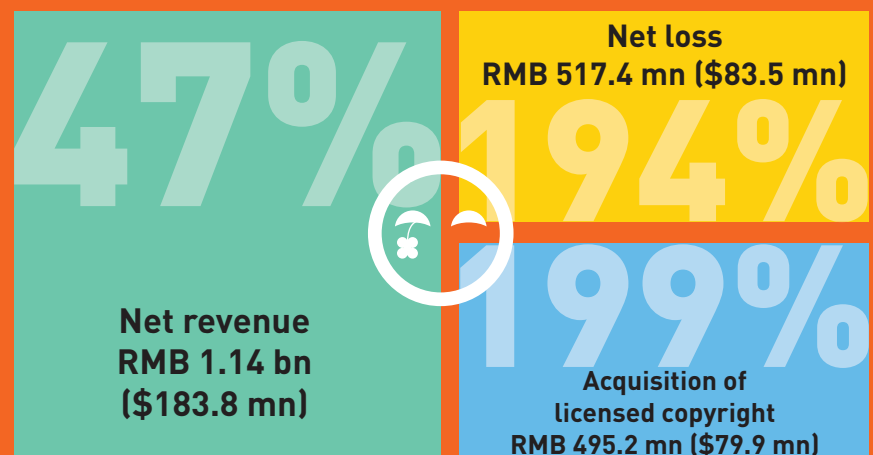
One way that QQ Music has sought to build interest in Green Diamond is through the use of members-only concerts from popular acts. Other methods include offering perks in Tencent's other services, notably its games, and personal radio stations. This seems to have paid off, to an extent, as the IFPI estimates that Green Diamond has 3 million users.

But the primary way in which companies have been trying to drive interest in subscriptions is through moving more sought-after content behind the paywall,

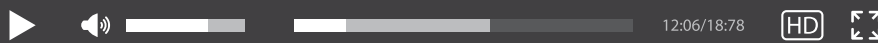
Profit Not Found

Youku Tudou's Q1 2015 financial results and change on Q1 2014

YOUKU 优酷



Source: Youku Tudou



and they have moved aggressively to sign deals or take stakes in other companies in order to acquire the necessary content. In 2014, Tencent alone signed deals with Sony Music Entertainment, Warner Music Group, National Geographic, HBO and South Korea's YG Entertainment.

Since this content is a key way of differentiating themselves from their competitors and keeping audiences engaged, these companies are now looking to follow the model of Netflix and produce their own content. Notably, Alibaba acquired a majority stake in ChinaVision Media Group, later rebranding it Alibaba Pictures.

“Sourcing new professionally produced content, producing new in-house content or encouraging more user-generated content are the key factors to attracting or retaining customers,” says Lam.

This has placed a real strain on company finances. In Q1 2015, Youku Tudou's content costs were RMB 669 million, 59% of revenue compared to 46% of revenue a year earlier. That also sheds light on another key difference with markets outside of China: a lack of consumer interest in user-generated content (UGC). While the likes of YouTube can successfully make money off running adverts on content they by and large had no hand in producing or directly paying for, Chinese websites have been less able to do so.

“For online video, UGC in China is not that welcome,” says Tao. However, Youku Tudou have announced plans to remedy that situation by investing RMB 10 billion (\$1.6 billion) in content from viewers and small production companies.

Litigation Nation

Although a race to acquire top line content has been crucial for services seeking to set themselves apart from their competitors, such moves have hit a slight snag.

In April new regulations came into effect that restricted the availability of foreign films and TV shows. Where services could previously freely cater to the demands of users by hosting hit dramas such as *House of Cards*, they must now obtain licenses for shows on a case-by-case basis and the amount of foreign content that can be

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[Baidu, Alibaba and Tencent] all have enough cash to support these services

Will Tao
Analysis Director
iResearch

shown is restricted. Lam feels that the regulations will not have a “great effect” since most users prefer local Chinese content. That may be true, but there is still a significant demand for American, British and South Korean TV shows.

As a result, these regulations may in turn spur the very thing that is often thought to have blighted China's entertainment landscape—piracy. With consumer interest in foreign shows piqued, if it can't be found online, or only in a heavily edited form, they may well move to those illegitimate services where that content is still available. It could perhaps even drive a resurgence in that former bastion of unlicensed content: the pirate DVD shop. Moreover, content that is not legally available in the country can't be profited from or prevented from illegal use by rightsholders.

And this would be in addition to all the piracy that has been taking place anyway—Lam points to a 2012 report from the Office of the US Trade Representative that asserted that 99% of music downloads in China were infringing copyright.

But although still a very real concern,

the effects of piracy are perhaps overstated. Writing on *China Law Blog* in a post entitled ‘China Motion Picture Copyrights’, Mathew Alderson, a media and entertainment attorney for the firm Harris & Moure, writes that “effective notice and takedown procedures exist for pirate content online”. With China's biggest companies sinking money into the acquisition of licenses, there is now a real incentive for them to make sure that content isn't being pirated.

Dowson Tong, president of Tencent's social network group, told *The Wall Street Journal* that the company had pursued legal action in order to remove illegal content. Since November, Netease, Alibaba and Kugou have all been involved in law suits over copyright infringement.

However, Alderson states that in copyright cases damages are low and the burden of evidence is high. Moreover, “in the absence of sufficient evidence of infringement, damages are capped at RMB 500,000 (\$80,500)”. As such, legal action is not necessarily much of a deterrent. According to intellectual property firm Rouse, average damages in 2011 were a mere RMB 24,621 (\$3,900).

Even so, moves by the big players to legitimately license content and protect it means increasing amounts of content is available legally. And thanks to deals having been signed with the major labels and studios, that covers the content that most people would be interested in.

“That's a really significant chunk of all available music [licensed in],” says Peto. “50, 60, 70% even of available music in China is actually licensed into those services. Of course there's plenty of other services, particularly apps and start-ups and what not, still out there engaging in piracy, but if you look at Kugou, Kuwo, TTPod, QQ Music, that's basically 90% or more of the music user base in China.” He adds that with a good user experience, there is less incentive to use pirate services.

For its part, the government is also aware that steps need to be taken. In early July, the National Copyright Administration (NCAC) ordered that unlicensed music must be removed from online stream-

ing services by the end of the month. After the deadline passed, the NCAC said that 2.2 million unlicensed songs had been removed. Needless to say, plenty of pirated music still remained.

Future Episodes

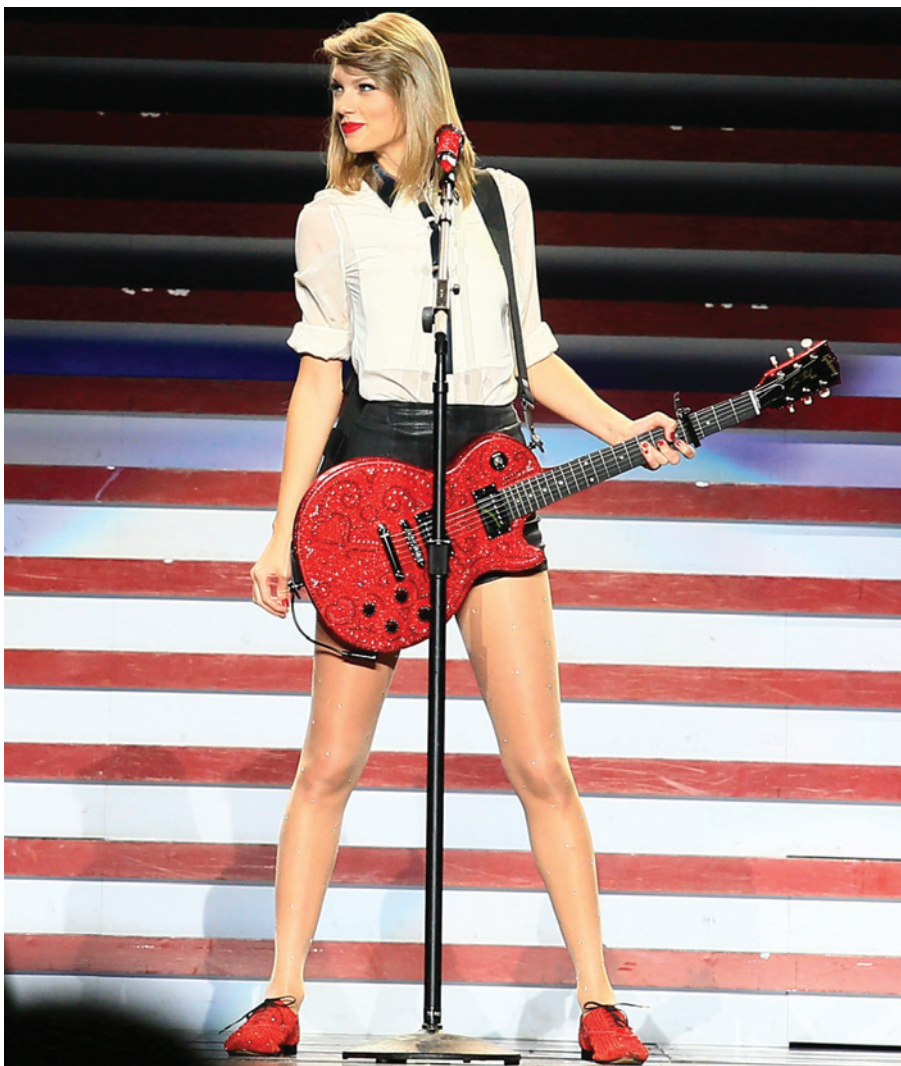
The biggest existential threat to some of these websites may actually be their attempts to go legitimate. With spiraling content acquisition costs, not all companies will be able to bear the resulting strain. That gives the platforms backed by Baidu, Alibaba and Tencent a big advantage.

“These companies all have enough cash to support these services,” says Tao. He adds that content such as music can be used to generate more traffic and that monetizing the services isn’t necessarily a pressing issue for them. “As long as there won’t be a huge amount of [lost] money, it’s okay.”

That said, current and future developments may ease the woes of some companies. With the rise of convenient online payment options such as Alipay, paying for legitimate content is becoming an increasingly frictionless process. Lam agrees that online payments will likely boost monetization efforts and points out that convenient payment options help spur impulse purchases.

Tao also thinks that such payment options will provide a boost. “I think for Alipay and WeChat Payment, it will be more convenient for people to pay for content. I think it might help monetization” he says. Cheapness and convenience also drove a lot of ringback tone sales, the previous dominant source of digital music revenue.

In the long run, consumer attitudes may change, and with it will come the development of an appreciation of the value of music. Writing for *Outdustry’s China Music Business*, Peto and Alex Taggart note how Chinese fans of Taylor Swift were baffled after the singer and her management ordered that her songs be removed from the free tiers of mainland music streaming services (around the same time she had completely removed her back catalog from Spotify). Although in the English-speaking world Swift has been outspoken in her opinion on the value of music, no such ex-



To the confusion of her fans, Taylor Swift removed her music from the free tiers of Chinese online music services

planations of her stance were forthcoming in China, depriving her fans of the context for the move.

Tao feels that although it is very difficult to convince the current generation of mainstream music, film and TV fans to pay, he believes future generations will be more amenable to paying for content, in part because they will be less price sensitive and more familiar with the practice of paying for providers’ services. If Swift or an artist like her can bring the discussion of artists being rewarded for their work to China, the second point might be that much more achievable.

But such developments will be slow to unfold and will occur over a long time

scale. As such, the question remains of how many services can cling on until such day arrives. Those with deep-pocketed backers are well placed to survive, but others may fall by the wayside. That could lead to some serious consolidation in the market—indeed, Youku and Tudou’s merger is a case in point, as is the creation of Alibaba Music Group.

“Given the industry access threshold is not high, the sector will remain fragmented in the short run,” says Lam. But as content costs soar, regulatory oversight increases and China’s copyright practice matures, all but the wealthiest services will likely find they’re not being renewed for another season. 

China has ambitious plans for the Internet of Things. After playing catch-up in the first two stages of internet development, the world's second-largest economy is poised to take a leading role in its third wave, which will bring billions of everyday devices online in a vast ecosystem merging the physical and cyber worlds.

The Internet of Things (IoT) is “a network of networks of uniquely identifiable endpoints (or ‘things’) that communicate without human interaction using IP (internet protocol) connectivity,” according to research firm IDC. That network today is highly fragmented and largely consists of smartphones, wearable devices and home-ware, although work towards the development of “smart cities”—cities with digital technology embedded across all of their functions—continues apace.

The IoT is currently in a nascent stage, but China's huge internet user base—the world's largest—provides a strong foundation for the sector to develop, says Milly Xiang, the head of IDC's telecom practice in Beijing.

Of equal importance are China's strengths in both hardware and software, says Dave Friedman, Chief Executive Officer of Ayla Networks, an IoT solutions provider with offices in Silicon Valley and Shenzhen. “China is the manufacturing center of the world, so if you want to make a hardware product, the supply chain is right there,” he says. “China's software

developers are also heavily invested in mobile, the gateway for IoT. Smartphones are going to become a universal remote control for managing everything in our lives.”

IDC forecasts the IoT will grow from \$655.8 billion in 2014 to \$1.7 trillion in 2020 as more devices come online and a stable of platforms and services develop to support them. The research firm predicts China will dominate the Asia-Pacific (excluding Japan) IoT market, accounting for 59% of “market opportunity” and one out of every five connected devices globally.

Early Bird

The Chinese central government identified the IoT as a key sector to be developed early on. In August 2010, then Premier Wen Jiabao said the IoT was pivotal for China's development, and called for the rapid deployment of IoT technologies. The same year, a national IoT center was established in Shanghai.

In June 2012, the Ministry of Industry and Information Technology (MIIT) announced the key sectors in which it would promote IoT development with pilot projects. They encompassed a huge swath of the Chinese economy: industrial control, agriculture, financial services, smart grid, intelligent transportation systems, logistics, healthcare and public safety.

Beijing is backing up its sweeping IoT vision with generous funding. In 2013, the Ministry of Housing and Urban and Rural

Development (MOHURD) chose 193 local governments and economic development zones as official smart city pilot project sites, according to the US-China Business Council. That nomination made them eligible for funding from an RMB 100 billion (\$16 billion) investment fund sponsored by the state-run China Development Bank. Last year, the MIIT announced an RMB 50 billion (\$8 billion) fund of its own for investment in smart city research and projects.

The massive funding opportunities are turning heads in local governments, who are eager to use smart city applications to address congestion and pollution. Over 90% of China's provinces and municipalities “have listed the IoT as a pillar industry in their development plans,” MIIT Vice Minister Xi Guohua said in September 2014.

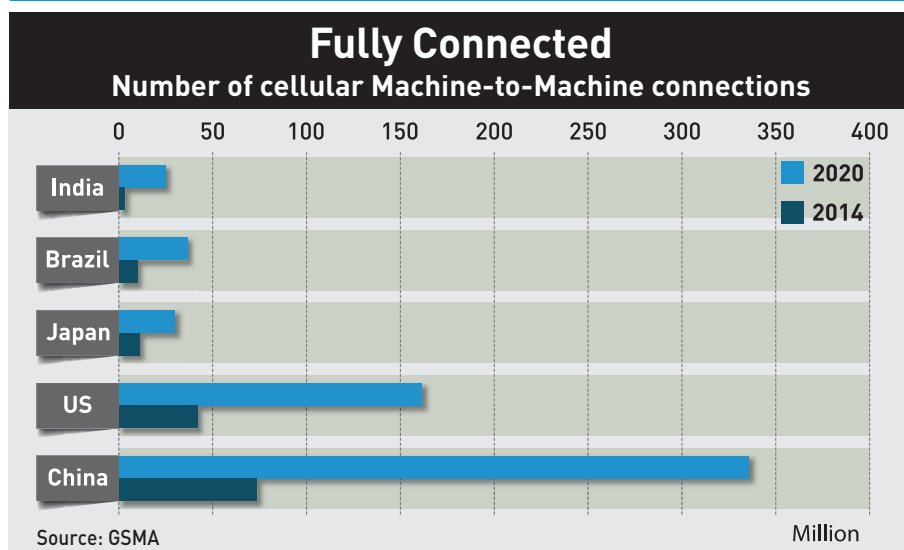
The government's efforts look to be bearing fruit—by 2013, China had become the global leader in the adoption of machine-to-machine (M2M) technology, which allows networked devices to exchange information and execute tasks without human assistance. Last year China's 74 million connections comprised almost one-third of the total M2M market, according to the Groupe Speciale Mobile Association (GSMA), a London-based organization representing the interests of mobile operators.

China's IoT market has grown expeditiously as well. It surged from RMB 170 billion (\$27 billion) in 2009 to more than RMB 500 billion (\$82.6 billion) in 2013, with annual compound growth above 30%, according to the China Academy of Telecommunication Research.

“Clearly, China's size offers economies of scale unavailable to other countries, but it's been the government's focused strategy, emphasis on common specifications and cross-sector collaboration that has allowed the Internet of Things to scale...putting China at the forefront of IoT deployment,” GSMA Chief Technology Officer Alex Sinclair said in a statement.

Gaining a Foothold

China's IoT market is growing fast but remains fragmented, with no market leader in either the consumer or commercial segment. “No company—in China or the



world—can yet provide a full solution,” says Xiang of IDC.

With that in mind, Xiang credits telecom giant Huawei for developing open-source IoT technology, rather than focusing on building hardware. Launched in March, Huawei’s Agile IoT platform offers its Lite OS operating system to developers free of charge. The software connects devices such as wearables, smart homeware and smart cars to the IoT.

“The Huawei approach is smart,” Xiang says. “By providing a platform on which devices can connect to the IoT, they will be able to work with different partners to develop IoT solutions.”

With its massive telecom resources, Huawei is poised to become a leader in smart cities too. Its ‘Safe City Solution’ provides a fixed and mobile broadband network that supports CCTV cameras. That technology has already been deployed in 100 cities in 30 countries, according to Huawei.

The telecom giant rolled out three additional IoT technologies in March: a collaborative cloud service, which integrates apps, networks and terminals to make the operation of branch offices more efficient, a smart transport system that provides connectivity to trains and buses and an M2M energy management solution that facilitates the remote management of energy use.

Huawei says its energy management solution helped the University of Melbourne reduce energy use by more than 60%.

“Huawei can win smart cities,” says Friedman of Ayla Networks. As a big telecom equipment provider, “they can expand within their existing accounts,” he adds.

Beijing-based smartphone vendor Xiaomi is also moving to gain IoT market share, but is focusing on building an ecosystem of connected devices controlled by its smartphones, experts say. In recent months, the handset maker has acquired 20 tech start-ups and launched a number of smart home products, including a blood pressure monitor, air filter, security camera, scale, power strip and light bulb.

“Xiaomi’s massive base of smartphone users (it was the world’s No. 5 handset vendor by shipments in 2014) gives it a solid foundation to expand into smart home,”

“

No company—
in China or the
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Milly Xiang
Head of Telecom Practice
IDC

says Jessica Hsu, a senior analyst the Taipei-based Market Intelligence & Consulting Institute (MIC).

“Xiaomi is showing considerable ambition in its smart home strategy,” says Chiang Chia-wei, a research analyst specializing in the IoT at MIC. If Xiaomi is able to establish a strong base for its smart home products in its huge home market, international expansion may follow, he adds.

In an interview with Guangdong-based *Southern Daily*, Xiaomi CEO Lei Jun said the company plans to acquire 100 more tech start-ups to bulwark its ecosystem and “establish its supremacy in the IoT.”

Xiaomi’s IoT strategy has already attracted the interest of global investors. In April, VC firm GGV Capital announced it had made two new investments into Chinese IoT companies in the Xiaomi ecosystem. GGV, which focuses on multi-stage investments in both the US and China, led a \$15 million series B funding for Zimi, a maker of portable battery chargers, and headphone manufacturer Imore.

“We believe Xiaomi will become a very impactful force in IoT in China,” says Hans Tung, Managing Partner of GGV

Capital. “Zimi and Imore are both strong companies in a robust ecosystem, with the potential to grow internationally,” he adds, noting the Taiwanese leadership of both start-ups have experience manufacturing smartphones for Xiaomi.

Internet giant Baidu is taking a different approach to the IoT than Huawei or Xiaomi. Firstly, it aims to outdo search rival Google with its Baidu Eye wearable device. Finished as a prototype in September 2014, the head-mounted device attaches to a smartphone, recognizes voice and gesture commands, and includes an earpiece and camera.

Gu Jiawei, head of the Human Computer Interaction team at Baidu’s Institute of Deep Learning, has high hopes for Baidu Eye, despite inevitable comparisons to the ill-fated Google Glass. “Google Glass has been a failure. We won’t fall into that trap,” Gu says.

To enable hands-free search, the camera on the right side of Baidu Eye can take photos and recognize objects in them, a feature that can facilitate shopping either online or offline. That enhances the shopping experience for customers and brings value to retailers by providing them with data on customer purchases, Gu says.

Baidu will go head to head with Google in the smart auto sector as well. The Chinese internet giant is partnering with BMW on a highly automated car that it says will be launched before the end of the year. The vehicle will assist rather than completely replace a human driver, as Google’s does.

The car will be based on BMW’s semi-autonomous driving technology and supported by Baidu’s knowledge of Chinese roads. A self-driving vehicle is a logical step for Baidu, given its strong search and mapping capabilities as well as ample R&D investment in deep learning, analysts say.

Connectivity Challenges

While enthusiasm is high for the IoT in China, there are a number of problems that may hinder its development if left unchecked. Many of these issues are not specific to the Chinese market, but affect the IoT globally.

One of the major obstacles is market fragmentation, which has occurred because vendors have not adopted universal IoT

standards. Technologies currently used for M2M communication include Wi-Fi and Bluetooth variations, mobile networks, white space radio (a frequency allocation process that assigns white space between used radio bands or channels to avoid interference) and different proprietary wireless standards. Any of these technologies could eventually become dominant, analysts say. For now, the abundance of competing technologies limits the ability of connected devices to interact with each other.

“Market fragmentation is a major hindrance,” said Bernard Shung, head of business development at Taiwanese chipmaker MediaTek, in a presentation at Taipei’s Computex electronics show in June. “If it’s not addressed, the market will not grow.”

Yet fragmentation offers an opportunity for China, which is eager to develop IoT standards that could go global. In September 2014, China came a step closer to achieving that goal: a joint committee of the International Organization for Standardization (IOS) approved Beijing’s “Reference Architecture for IoT” proposal.

“This is the latest example of international adoption of China national standards, and is seen as a breakthrough for China’s Internet-of-Things (IoT) standardization efforts,” according to a statement from the United States Information Technology Office (USITO), a trade association representing the US ICT sector in China.

The US, South Korea, Canada and Australia are working together with China to develop IoT standards, the USITO said.

Maintaining the security of the IoT’s supporting cloud services presents another challenge to the sector’s development. A security breach in a smartphone results in a personal loss of identity and assets, but with the IoT the stakes are higher, Shung said, adding that compromised IoT systems could lead to “‘disabled hospitals’, flooded fields and other disasters.”

Meanwhile, in China, excessive state-led investment is distorting the IoT market, says an analyst with a research firm in Taipei, who requested anonymity because of the sensitivity of the subject. Chinese vendors receive generous government funding to produce IoT hardware for state-owned



Huawei can win smart cities

Dave Friedman
CEO
Ayla Networks

institutions, she observes. As a result, manufacturers focus on reaching shipment targets set by the government rather than meeting market demand. “The government is acting as a locomotive, pulling the IoT ahead in China, but it’s moving too fast,” she explains.

The IoT is about more than hardware manufacturing, the analyst says, adding that the real value of connected devices lies in the troves of data they provide for analysis.

In her view, educating Chinese citizens about how and why to use IoT devices should be a priority for Beijing. Otherwise, the products will go to waste. The analyst recalls visiting a public hospital in China where elderly patients were given smart wristbands used to alert hospital staff if the patient falls down, or faces another kind of emergency. She was surprised to find that the patients refused to wear the wristbands.

“They said, ‘This thing is putting a curse on me,’” she says. “They think wearing it will bring them bad luck.”

In a visit to a different Chinese city, the analyst found the local police force failing to put their body cameras to good use. “They emphasized the cameras had an ultra-fast 4G connection to the cloud, but they missed the point: the point is the data the cameras collect can be used as evidence of a crime, or to provide clues about a crime.”

Thinking Big

If China seems hurried to develop an ecosystem of connected devices, the IoT’s

many practical applications will ultimately justify the hype, market insiders say.

In hospitals, the IoT is already helping to improve China’s “unbalanced health-care service,” says Xiang. For instance, in some hospitals, tablets linked to a database of patient information are being distributed to doctors, she says. This allows doctors to access information about a patient’s condition instantly and share it with colleagues.

As a developing country, China needs IoT to improve living standards for its citizens, says Friedman. He believes smart technology that can help Chinese citizens save energy will be adopted rapidly, and sensor networks in streetlights and smartphone apps that provide traffic updates will help alleviate the gridlock that paralyzes China’s roads.

Friedman has good reason to be optimistic about China and the IoT. In 2014, Ayla became the first US IoT platform company to obtain a license to serve as an internet content provider (ICP) in China. That license allows Ayla to collaborate with manufacturers, websites and social networks to build a national framework for the IoT in China. Earlier this year, Ayla Networks and the World Bank’s venture arm IFC launched an effort to create a cloud for IoT in China.

In June, Ayla launched an IoT portal for WeChat, China’s top messaging app. The portal’s technology helps smart home vendors integrate their products with WeChat, turning the app into a remote control for their devices.

In the view of Jack Huang, CEO of Guangzhou-based GizWits, creator of a platform that brings home appliances and consumer electronics products online, China is “uniquely positioned” to become a global leader in the manufacturing of IoT products.

“It comes down to huge market size, high smartphone penetration and manufacturing strength,” says Huang. “China manufactures 2.5 billion home appliances per year; 700-800 million of them are used domestically. All of those appliances used in China are going to eventually become connected.”

HUNGER GAMES?

China's changing appetite is driving up the country's food imports

By Douglas Bulloch



On a visit to France last year President Xi Jinping waxed Napoleonic by comparing China to a sleeping lion, which “has already awakened” but is, reassuringly, “peaceful, pleasant and civilized”. He might have added that she is hungry, as any examination of Chinese food imports since the turn of the century will demonstrate.

Until then, China largely fed itself. Yet the tables have since turned, transforming China into the largest food importer in the world. And as food prices have absorbed the implications, triggering occasional riots and revolutions in the poorer parts of the developing world, big international food exporters lick their lips.

As with most things Chinese, exponential growth and the seemingly unstoppable juggernaut of economic development encroach upon the boundaries of hyperbole. Changing food consumption patterns in China have seen increasing demand for foreign consumer food brands outpaced by even faster growth in demand for imported agricultural products and feed stocks.

This has happened despite a continuing stated policy goal of food self-sufficiency. The result has been an evolution in land use within China, greater integration of Chinese state-owned enterprises (SOEs) in global wholesale markets and a subtle shift of emphasis away from self-sufficiency within China, towards prioritizing the security of the Chinese supply chain. And while this fast growing market provides many opportunities for foreign food companies, the political sensitivity of food will ensure conditions apply to their uptake.

Iron Rice Bowl

Food has always had a political dimension. For ancient city-states like Athens or Rome, securing food imports from the Black Sea and Egypt became vital imperial priorities. China, by comparison, has always fed itself, the ability to do so providing a measure of government or dynastic legitimacy through the ages. In pre-reform China the ‘iron rice bowl’ referred to the daily food allowance of workers, but came to symbolize the protected benefits



One of the great untold stories of the last years has been the real shift or improvement in agriculture in China

Matthew Crabbe
Director of Research, Asia-Pacific
Mintel Group

of state employees, such that accession to the World Trade Organization (WTO) meant committing to ‘breaking the iron rice bowl’ and ensuring the market played a greater role in employee compensation arrangements.

In practice, joining the WTO has also meant China participating directly in world agricultural markets, and laws of comparative advantage ensure food cost advantages accrue to more mechanized economies with a relative abundance of arable land, like Australia, Brazil and, most of all, the US.

Although in retrospect China’s growing demand for food must have seemed obvious, it wasn’t always so. Steve Martin, from Shanghai Ying Jie International Trading Company Ltd, recalls his first

encounter with Australian investment in the Chinese food sector from about 1990. “When I first started doing food industry work, our primary market was Japan, and it was like ‘China’s where? There’ll never buy anything,’” he says. “I got the opportunity to send a team of technical people to China Great Wall (China’s largest domestic wine producer). My boss absolutely pooh-poohed it. He just laughed [and said], ‘They’re not going to drink wine.’”

Needless to say, despite China’s history of self-sufficiency, there is a remorseless logic in the fact that China has 20% of the world’s population and only 9% of the world’s arable land. And it is a logic that cultivates a particular sensitivity among China’s strategically minded elite. Being dependent on foreign imports of anything creates vulnerabilities; food especially so. In 2014 China imported \$122 billion worth of agricultural products, more than the entire value of imported copper ore, motor vehicles, aircraft and pharmaceuticals combined.

Water, Water Everywhere

Nor do the potential supply constraints end there. China Water Risk, a non-profit initiative focused on highlighting water risks to business and investors, estimates that due to rapid industrialization nearly half of China’s rivers, reservoirs and ground water supplies don’t meet the standards for human use. In 2011 China’s Ministry of Environmental Protection estimated that approximately 10% of China’s arable land, or 1% of all arable land in the world, was polluted with heavy metals.

Of course, water has many uses, and the costs of clean water can simply transfer an economic burden from agriculture to energy or industry. But Debra Tan, Director of China Water Risk, says, “If you don’t have water, you have no food security.” Food security depends upon water security, which in turn, due to the heavy need for water in the energy sector, depends upon the energy mix, an area where China also has a high level of insecurity. So until China gets its energy policy right, aspirations for food security may be unrealizable, leading Tan to conclude

that China's obvious water constraints will continue to act as a driver for food imports: "We're still bullish on food imports."

Equally important is that water usage clearly remains a priority for the Chinese government, which, in April published an umbrella plan dubbed the 'Ten-point water plan' which sets out a range of high level measures to address water pollution in China, establishing an ambitious target date of 2020 for a sustainable water use equilibrium.

Beyond this, the question of climate change is also expected to exert some temporary pressure on food imports. In 2012 Tang Huajun, Vice President of the Chinese Academy of Agricultural Sciences estimated that, due to climate change, China is set to experience a period in which basic crops will be insufficient to meet demand in about 2030.

However, despite some regional concerns within China, the country as a whole is seen as relatively resilient to the effects of climate change, and due to a forecast population decline will find itself back in surplus before 2050. That being said, the uncertain global impact of climate change on overall agricultural production can only reinforce the perceived need for China to address the question of food security over the long term.

Home Growing

Nevertheless, it is easy to overlook the considerable growth in domestic food production recently. Matthew Crabbe, Director of Research, Asia Pacific at Mintel Group, says, "One of the great untold stories of the last years has been the real shift or improvement in agriculture in China."

This matters because in the long run, as Steve Martin says, "Much as everyone would like to think that Tasmania is going to become the agricultural bread-basket of China... they will send high-end product, nice quality onions and such like, but really, at the end of it, when you are talking about those sorts of crops, they end up being grown locally."

Martin suggests that although it has become commonplace to see China's food imports growing ever larger, it is to some extent up to China how long this goes on for. "Growing an onion is not rocket science. All it is better varieties, better horticultural techniques—it will be easy to pick up... [and]... in the longer term, food growing will be improved," he says.

Nicholas Hunt, Asia representative of Harvest Road, the agricultural division of Western Australian commodities giant Munderoo, agrees. "It will develop. Their production per hectare will increase. Their productivity will increase."

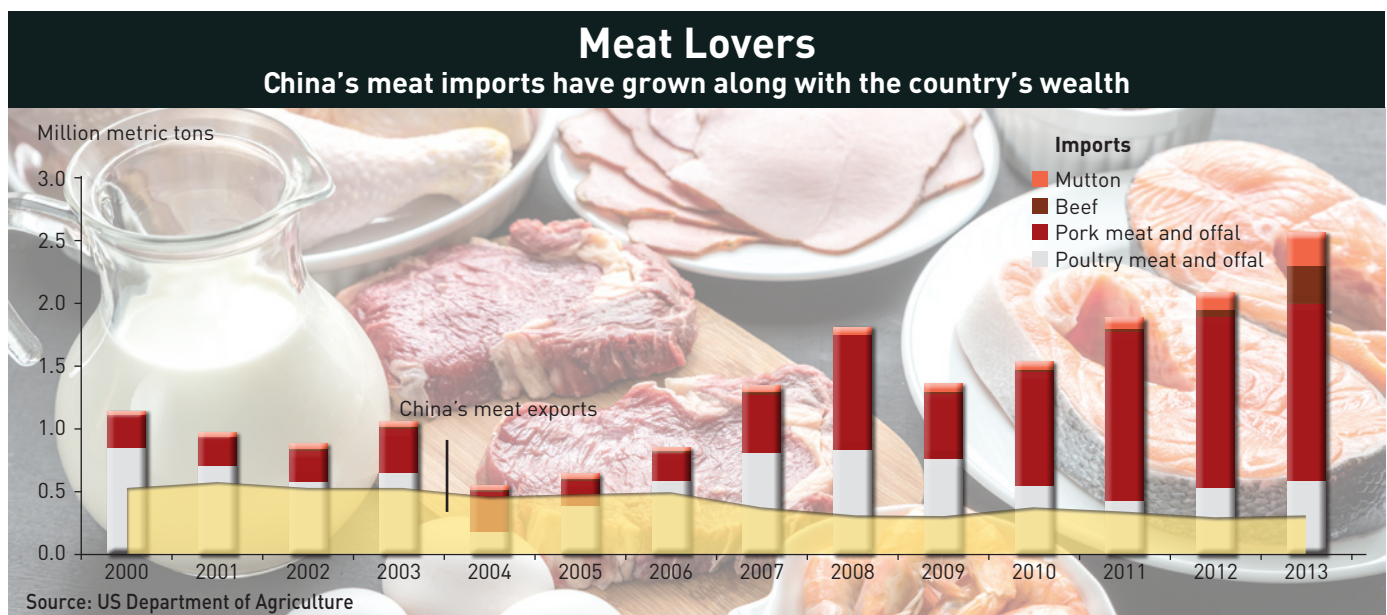
Tan, however, thinks supply con-

straints will hold China's agricultural production back for a long time: "Until there is rural land reform, you're not going to see the sort of tonnes per hectare that you do with large scale farming in the US." Although on a more optimistic note Crabbe says, "as the government has shifted attention towards the environment, that can only encourage more domestic production."

A Moveable Feast

Despite the longstanding rhetorical commitment to food self-sufficiency, however, the Chinese leadership have been relaxing definitions for years. The most significant change was a semantic shift away from 'grain self-sufficiency' towards 'edible grain self-sufficiency', which propelled imports of feed grains such as soybeans to almost 85% of demand in 2014.

The 'key grains' of wheat, rice and corn remain supported by price floors, which sustain production above 95% of domestic consumption. Nevertheless, this focus on edible grain production still distorts land-use by prioritizing total production over efficient production. In February 2014 Beijing accepted the inevitable and shifted the focus of domestic production towards quality and food safety over quantity by stipulating a simple grain target of 550 million tons for 2020, well below es-



timated domestic demand of 720 million tons and indeed below the 2014 harvest of 607 million tons.

All of which merely reveals how it is changes in Chinese consumer food demand that have surpassed expectations, not only of Australian food producers in the 1990s, but the Chinese government as well. Equally, the US Department of Agriculture (USDA) estimated in 2000-2002 that accession to the WTO would increase US exports of agricultural produce by \$900 million, to about \$1.6 billion annually; in 2013 the actual figure was \$25.9 billion.

Feeding the Masses

The whole story of Chinese food imports ultimately comes back to a poorly anticipated rise in consumer demand. According to the World Bank, Chinese average daily calorific intake has increased from 2,163 to 3,036 per person between 1980 and 2009.

Yet behind these numbers lies an even larger increase in what is known as ‘cereal equivalent’—meaning the amount of cereals used to produce the calories—which has more than doubled over the same period, due to the increase in chicken, pork and beef production from 20 million tonnes in 1986 to 70 million tonnes in 2012. The knock-on effect on world food prices is hard to estimate but, for example, the raised price of feedstock attributed to Chinese imports accounted for about half the 23% increase in the price of eggs in the US in 2011, according to an American farmer quoted in a *Tampa Tribune* article that year.

And although Chinese agricultural production has also risen steadily over the same period as it has slowly modernized, it still has a long way to go to catch up. In the meantime it is the big, flexible agri-businesses in the rest of the world that have been best placed to meet fast rising Chinese demand. Nicholas Hunt sees the value of China’s imported food market very clearly. “We’ll look at any opportunity but the really big ones are beef and sheep, grain, wheat for flour, barley for beer... live-export, dairy, not just fresh



Even the taxi driver in Shanghai tells me that if he can afford it... he buys imported food products

Nicholas Hunt
Asia Representative
Harvest Road

milk but yogurt.”

Indeed, Harvest Road is a relatively recent addition to Minderoo group’s long-standing China-focused iron-ore export operations, representing a horizontal diversification strategy premised upon China’s increasing appetite and the premiums this offers to large-volume foreign producers. “There was a belief by the owner, Minderoo and Andrew Forrest in particular, about the long-term opportunities in Asia. Harvest Road has Harvey Beef [acquired only 12 months ago]. But it’s also got a big milk business, fresh milk out of Western Australia... [importing] into China in particular.”

In February 2015, the USDA published a major report highlighting that China was now both the number one export market for US produce, and that the US was the largest supplier of produce to China, identifying the soybean as the key commodity.

Soybeans feed China’s growing livestock herds as average diets incorporate ever more meat, but growth in imports have also risen across the board.

Safety First

Unfortunately, this rising Chinese consumer demand seems to be directed towards imports for more reasons than simply scarce land and the slow pace of agricultural productivity improvements within China. All recent consumer surveys conducted in China reveal the plain truth that consumers prefer foreign branded products if they can afford them, a fact driven by the scandals that hit the Chinese food industry with alarming frequency. Historically, foreign brands have had a prestige value for gift giving, but as incomes rise, expensive foreign brands become affordable for more everyday consumption.

“Even the taxi driver in Shanghai, tells me that if he can afford it, for his children, he buys imported food products, and only from foreign companies,” says Hunt. He adds that trust is so low consumers “won’t [even] buy from a Chinese company that says it’s imported.” Of course, most people don’t have the choice as “imported stuff is really expensive,” says Hunt, who estimates that “Australian beef is four times more expensive than Chinese beef.”

“Many food companies have improved the quality of their products, but they still face this barrier of perception. People still think that because it’s Chinese it must be inferior,” says Crabbe, adding that, “one of the major stumbling blocks is questions about the quality of the food, some of which comes down to perceptions about the environment. That’s one of the real issues for China right now, is to clean up the environment.”

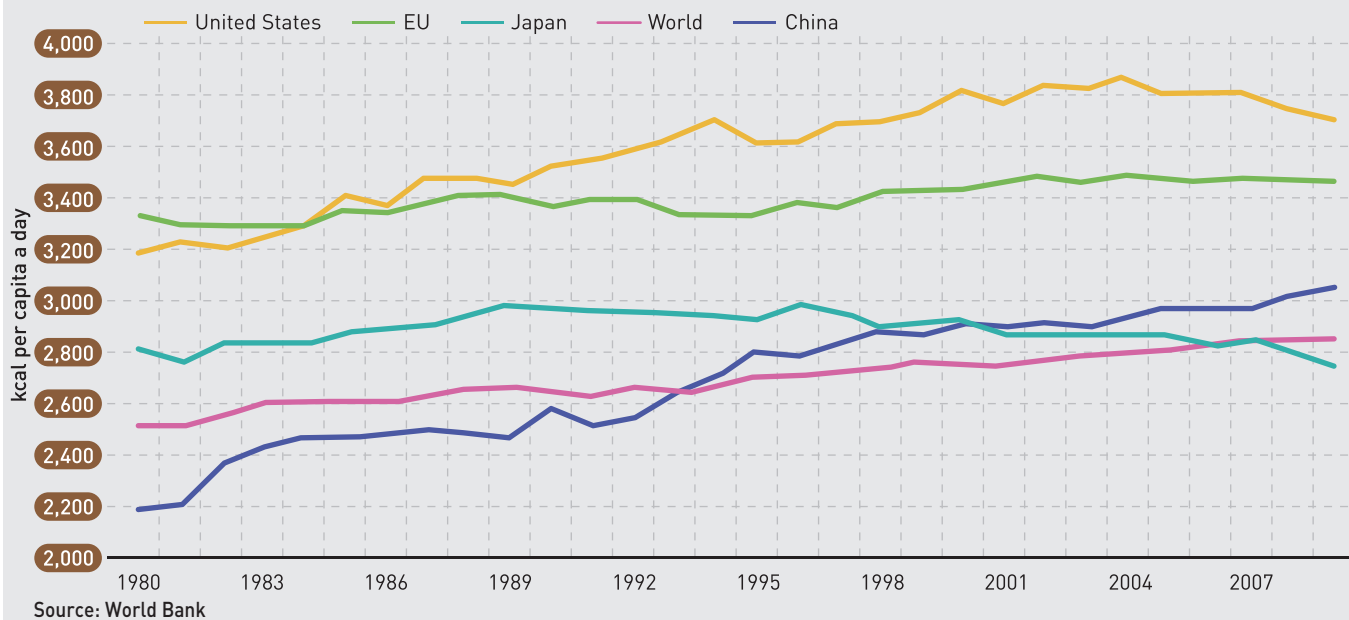
But for Hunt, the problems are starker: “I can’t get over the collapse in trust for domestically produced food... I have little confidence that they will solve their problems.”

King Consumer

Crabbe, however, complicates the picture somewhat: “More Chinese people are travelling abroad and being exposed to

Piling on the Calories

China's calorie consumption has risen dramatically to overtake Japan's and the world average



new things, then sharing that information online through social media,” indicating that consumers in China are increasingly sophisticated. “They are being exposed to many more products outside of China” which “has led to Chinese people actually buying foreign foods online, if they can’t get it in their local stores.” All of which suggests that it is not solely a question of fear that is driving demand for foreign produce, but also curiosity as China opens up culturally, as well as economically.

And with this increasing consumer sophistication has come the slow integration of China’s food wholesalers into world markets. On the one hand, this rhetorically satisfies a re-imagined criteria of self-sufficiency, which extends to the vertical integration strategies of China’s SOEs and is part of the wider ‘go abroad’ strategy, yet on the other hand is just Chinese wholesalers seeking the same product premiums enjoyed by strong foreign food brands in China, while responding to the evolving tastes of their customers.

All of which goes some way to explaining the recent high profile acquisitions by Chinese SOEs of large foreign food producers, like the 2013 Shuanghui-

Smithfield deal, valued at \$4.7 billion. Or indeed Shanghai-based Bright Food, which famously bought UK cereal brand Weetabix in 2012, after having swallowed Australian food group Manassen in 2011, and which has since moved on to acquire the Israeli dairy producer Tnuva this year.

In this, Chinese companies have an advantage over large foreign importers because they have much better access to the established distribution networks within China, but as long as Chinese consumers will pay a premium for imported food, there will be strong competition to capture those premiums.

For the time being, however, there is plenty of demand to go around, and rather than take on Chinese suppliers in their home market, most foreign food suppliers prefer to “do business with China, not in China”, says Hunt. Such an approach has been given a boost by the use of Alibaba’s e-commerce platforms for the purpose of selling foreign fresh food—in June, Jack Ma, Executive Chairman of the company, touted Alibaba’s work with American farmers in a *Wall Street Journal* op-ed.

All the trends behind China’s rising

food imports look set to continue for now, reinforcing the impression of increasing food dependence for China. The Chinese government is, however, gearing up to ensure that China will eventually be able to feed itself again on its own, although that is still some way off.

Given the increasingly global nature of food markets, for now the task of feeding Xi Jinping’s lion actually boils down to ensuring global supply rises with global demand. Which in turn means understanding that the decisive factor behind rising Chinese food imports is a long term evolution in consumer demand rather than shorter term supply constraints, informing a strategy of facilitating the global integration of food suppliers and not underestimating Chinese appetites again.

China’s long-term food priority will inevitably remain to feed itself, even if that means buying overseas supply chain. In the meantime their appetite for imported food, and the difficulty of improving the quality and safety of their own agricultural products, may yet see China continuing to eat everyone else’s lunch, because for the time being, they don’t much like the look of their own.

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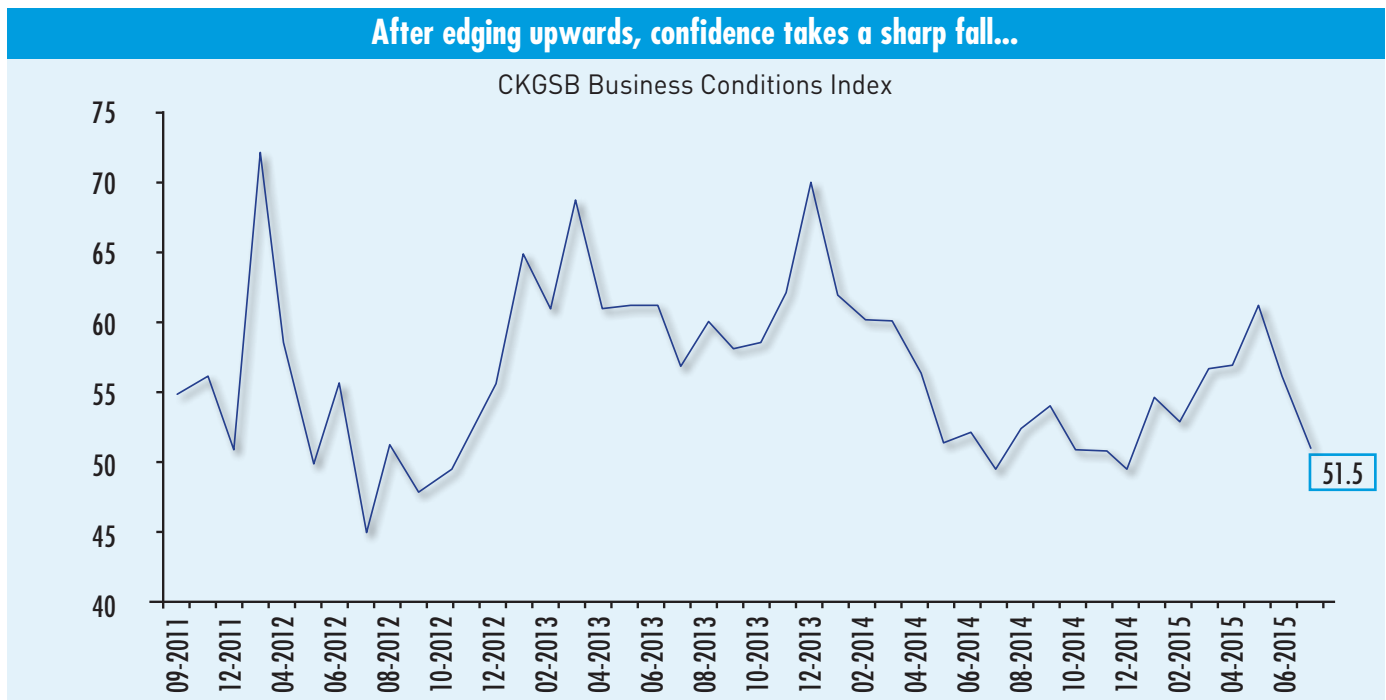
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Cooling Optimism

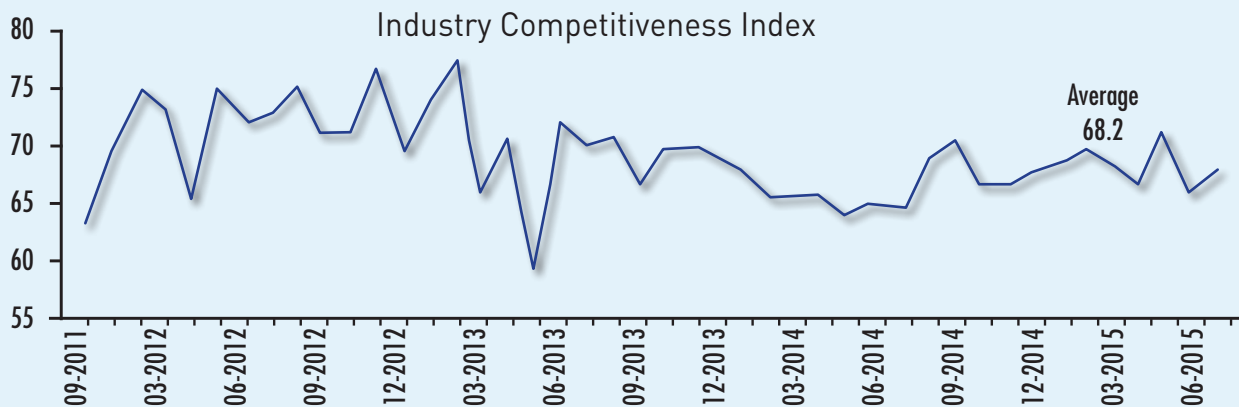
Businesses remain confident despite mounting difficulties, but not by much

In July 2015, the CKGSB Business Conditions Index (BCI) registered 51.5, a drop on June's index of 55.6, and only just above the confidence threshold of 50. The past two months have taken almost 10 points off the index, and this shows that for the majority of relatively successful firms in China, optimism in business conditions over the next six months has been cooling. According to our sample, companies are expecting that the Chinese economy will encounter some difficulties over the next six months. The BCI, directed by Li Wei, Professor of Economics and Emerging Mar-

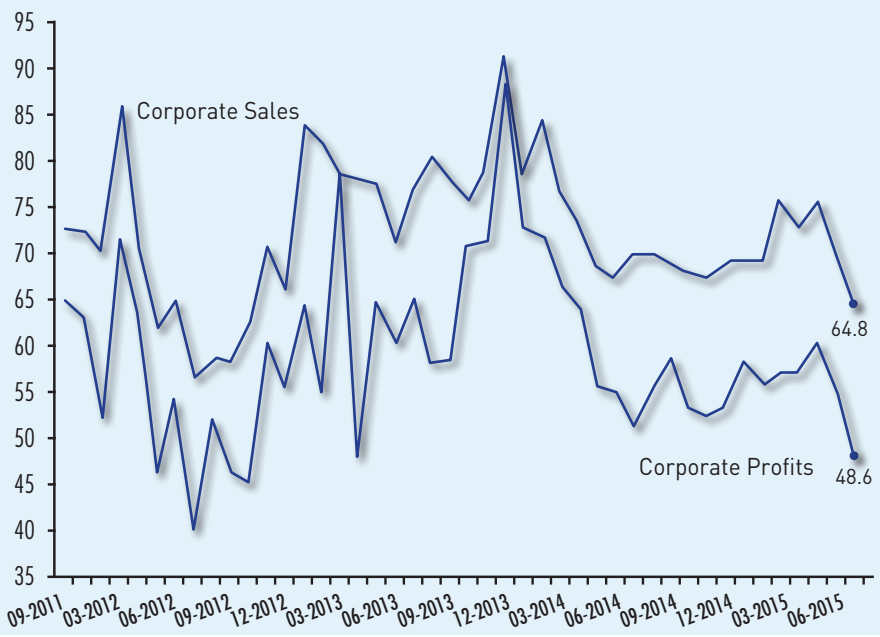
kets Finance at the Cheung Kong Graduate School of Business, asks respondents to indicate whether their firm is more, the same, or less, competitive than the industry average (50), and from this we derive a sample competitiveness index (see Industry Competitiveness Index). As our sample firms are in a relatively strong competitive position in their respective industries, the CKGSB BCI indices are higher than government and industry PMI indices. Users of the CKGSB BCI index may therefore focus on data changes over time to forecast trends in the Chinese economy.



...despite an upward tick in competitiveness

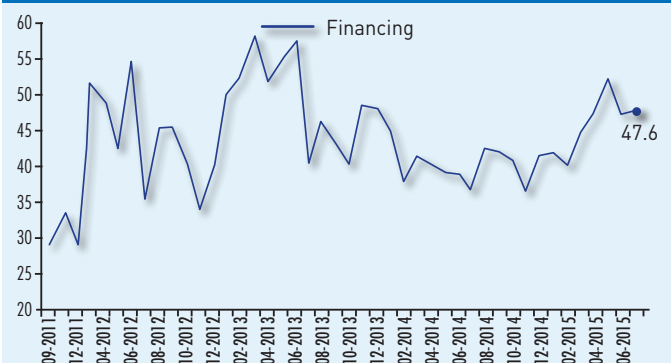


Both sales and profits see a steep fall

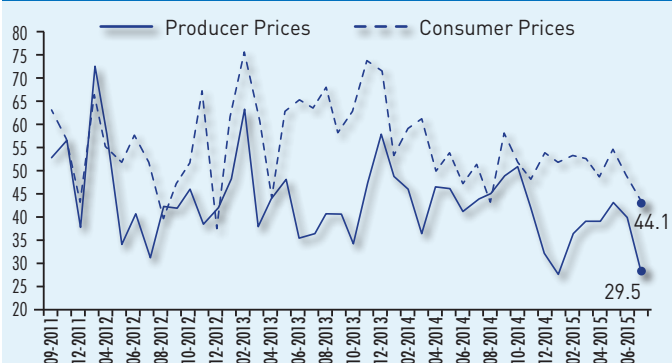


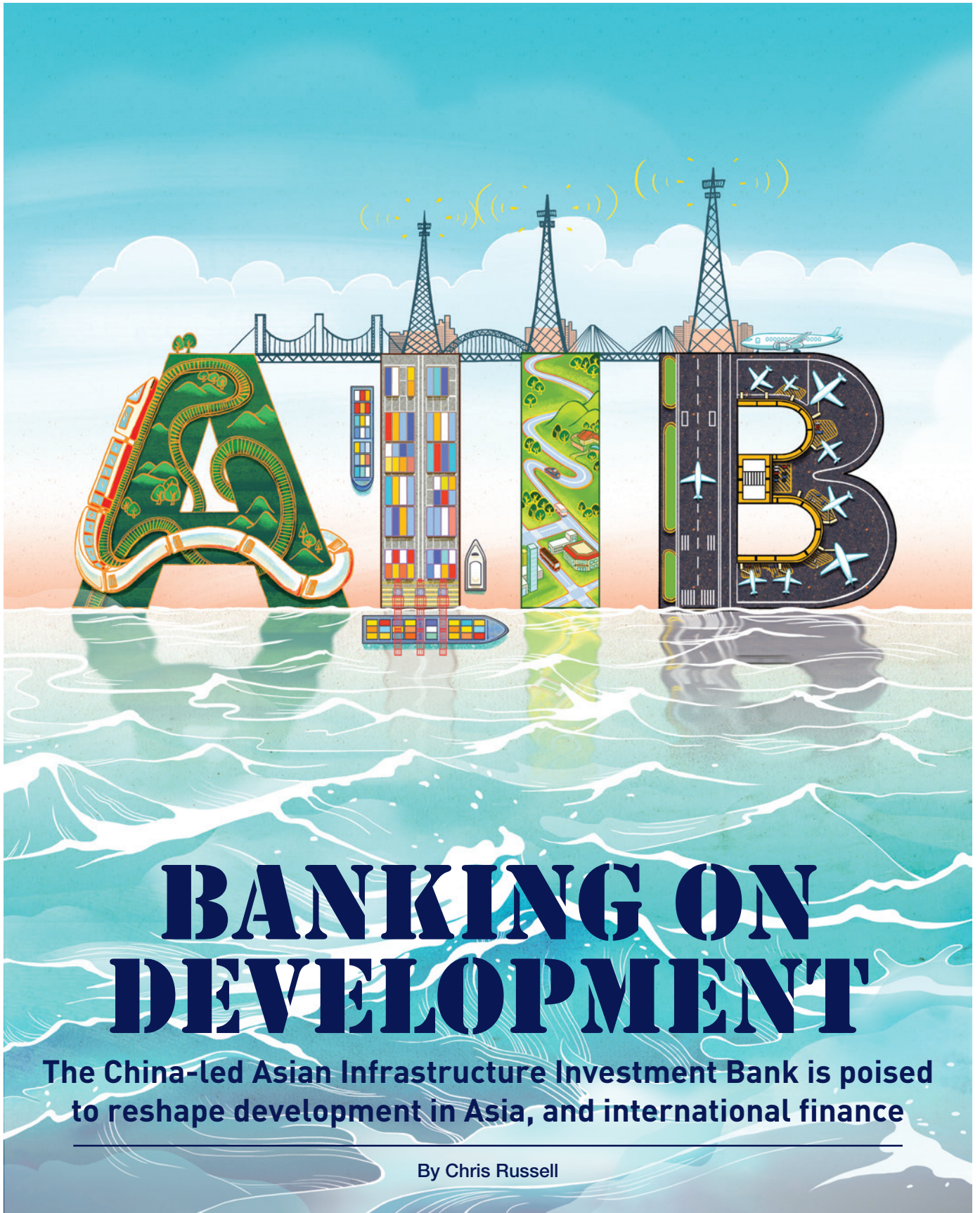
The corporate sales index experienced a sharp decline, from 70.8 in June to 64.8 in July. For profits, the situation is similar, with it now registering 48.6, which is below the confidence threshold. In nearly four years of surveying, a number below the confidence threshold has been rare. This reading shows that companies have a slightly negative outlook on expected profits over the next six months. The financing index rose in July from 47.2 to 47.6. At present, the index is performing relatively well. The consumer price index fell from 48.7 last month to 44.1 and producer prices fell massively from 40.6 to 29.5. Companies appear to be fairly negative about future consumer prices, and producer prices are also expected to fall. If this is to continue, China's economy risks deflation.

...while financing remains below the confidence threshold



Producer prices fall massively and consumer prices also take a drop





BANKING ON DEVELOPMENT

The China-led Asian Infrastructure Investment Bank is poised to reshape development in Asia, and international finance

By Chris Russell

For decades, China steadfastly operated in accordance with Deng Xiaoping's dictum "hide your strength, bide your time". But if there has been a defining feature of the country under President Xi Jinping, it's that this rule no longer applies.

From overseas investments by its leading companies to new bilateral free-trade agreements, China is now going out into the world with a new vigor. And nowhere is this better demonstrated than with the Asian Infrastructure Investment Bank (AIIB), a Chinese-led institution that is set to give Asia a much-needed boost in development funding, as well as giving a greater voice to developing nations who have been hitherto muted in the world of international finance.

In spite of that, or perhaps because of it, the new institution has met with a mixed response from the US, the current dominant force in the major institutions that make up the international development architecture.

In an April press conference alongside Japan's Prime Minister Shinzo Abe, US President Barack Obama claimed that his country was "all for" the AIIB, so long as the countries involved made sure it was run "based on best practices". But for all that, off-the-record comments to the media have indicated at least some degree of US hostility to the institution, with allies apparently being initially warned off from joining.

It wasn't enough to deter them: following a decision in March by the UK to join the AIIB, several other US allies scrambled to join as well. It might be just as well—Asia faces a potentially massive shortfall in infrastructure investment, with the Asian Development Bank (ADB) estimating in 2009 that the region would require \$8 trillion in infrastructure funding between 2010 and 2020. The extra capital is sorely needed.

With the signing of the bank's Articles of Agreement (AOA) by 50 countries at the end of June, the AIIB's management structure, and the likelihood of it matching up to so-called international standards, is coming into clearer view. What is known thus far confirms that China is firmly stepping away from the backstage of international economic decision making and into the spotlight.



Infrastructure projects... are prone to controversy

Scott Morris
Senior Associate
Center for Global Development

In-Group/Out-Group

The AIIB is emerging into a system of development banks that dates back decades and which has played a defining role in the post-war international order. From an Asian perspective, the most important are the World Bank and the ADB.

The former came into being as the International Bank for Reconstruction and Development—it would later evolve into the World Bank in conjunction with the International Development Agency—alongside the International Monetary Fund (IMF) during the 1944 Bretton Woods conference, which established the terms of the global financial order after World War II. Today, the World Bank continues to work in close cooperation with the three other members of the World Bank Group towards its goal of poverty eradication.

In contrast, the ADB, as its name implies, has a specifically regional focus. Opened in 1966 with the aim of facilitating growth in Asian countries, its membership has increased from an initial 31 to its present number of 67 regional and non-regional members, and last year its subscribed capital stock amounted to \$153 billion. The aims of the bank have changed too—in 1999, its focus changed to poverty reduction.

Despite being headquartered in Manila, the ADB has, and continues to be, a Japan and US-dominated institution, with the two countries possessing 12.84% and 12.75% of votes, respectively. That, along with continued influence of Western countries on the World Bank and the IMF, has led to frustration on the part of the world's developing economies, such as China and India, whose much-increased economic clout has gone unrecognized. Even Christine Lagarde, the IMF's Managing Director, has criticized US intransigence when it comes to reforming the governance of the IMF.

Although the AIIB's articles specifically state that it is intended to complement existing institutions, it is nonetheless meant to redress this imbalance.

"The creation of the AIIB is intended to contribute to a more multipolar organization of the international financial system that in Beijing's view should no longer be exclusively shaped by US-dominated institutions," says Sandra Heep, Head of the Economic Policy and Financial System Program at the Mercator Institute for China Studies in Berlin.

And the AIIB is but one prong in China's attempts to change the system—in addition to several funds supporting its "One Belt, One Road" initiative, it is also a member of the New Development Bank (NDB) created by the so-called BRICS countries—Brazil, Russia, India, China and South Africa—which was formally launched in July.

But the NDB differs not only in its wider geographic focus, but also in its Contingency Reserve Arrangement, which will provide liquidity to countries hit by a financial crisis. Moreover, there is an equal distribution of power, and as such it is the AIIB that is most squarely aimed at bolstering China's international influence.

Setting the Agenda

Since its announcement by Xi Jinping and Li Keqiang on separate visits to Southeast Asian countries in 2013, the AIIB has undergone several shifts in scope and size. 22 countries had signed a Memorandum of Understanding in October 2012, but when the time came to put pen to paper on the Articles of Agreement at the end of June,

50 countries signed on the dotted line as founding members of the bank at a ceremony in Beijing, where the bank will have its headquarters.

That development was facilitated by the UK's breaking ranks with the US, and the number is set to expand further—in total 57 countries are in line to be founding members, and they have until the end of the year to sign the articles. Those who couldn't sign on time had been held up by various bureaucratic processes—with the exception of the Philippines, which is currently reconsidering its decision.

But the one thing that has remained constant is China's fundamental role in the bank. Despite rumours that it might soften its stance on some issues, such as having a veto, the AOA cement both China and Asia's leading roles in the institution.

That is in large part due to China's outsize contribution to the bank's subscribed capital of \$100 billion—influence that comes at a cost of \$29.78 billion.

With the distribution of voting rights

deriving from a combination of capital contributions and founding-member status, China comes out with by far the largest share of votes, which the Center for Global Development puts at 26.06%. Under the AOA, that is enough to give China a veto on several issues, including capital increases, new members and the choice of the bank's president, where decisions require a so-called 'super majority'—75% of all votes and the support of two-thirds of its members.

"In the IMF and the World Bank, this super majority allows the US as the biggest shareholder to veto these decisions," notes Heep. "In the AIIB, Beijing will now be in the same position."

Yet in some ways, the nature of the veto is unexpected, says Scott Morris, Senior Associate with the Center for Global Development. "On the one hand, it's not surprising given China's outsized shareholding," he says. "But the decision, for example, to extend the veto specifically to selection of the AIIB's president formalizes China's power

in a way that doesn't exist at the other multilateral development banks (MDBs)." The bank's president is widely anticipated to be Jin Liqun, the current General-Secretary of the Interim Secretariat, who has now been formally nominated by China.

But it is not just China whose influence is cemented under the AOA. The rules also ensure a significant degree of influence for other Asian countries as regional members must hold 75% of the bank's capital. That gives them significant clout through their resulting share of voting rights.

That influence is also reflected in the board of directors, nine of whom must be from the region, with the remaining three being non-regional. In a departure from other institutions, the AIIB will make use of a non-resident board of directors. That might bring benefits of its own, but it also affects the influence of members in other ways.

"This innovation holds the promise of a more efficient institution, but it also creates some potential for tensions among the smaller shareholders, particularly those outside of the region, since these shareholders would have otherwise relied on resident board representation to express their views on the AIIB's operations," says Morris. The rules further reinforce the importance of certain countries, with directors requiring a certain number of votes. While that ensures direct representation for China and India, other directors will have to come from multi-country constituencies.

Although China and the other members must now sort out some of the more detailed operational aspects of the bank, its core structure is now largely clear, and unlikely to change. "The articles are very expansive in defining potential actors, activities, and instruments for the new institution," says Morris. "The drafters clearly wanted to create a document that does not need to be reopened any time soon."

Means to an End

The AIIB's stated aim is to promote "sustainable economic development", and as its name indicates, this will primarily be done through infrastructure investment. There is a clear need for that in Asia, but the project nonetheless represents something of a



throwback: other development banks now tend to shy away from such projects due to the controversy they can generate.

“By defining an institutional mission squarely around infrastructure investment, the AIIB’s architects are clearly responding to the priorities of developing countries, and actually are returning to the roots of all of the MDBs, which were much more focused on infrastructure at the time of their founding,” says Morris.

The bank has also sought to differentiate itself from other development institutions by aiming to be a faster, leaner organization with less bureaucracy, reflected in its use of a non-resident, unpaid board of directors. “The AIIB may well be able to facilitate infrastructure funding more effectively than the ADB,” says Leslie Young, Professor of Economics at the Cheung Kong Graduate School of Business. “Some countries are reluctant to borrow from the ADB due to its bureaucratic processes.”

Beyond the AIIB’s immediate aims, there is of course a wider strategic context for China’s creation of the bank. For all its outward focus, it is at least partially aimed at addressing domestic issues. “China wants to lend support to its domestic economy and provide the construction sector that is suffering from overcapacity with new markets and investment opportunities,” says Heep.

Bidding for projects isn’t limited only to members, and countries such as the UK, Germany and South Korea will all have their eye on giving a boost to their own industries through their involvement in the AIIB, but China is perhaps best placed to profit. In particular, the infrastructure projects will represent a real opportunity for China’s cement, steel and high-speed rail sectors, although it is questionable whether the sums involved are truly large enough to soak up the current excess capacity.

“Economics ensures China the most benefits from the AIIB,” says Young. “The return on infrastructure investment depends on the value added by the trade that it enables; the highest returns to such investment in Asia will involve its dominant economy—China. Both in construction and operation, Asian infrastructure opens avenues for China’s expansion through



[China] can afford to relax about AIIB governance and strategy

Leslie Young
Professor of Economics
CKGSB

thinly-populated areas where its workers, manufactures and industrial skills have few competitors.”

Bridge to Nowhere?

The success of the AIIB will depend at least in part on its ability to act responsibly and placate other countries regarding its standards and safeguards, a capacity that is to some extent in tension with its desire for efficiency. This is unfamiliar terrain for China’s leaders, who have not led such a high-profile multilateral institution—a role they will need to grow into, and quickly. Exactly how the bank will operate on a day-to-day level remains to be seen, yet there are plenty of incentives for China to ensure it meets the necessary standards. That will involve engaging with other members and properly monitoring AIIB projects.

“Given the fact that the AIIB’s creation is at least partially aimed at establishing China as a responsible global stakeholder, Beijing will be careful to avoid the impression that it is trying to overrule the supporters of its development initiative,” says Heep.

At any rate, China still has various means of pursuing projects that other AIIB

members might find more contentious. “[China] can afford to relax about AIIB governance and strategy,” says Young. “Its deep foreign exchange reserves can fund infrastructure investment that does not meet these [world] standards via other vehicles, such as the China Development Bank, the Exim Bank and state-linked enterprises.”

This reflects a broader issue: such projects are often problematic for a number of reasons. “Infrastructure projects (particularly large-scale) are prone to controversy around issues of corruption, environmental impact and local community issues—managing all of these risks continues to be a challenge for the existing MDBs and will no doubt be challenging for the AIIB,” says Morris.

And even then, Young points out that infrastructure projects can encounter “institutional weaknesses in recipient countries, such as a weak bureaucracy that cannot carry out project studies and project design.” Taken together, that means there is a likelihood that not all of the AIIB’s investments will be successful.

Although the impact on recipient countries might be mixed—and previous cases, such as South Korea and China, would arguably have developed successfully anyway without the aid of international institutions—the AIIB is certainly set to lead the way in plugging shortfalls in funding. In May, Japan announced that it would provide \$110 billion in aid for Asian infrastructure projects, with half the funds dispersed through the ADB.

With the AIIB potentially becoming operational by the end of the year if it gains ratification from 10 members representing 50% of the bank’s capital, the answers to many of these outstanding questions could soon be answered. But whether this year or next, it seems safe to say that the AIIB has already been a resounding success for China. From the rush to join its ranks by Western countries to the various innovations of the AOA, the bank is a clear demonstration of China’s attempts to position itself as a regional and global leader coming to fruition. Chinese leaders like to talk of “win-win cooperation”, and here they might just have achieved it. ■

Sky's the Limit

China's DJI holds a commanding lead in the red-hot consumer drone market

By Matthew Fulco



Drunk misadventures rarely spark national debate on the regulation of nascent consumer products or cast the spotlight on emerging, globally successful Chinese companies, but that was exactly what happened when a small drone crashed onto the southeast side of the White House grounds in January after its 3 am test flight went awry, in the process prompting a lockdown and igniting fears that unmanned aircraft intended for recreational purposes could pose a national security threat.

Although it turned out the drone wasn't a threat—it was later revealed it was piloted by an inebriated off-duty government employee—the incident nonetheless vaulted a Chinese drone manufacturer and the issues surrounding consumer drones to the top of the American media agenda.

The maker of that unmanned aerial vehicle (UAV) was Dajiang Innovations (DJI), the world's top consumer-drone company by revenue. Shenzhen-based DJI has taken drones mainstream in the consumer market over the past two years with its agile, remote-controlled quadcopters, named for the four rotors that power them.

DJI's drones are simple to set up and priced competitively—the best-selling Phantom sells for less than \$1,000—but are able to shoot professional-quality aerial footage. That positioning has made them accessible to a wide variety of users, including hobbyists, filmmakers and construction contractors, and earned DJI recognition as a rare Chinese company that is an innovator, experts say.

“DJI was the first drone maker to put together a turnkey package that doesn't require any special knowledge to use,” says Colin Snow, CEO of Drone Analyst, a California-based UAV consultancy. “You just put on the props and go.”

The Phantom's popularity with a broad user base has propelled DJI to the top of the burgeoning consumer-drone sector: the Shenzhen-based firm has a 70% market share, according to consultancy Frost & Sullivan.

Surging sales numbers have made DJI a darling of investors, who see rising potential in drones' commercial use. Following a \$75 million capital injection in May from VC firm Accel Partners, DJI became the world's most valuable drone company, worth between \$8 and \$10 billion. The investment was the largest ever in a consumer-drone maker.

“Investors see DJI as the Amazon of drones,” says Michael Blades, a senior aerospace and defense analyst at Frost & Sullivan in Texas. “They [DJI] have strong brand recognition, which is unusual for a Chinese company.”

Learning to Fly

DJI was born from CEO Frank Wang's interest in radio-controlled (RC) helicopters, according to company spokesperson Michael Perry. “For Frank, RC helicopters have been a life-long passion,” he says. “He wanted to devise a way to use robotics to make flying them easier.”

In 2006, after graduating from Hong

Kong University of Science and Technology with a degree in electrical engineering, Wang moved to Shenzhen and founded DJI. Wang chose to base his company in Shenzhen because of its manufacturing prowess and pool of engineering talent, Perry says, adding: “Being based here is ideal. Our engineers come up with the design, send it to the factory and they send us a prototype later that day.”

At its onset, DJI initially sold Wang's \$6,000 flight controllers—a stabilizing mechanism that allows a radio-controlled helicopter to hover in place—to Chinese clients who used them on do-it-yourself (DIY) drones.

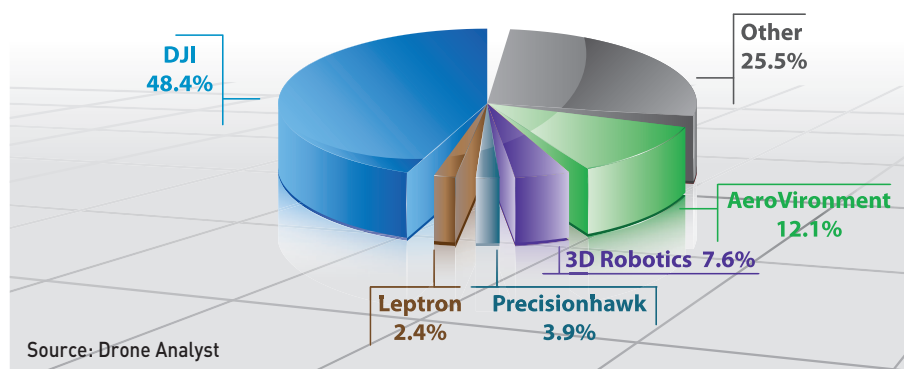
DJI soon began expanding its product offerings and selling to hobbyists in Western countries at specialized trade shows. One of its key early innovations was a transition from single-rotor designs to less expensive four-propeller quadcopters, which were simpler to program.

To sell consumer drones in the US, Wang partnered with colorful UAV entrepreneur Colin Guinn. A native of Texas, Guinn had gained minor celebrity status in the mid-2000s when he appeared on the CBS reality show *The Amazing Race*. Guinn led a Texas-based team in charge of marketing and distribution of DJI drones. They promoted DJI on YouTube with how-to videos featuring Guinn and created a snappy slogan for the brand—“The Future of Possible”.

Guinn was responsible for DJI's success in the US, which now accounts for 30% of its drone sales, says Snow of Drone Analyst. “Colin Guinn was able to create a distribution network of hobby shop retailers and successfully position the brand in the nascent prosumer [a person who consumes and also becomes a brand advocate] market,” he explains. “A lot of that was his personality. He is a great promoter and a likeable guy. He also had input into the development of the Phantom which got DJI out of being solely in the maker and hobbyist realm.”

In January 2013, DJI launched the Phantom—the product that would lead to the company's meteoric ascent. The quadcopter's simplicity, high functionality and

Control of the Skies US Market Share by FAA registration, June 2015



impressive performance in the air allowed DJI to expand the consumer drone market beyond die-hard hobbyists, analysts say.

Yet as DJI's fortunes rose, Guinn and Wang's relationship deteriorated. Wang believed Guinn was infringing on his authority, claiming too much credit for the development of the Phantom and taking the title of "CEO of DJI Innovations", market insiders say. The two entrepreneurs eventually fell out, leading to the Texan's departure from the company in late 2013. Guinn took legal action against his former employer, but they managed to settle out of court for an undisclosed sum, which is believed to be about \$10 million.

When asked about Guinn's role in DJI, DJI spokesperson Perry says the Texan was in charge of the company's distribution and marketing channels in the US, "but it didn't work out, so we parted ways."

Battle for the Skies

Following his bitter split with DJI, Guinn took the money and ran to DJI's archrival 3D Robotics, where he accepted the position of senior vice president of sales and marketing. California-based 3D Robotics, founded by former *Wired* magazine editor-in-chief Chris Anderson, is backed by chip-making giants Qualcomm and SanDisk and aims to take on DJI on its own turf by moving production capacity from Mexico to Shenzhen.

But Guinn's exit has not fazed DJI, whose sales are surging. The company recorded \$130 million in revenue in 2013, \$500 million in 2014 and is on track to crack the \$1 billion milestone this year.

"DJI is going to sell a billion dollars worth of drones this year, and that's only a fraction of demand," says Blades of Frost & Sullivan. "They have economies of scale and a strong first-mover's advantage."

DJI is pushing the drone market forward unlike any other manufacturer, says Mark Perdomo, a drone hobbyist who has built many of the devices with DIY kits. He credits DJI with popularizing the motor and prop combination most commonly used on DIY drones, developing high-voltage motors for increased efficiency, and being one of the first major drone adopters of powerful lithium power battery (LIPO) cells.



Investors see DJI as the Amazon of drones

Michael Blades
Senior Aerospace and Defense
Analyst
Frost & Sullivan

DJI has also introduced electronic speed controllers (ESCs) that use sinusoidal drive, "which is unheard of at a consumer level," Perdomo explains. ESCs handle communication between the drone's main controller and the motors. When equipped with sinusoidal drive, they tell each motor how fast to spin and how much power to use at all times, giving the drone user "complete control", according to DJI.

"Most drone companies as they exist now are essentially integrators. They go out and buy commercially available parts to assemble them," Perdomo says. "DJI is constantly researching to make these parts better, and thus will generally have access to advances first. It's similar to how Apple is often first to get a new kind of display or battery, or first to try out a new configuration that's different from existing norms."

Aside from its technical strengths, "DJI flies smoother out of the box than 3D Robotics. It's much more confidence inspiring for sure," he adds.

Still, 3D Robotics has the potential to be a formidable challenger to DJI, analysts say. "3D Robotics is crawling up DJI's shorts," says Snow of Drone Analyst. "They've got a very strong open-source software platform they are using to position themselves as the Android of drones."

The 3D Robotics platform is designed to allow both individual consumers and commercial users to customize the company's drones to their individual needs. That can include equipping the quadcopters with different cameras and sensors, software interfaces or custom apps.

For instance, when paired with action-camera maker GoPro's cameras, 3D Robotics' new Solo drone allows users to take challenging cinematic shots with the press of a button. Offering that type of control over drone cameras is a first in the industry, the company says. Without 3D Robotics' software, the shots would be nearly impossible for a person to take while maintaining control of a quadcopter.

By contrast, with its built-in camera, DJI's platform allows less room for customization, Snow says.

Not in My Airspace

For both DJI and the overall UAV sector, addressing security concerns is becoming increasingly important. Following the crash in January on the White House lawn, US President Barack Obama called for more regulation of commercial drone technology.

In an interview with *CNN*, Obama said the government needed to create "some sort of framework that ensures that we get the good and minimize the bad" from drones. Obama said he told federal agencies to make sure drones were not dangerous or violating people's privacy.

Currently, the United States Federal Aviation Administration (FAA) permits drone flights for recreational purposes and generally restricts them for commercial use. But as Obama noted, the US doesn't "really have any kind of regulatory structure at all" for the sector.

As a result, US citizens are taking the law into their own hands. On July 31, a Kentucky man, William Meredith, shot down his neighbor David Boggs' Phantom because he thought it was spying on his children. "I had no way of knowing [if] it was a predator looking at my children," Meredith told *NBC News*.

Boggs, who denies he was doing anything harmful, confronted Meredith and told him to replace the drone. At that point,

Meredith told Boggs and his friends he was armed and ordered them to leave his property. Boggs called the police, who arrested Meredith and charged him with first-degree endangerment for discharging a firearm into the air.

But DJI is doing its part to make the skies safer, Perry says. He notes that the company has programmed its drones to not enter airspace over sensitive locations such as Washington, DC or airports. “The flight controllers have the GPS locations of those no-fly zones in them and so the drones won’t enter them,” he explains.

Perry is hopeful that Washington will soon relax restrictions on commercial UAV, while pointing out that DJI comprises nearly 43% of the drones that have been granted a Section 333 Exemption by the FAA to operate commercially. “The FAA wants to keep the air safe, but there is also pressure to get regulations passed soon,” he says. “There are a lot of job opportunities that will be created.”

Blades credits DJI for taking a proactive approach to security issues affecting the drone industry. “I think security is a huge concern and I think DJI has led the way with geofencing [programming UAV to not enter certain airspace] on their drones and has been, and will continue to be, ahead of competitors,” he says.

Staying One Step Ahead

DJI has had enormous success in the consumer-drone market on the back of its first-mover advantage and inexpensive but high-quality products. The company has faced few serious competitors yet, which has allowed it to grow exponentially in a short period of time. Yet DJI’s expeditious growth is likely to slow eventually, experts say.

Blades of Frost & Sullivan expects competition to intensify as new players flood into the market. “Drones are going to be a commodity at some point,” he says. “The real money in the future will be in commercial services like aerial surveying and mapping.”

To maintain its competitive edge, DJI intends to build a drone operation ecosystem, company spokesperson Perry says. “I’m not sure how fast the market will



DJI’s Inspire 1 is aimed at professional users

commoditize,” he says. “It’s much more complicated to develop a drone than say, a smartphone, but this ecosystem will allow our drones to be used for a wider variety of applications and expand our user base.”

In the meantime, DJI can step up expansion in Europe, says Blades. “I think Europe as a whole is an important market for DJI especially since the commercial rules for operation are generally more lenient than the US,” he says, noting that drones have been in use for commercial delivery purposes in Germany for nearly a year. In September 2014, German logistics company DHL launched a “parcelcopter service” that delivers small packages to the German island of Juist in the North Sea, home to about 2,000 people. Deliveries include medication and other “urgently needed” goods.

To gain a foothold in the burgeoning commercial drone sector, DJI rolled out a new and more powerful quadcopter called the Inspire 1 in November 2014. Targeting professional users, the Inspire boasts a 4K camera that can shoot footage with four times the picture quality of the Phantom cameras. The Inspire 1’s camera can also rotate 360 degrees while filming. The Inspire 1 sells for about \$3,000, compared with roughly \$1,000 for the Phantom.

The Inspire 1 is now at the forefront of expansion efforts in Latin America. In late July, Brazil’s Labor Ministry said it would use six Inspire 1 drones to monitor businesses suspected of using forced labor in

Rio de Janeiro. “We’ve just started in Brazil, but there’s no doubt it’s one of the most important markets in South America due to its huge consumer base,” DJI Public Relations Director Wang Fan told *Xinhua* in an interview.

According to Wang, DJI’s sales in Latin America tripled year-on-year in June and July to reach “tens of millions of yuan.”

In Peru, DJI drones are being used to survey and map thousands of ancient Inca ruins sites. When the project is complete, Peru will have a national index containing more than 100,000 archeological sites. “In an effort to preserve these sites indefinitely, archaeologists work to recreate the dig sites and ancient buildings digitally using 3D mapping technology with help from DJI’s Inspire 1,” the company said in a statement.

An additional advantage for DJI is its proximity to China’s fledgling domestic drone market. In 2014, sales began growing quickly in the company’s massive home consumer market, Perry says. “Interest is picking up fast. Now you can even buy a drone in a shop at the Shenzhen airport,” he adds.

Taken together, that puts DJI in a strong position and there are clear skies ahead for the company—at least in the short term, predicts Blades of Frost & Sullivan. “It is inevitable they will lose some market share, but they are still going to dominate the market for the next few years,” he says, “So far, they have been a step ahead on everything.”

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Conversations

"If you don't change or transform, you might not look like you've failed. But in that case, the entire organization will become a failure"



54

Zhang Ruimin

Chairman and CEO, Haier

57



Francesca Gino

Author of Sidetracked

"Mental shortcuts can be helpful in some situations, but most of the time... we rely too much on these shortcuts and on our emotions"

"If you think long enough into the future, there are no jobs that are completely safe"



60

Martin Ford

Tech entrepreneur and author of Rise of the Robots

64



Melissa Yang

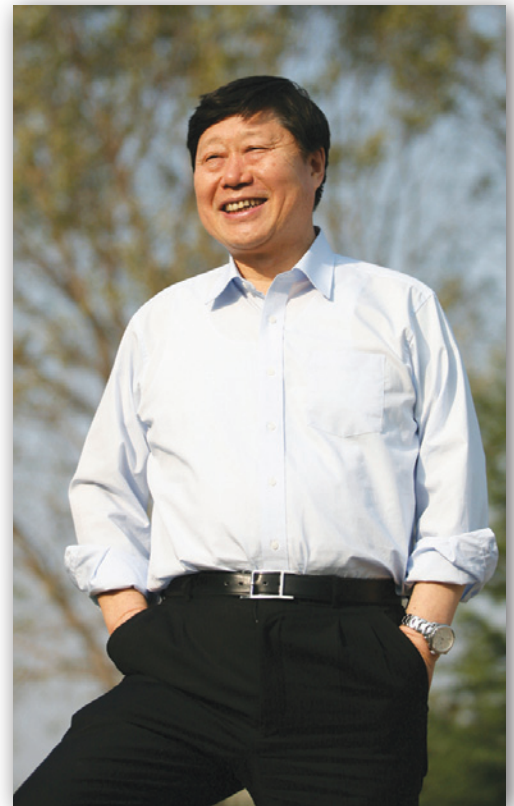
CTO, Tujia

"We figured out we cannot follow whatever [works in] the US or Europe. We have to tailor our products for our customers"

Challenge Yourself, Overcome Yourself

CEO Zhang Ruimin transformed a bankrupt appliance manufacturer into a respectable brand, and is disrupting Haier again

By Neelima Mahajan



It's a story that has become a part of business folklore in China. In 1985, Zhang Ruimin, the young general manager of the loss-making Qingdao Refrigerator Plant, decided it was time to turn things around. He got his factory workers to smash 76 defective refrigerators with sledgehammers. To drive the point home—that there would be no tolerance for low quality—he delivered the first blow himself.

This moment marked a significant turning point in the history of Qingdao Refrigerator Plant (now known as Haier), so much so that the sledgehammer is now housed in the company's in-house corporate museum. Three decades later, Haier is the world's largest white goods manufacturer and boasts cutting edge innovation.

None of this would have been possible without CEO Zhang Ruimin at the helm. He led the company through several path-breaking business model changes, which helped the company build a strong brand, grow both organically and through acqui-

sitions, globalize and evolve a business model where the company “gets close to the customer”. The beauty of it is that he forced the company to change even before competition or technology made it imperative that it did so.

Zhang is now leading the company through yet another transformation. He is, in essence, ‘breaking up’ the company and throwing rigid organizational structures and processes out of the window. The enterprise will, in effect, become an investment platform and the departments and divisions will be like entrepreneurial teams, which he calls “micro-enterprises”. The interplay between the two entities will be pretty much like that between investors and entrepreneurs—for the closest parallel, think of a Silicon Valley within a company.

This structure will flatten hierarchies, put in place a very strict performance-driven culture and set the focus exactly where it needs to be: on customer-driven innovation. The creation of an entrepreneurial eco-

system like this has far-reaching implications for everything: individuals, processes, work culture, internal competition, etc.

Haier's story is already a case study in global business schools and the subject of some books. Zhang, who summarizes his management philosophy as: “Challenge yourself, overcome yourself”, is being acknowledged globally for his somewhat radical ideas on business and innovation. We sat down with Zhang, who is in the process of disrupting Haier yet again, to understand his management philosophy.

Q. Even when Haier was a very small company and relatively unknown outside of China, you would benchmark it with the best of the world, like GE, to measure performance and shortcomings. Also your strategy was to always go to the more advanced countries first and go to the developing countries later. Why?

A. Compared with those brands, Haier was significantly lagging behind [when I took

over]. The best way to narrow the gap is to compete with them on the same stage. By doing this, our shortcomings would be exposed. Take GE. We have learnt a lot from competing with GE, and of course, from cooperating with GE. We absorbed GE's Six Sigma and many other lessons. For Haier, it was more about learning while competing with those well-established brands.

Q. Academics who have studied Haier, often say you have been more aggressive about reinvention than any other company, and have always done it before the need arises. How did you, as someone who has headed the company for over three decades, foresee that the current business model was becoming obsolete?

A. We felt the threat a few years back and the chief reason is that the boundary between an organization and customers no longer exists. The real shock to Haier really came from e-commerce. E-commerce platforms are able to reach a broader user base and offer much lower prices. In other words, the internet blurred the line between organizations and consumers. In a sense, we were forced to make a change. Hence, we came up with the model of connecting orders with personnel because if we want to meet users' particular needs, we will have to connect the staff with the users. In order to succeed in this, the old structure must be dismantled.

We also saw this as a good opportunity because the bigger the company grows, the harder the restructuring will be. Therefore, we accelerated our restructuring progress and flattened the hierarchy.

Q. Big companies with long histories find it very hard to change because of rigid structures. But you have changed Haier several times already and you are doing it yet another time. How easy is it to mobilize an entire organization (of 70,000 employees when you started this journey) towards a radically different way of working? How do you deal with the pain and dissent that comes during the transition?

A. This is a very key issue because transitions will inevitably affect some peoples' interests. We have many senior executives

The real shock to Haier really came from e-commerce

sitting high on the hierarchy and their status might be lowered after the transition. There also are some people who joined Haier very early and they might be a bit, so to speak, "outdated". They might be left out as time goes by.

The path we took is to change people's mindset first. Do people agree to transition? They might say no. But if we don't change, we might end up in a deadlock. We need to first change the mindset, and then the organization.

A company is like a very delicate machine, which is very dangerous in the Information Age. Now we've convinced people that in today's context, a company must be made of an army of smaller enterprises.

Q. How have your leadership skills evolved during different stages of Haier's growth? I'm assuming that the kind of skills needed when Haier was on the brink of failure when you took over are very different from the kind that you need today, when Haier is very successful and global, and you want to push it to the next phase of evolution.

A. There actually is a guiding thread right from the beginning. First and foremost, we will always challenge ourselves. This is rarely seen in other enterprises which stick to the model that made them successful. We have always been a firm believer of the notion that time will always change ahead of us. Hence, if we realize that it is time to change and make a move before the actual change happens, we might still have a chance. So whether we are speaking of leadership style or corporate culture, this is a very critical guideline for us.

Additionally, we've always trusted our employees in creating values spontaneously. Back in the 80s and 90s, we started to let our smaller teams be self-governed, and allowed employees to unleash their energy voluntarily. Unlike nowadays, people back then were relatively isolated. You can only maximize certain employees' outputs. To date, we are still insisting that employee potential should be fulfilled to the maximum. As German philosopher Immanuel Kant said, human beings should be treated as ends rather than as means. The biggest difference we see in today's workplace is that people are no longer restrained within an enterprise, but they are free individuals in the society. So we are also trying to absorb outside resources.

Q. You have a very non-traditional view of organizational hierarchies, very different from Western companies and very different from Chinese companies. Why are you, for instance, trying to cut out the middle management layer?

A. We have experienced an evolution. In the past, Haier's culture was more or less the same as other companies and [the implementation culture] was even stricter than others. The middle management layer played a very important role at Haier because when a new policy was enacted, they were the ones who implemented it.

Regardless of how other organizations execute, at Haier, everything needed to be executed in its full force. But later, when we came to the internet era, we found that implementing everything perfectly might actually undermine Haier's competitiveness.

For instance, we would draft plans for our new products every Spring and Fall. But many products failed in the market. Then we realized that this is all due to the internet. Online shoppers want to communicate, exchange views and compare all the products available. We realized that the old model of implementing and executing everything precisely will no longer work. Consequently, we realized that every employee should spontaneously communicate with the customers and create value.

Q. Major transitions like this also create a sense of unease among employees. Things they are used to—processes, reporting structures, performance measures, internal competition—get shaken up overnight and comfort zones vanish. To what extent is this sense of unease and the lack of a comfort zone healthy or unhealthy? Do you as CEO have to step in and manage that so that employee engagement, a crucial component of organizational well-being, is not lost in the process?

A. Although Haier has been through several transitions the current one is totally different from the previous transitions. We set clear goals for our previous transitions, and we were learning from Japanese or American enterprises, because many big international companies have had similar experiences. However, nobody has experienced the current transition before. We can't learn from other enterprises at all, so we have to start from scratch.

Regarding employees, this has huge impact on them. In the past, employees would do what they've been told to do, while now they have to build a business of their own. This is extremely different so many employees are feeling a sense of unease. But we are not transitioning in one go, but gradually letting them adjust to the changes.

Q. What about employee motivation? In the past, if an employee performed very well, he or she could get more salary or a bonus. In the new Haier, what would the performance measures be like?

A. We used to have a very strict scheme to evaluate employees and then give them bonuses accordingly. It was very complicated. Now users are the core of our development. He who has driven users should be paid in [accordance] with the results he created. He could know the salary before he starts the business and his salary is not decided by the corporation. Initially, this scheme was hard to accept for the employees, but they are gradually adapting.

Q. When we have such a huge amount of innovation happening everywhere in the organization, there will also be some fail-

Nobody has experienced the current transition before. We can't learn from other enterprises at all

.....
ure: ideas that took up resources but didn't work out. How does Haier as an organization view failure?

A. This is a key issue. If you don't change or transform, you might not look like you've failed. But in that case, the entire organization will become a failure. If you do, failures are inevitable. This will come down to how tolerant the corporate culture is. But for me, I need to think of how I can curb the failure ratio. Micro-enterprises must be industry leaders and they need to be evaluated as well. If the micro-enterprises are not performing well, they will be told to stop at any time. Now we are trying to keep the number of failed micro-enterprises as low as possible. Although it sounds easy, the real management is much harder.

Q. How does Haier's culture need to evolve as it goes global to different kinds of cultures and geographies?

A. First of all, the way Haier is different from any Japanese or East Asian companies is that at Haier global offices, whether in terms of team leaders or employees, they are all local people. Secondly, local employees [irrespective of where they are] earn by creating value for local customers. The result might show in our market data, but our basic aim is to encourage them to create value for end customers. This is different from many big companies that pay

and subsidize overseas staff according to their job titles. This strategy of Haier is still a work-in-progress and needs a stronger push, but the majority of our staff is starting to adopt it. If someone finds it hard to digest, then he or she might just be replaced by some other candidate.

Q. What is the biggest risk in this transformation?

A. The biggest challenge right now is whether the self-governed entrepreneurial units will work. It could be hard for them to show some instant results right after the transformation.

From the beginning till now, the biggest challenge has always been management. Many people can't change their mind. To dig deeper, the reason why they can't change is mainly because of their profit. In the past, I got what I deserved after finishing my work, but now things are totally different.

Q. How do you see your own role change in the new Haier?

A. My job now is more like a designer. How can I push the old Haier into a new organization? For example, the old Haier is an aircraft carrier, but [now] we have a fleet.

Q. A lot of what Haier has been able to achieve is due to your own forward thinking capabilities, your own vision. What are you doing to cultivate that vision and forward thinking capability in other people at Haier?

A. This is very difficult because, taking this transition for example, it was brought up very long ago. Employees, including some senior executives didn't quite understand where this came from. So how can I pass this on to them? This is not easy work. On the [managerial] back end, if they can't show any visible results after we illustrated an idea thoroughly, then we have no other choice but to ask him or her to leave. As a matter of fact, more than 50% of the [former] vice-presidents at Haier have left. On the contrary, those who can innovate and think outside the box will be greatly valued and favored. ■



Staying on Track

Francesca Gino, author of *Sidetracked*, tells us how we can stick to the plan and achieve our goals

By Neelima Mahajan

Sometimes the biggest obstacle that stands between you and your goal is you and your wayward mind. You often start something new, but end up not finishing it. Think of the number of times you took a gym membership. Or vowed to eat healthy. Or decided on a career choice. What happened?

So why do we deviate from our well-chosen and well-thought out goals? Francesca Gino, a behavioral scientist and the Tandon Family Professor of Business Administration at Harvard Business School, faced it herself: she started off intending

to be an engineer. But since her then boyfriend was already studying to become an engineer and his mother thought that having two engineers in the family wasn't such a good idea, she ended up studying economics instead.

Fascinated with this problem, Gino ended up researching it. She ended up finding the psychological drivers behind our inability to stick to a plan of action, and also ways to combat them. The result is *Sidetracked: Why Our Decisions Get Derailed, and How We Can Stick to the Plan*, a book that pushed Gino into the big league.

Excerpts from an interview.

Q. Why do most of us, however rational we think we are, end up making poor decisions?

A. Based on the research that I conducted in the last 15 years, I discovered three sets of forces that derail our decisions. The first is “the force from within”, and they are due to the fact that we are humans, and we come with emotions and we [have] biased judgments. The second set is forces from our relationships and these are forces to do with the very fact that not only are

we human beings, but we are [also] social human beings and our relationships with others can actually get in the way of decision making. And finally there is a set of forces they I call “forces from the outside world”: the context in which we make decisions influence the way we decide and in particular, the context can provide pressures or other factors can come in to make us irrational.

Q. What are the psychological drivers that influence the choices we make? What roles specifically do mental shortcuts or biases play?

A. Mental shortcuts can be helpful in some situations, but most of the time, what we end up doing when we’re making decisions is we rely too much on these shortcuts and on our emotions and as a result, we don’t give the chance to our mental processes to use more deliberation and so we make poor decisions.

There is some beautiful work by Daniel Kahneman who looks at the types of processes we use when we make decisions. When we process information, there are two systems in our brain, which is a little bit of an oversimplification but it’s actually quite helpful to think about it in those terms. One is what you call System 1 and the other is System 2. System 1 is automatic, emotional, intuitive. System 2 is logical, it requires deliberation. What tends to happen with decisions is we like to latch on to System 1 and so we make all sorts of errors that lead to poor decisions. What we should be doing instead is engage System 2, and make sure there is more deliberation before we make our decision.

Q. You say that most people want to behave in ways that are consistent with their self-image, as competitive, effective and honest human beings. How does our self-image get in the way of decision-making? What implications does this have on the choices we make and the rights and wrongs of them?

A. We come to inflate our self-views. In class, I ask people to weigh themselves on a bunch of dimensions, such as their abil-

We have very positive—too positive—views of who we are as individuals... and the problem is that this will lead us to overconfidence

ity to make decisions, their ability to interact with others, and what I see regularly is that most people tend to think they’re better than average. This exercise shows that we have inflated self-views. We have very positive—too positive—views of who we are as individuals and what we can accomplish and the problem is that this will lead us to overconfidence that makes us focus too much on our own perspective of information and disregard what others can bring to the table. And this is problematic because this makes us reluctant to listen to the advice and opinions of others, when in fact, listening to them would lead to better decision making.

Q. What about people with negative self-images?

A. So there are people who are less confident than others, but in general, when you ask people to rank themselves against others on a bunch of dimensions such as honesty, decision making, their ability to negotiate, ability to get along well with other

people, they actually think of themselves as better than others, so we tend to have a positive self-view.

Q. Are certain types of people more likely to get sidetracked?

A. It’s a question that I get a lot, and there are certainly individual differences that matter. However, all the tendencies that I talk about in the book are tendencies that we all show. It’s just a matter of how much of a push this factor needs to give us before we get off track. So it affects all of us for the very fact that we are human beings.

Q. How can we guard against our blind spots that derail us? What techniques should we employ to stay on track? Does motivation play a role at all?

A. At a high level, we can do a couple of things. One, is being aware that these different forces come in easily and derail our decisions, and have the ability to recognize that biases not only affect the choices of others, but also our own choices. And second, having a checklist of questions that we can ask ourselves when we make decisions to be sure that we are not getting off track. For instance, one of them is taking our emotional temperature: making sure that we are in the right emotional state to make decisions rather than feeling too anxious, or too angry, etc. So it’s a little bit like having a checklist for a surgeon before they walk into the operating room, and being more thoughtful about engaging System Two when we make decisions.

Q. One of the things you talk about is zooming out in order to make good decisions.

A. Research shows how easy it is for us to be narrowly-focused in the sense that we just think about our side of the story or constraints that affect us, and we have a hard time taking a step back and looking at the problem from a broader perspective. So for instance, realize that constraints that affect us also affect the people who are working with us. One solution I propose is what we call zooming out: the ability to take problems and not get stuck in the details, but being able to take a step back and being able to look at the decision from a broader [per-

spective]... from a distance, from a higher level of perspective.

Q. Let's shift gears to your work on getting employees to think and not just do. What implications does that have for job design?

A. One thing that I think would be very important for any employer to consider is in what ways they can allow for more flexibility and control in people's jobs. And maybe the job doesn't need to get redesigned, but what employees ask right from the start of the employment relationship is different. Some of the work that we've done shows that if right at the beginning of the employment relationship, people come into the organization and get rewarded, if the company gives people space to think about their uniqueness and their strengths, how they could apply them to their jobs, people feel a greater sense of control and the potential to expand their strengths. They're happier on the job, they'll be more productive, more likely to stay with the organization. So, in that case, we didn't change anything about the job per se, but people from the start have a greater opportunity to express who they are. And similarly, in the cases we've done where we give people the opportunity and time to think at the end of each day, we didn't quite change the job, but we created room for people to have the opportunity to spend some time thinking rather than doing.

Q. When you look at companies that do this well as opposed to companies that don't is this defining factor?

A. So we have looked at companies that give people more time to think. Some companies, especially in the tech industry, are actually giving people some time off work so that they can work on their own projects and they've shown that this can lead to some innovation that is actually beneficial to you, beneficial in itself. I think that rather than changing the job, the job design, they change how the work is organized or designed so that there is a little bit more flexibility that comes into it.

Q. Can you give me examples of this?

A. Throughout the week, you spend some time on projects that you are interested in

How to Avoid Getting Sidetracked:

1. **Raise your awareness:** And keep your self-views in check
2. **Take your emotional temperature:** Are emotions clouding your judgment?
3. **Zoom out:** See the bigger picture
4. **Take the other party's point of view:** Your opinion alone may mislead
5. **Question your bonds:** Are those connected to you impacting your decisions?
6. **Check your reference points:** Are your decisions based on comparisons with others?
7. **Consider the source:** Question the source of your information
8. **Investigate and question the frame:** How you frame something impacts how you react to it
9. **Make your standards shine:** Identify personal standards, keep them salient and stick to them

pursuing, and that might generate some ideas that are beneficial and that you can apply back to the organization. That would be one example. Or some companies allow employees to choose when to work or how to allocate their time to different activities, so that would be another way to allow for more flexibility. Some organizations are very conscious of the fact that people need time to recharge because they can get exhausted when they are working really hard so they build in breaks that the people can take throughout the day. Those are ways in which I think the employers are being a little bit more thoughtful in how to structure the work such that you get the benefits of people being engaged and productive.

Q. So at some level, this is about flexibility and structure of work. But on a different level, it's about me as an employee and my identity and how my contribution is being viewed within the organization.

A. Exactly.

Q. How should leaders evaluate their own behavior so that it doesn't come in the way of employees thinking freely? Does this call for a very different kind of leadership style?

A. I think what they ask for is a different

level of awareness and willingness from the side of leaders of asking themselves really tough questions in the sense of: "Am I creating the right circumstances or right context for people to be engaged and succeed?" I think that a lot of leaders have a chance to talk to the organizations but are pressed [for] time, and the first thing that goes when people are working hard and they have long lists of things to do, is the time to think about how to best develop others, motivate them, and dedicate time to ensure that you are giving them the right conditions for them to succeed. A little bit of time to think and make sure that they are providing the right context for people to succeed will be good on the part of leaders.

One company that comes to mind is Egon Zehnder. They are working really hard in terms of thinking about how to best assess their people and help them in their development. A few years back, they introduced a new model to assess and develop people called the Potential Model. They moved away from the idea of thinking of people's competencies but rather assess their potential, which is not something that a lot of organizations focus on and do. Even if there is a gap in people's experience, as long as they have the potential, which is a mindset towards learning, being curious, being persistent, then they can make up for that gap. It is particularly thoughtful in the way they think about assessing their people, creating the right circumstances for them to be engaged and to succeed, and making sure that everybody is on track and assuring that that is the case.

So if you look at, for example, the way even their partners are compensated for the work that they do, there is a lot of focus on benefits to the organization and the experience they have rather than just compensating people for the specific type of work that they're doing, which would be too open to biases because maybe you are just working in a market that is very hot or on projects that are particularly important for and relevant across organizations. So they seem to be very thoughtful of creating the right circumstances for people to succeed. ■



Rise of the Machines

Martin Ford, author and technology entrepreneur, explains the seismic effects that will come from workplace automation

By Major Tian and Neelima Mahajan

It's no longer news that artificial intelligence (AI) can defeat professional players in intellectual games such as poker and chess. But can you imagine a scenario where such software outperforms ordinary workers at what they do for a living?

When it comes to the potential impact AI could bring, mass unemployment is probably a more realistic concern for us

than, say, something like Skynet, the murderous AI system of the *Terminator* film franchise, says Martin Ford, a technology entrepreneur and author of two books (*Rise of the Robots* and *The Lights in the Tunnel*) about how tomorrow's technology might give a fatal blow to the social structure that we thrive on today.

If we look far enough into the future,

Ford says, few jobs would be safe from being automated, as algorithms with deep learning capabilities would take over not only entry-level jobs, but also those requiring years of training and experience.

"In terms of jobs [that may be done by AI]... the important word there is 'predictable'," Ford says. "If another smart person could study a record of everything you've

done in the past in your job and based on that, learn how to do your job, then someday, maybe a machine might be able to do the same thing.”

Ford’s warning of a jobless future is not entirely new; and as always, the idea is controversial because opponents argue that historically, workers have survived successive rounds of technological revolution—and they always managed to find other jobs in newly emerged industries. But Ford disagrees. He says that the rise of AI will impact almost every industry because the determining factor here is not workers’ skill set, but the nature of the job.

“People have been able to move from one kind of job to another kind of job and still do things that are relatively routine and within their capabilities,” Ford says. “It may be hard for a lot of people with average capabilities and skill sets to really find a place in the economy [in the future].”

So how fast would the scenario come true? And before it does, how could the society possibly preempt and adapt to the economic and social changes that are on the horizon? We discussed these issues with Ford in a recent interview in Beijing.

Interview excerpts:

Q. What led you to the conclusion that robotics will transform our world, and what are some of the early signs of this scenario that you already see unfolding?

A. Well, I began thinking about this partly because of my own experience and my own business. I started a very small software company in Silicon Valley back in the 1990s. Back then, making software was pretty labor-intensive because software was produced on physical media, on CD-ROMs, and there was a printed manual that went with it, and it all had to be packed up in a box and sent to the customer. So if you ran a small company, there were jobs there for average people and there was a fair amount of that work. But what I saw in my own little business is that within a few years, that just kind of went away. Now, software is delivered electronically, sometimes it’s not even delivered, it’s hosted in a cloud or some-

The main thing is that machines and software today are taking on intellectual tasks... not like the machines of the past that just substituted for muscle power

thing. So a lot of that routine work for average people just kind of disappeared. It occurred to me that what I was seeing was really a preview of what was likely to unfold in the whole economy.

Q. In what ways is the current technological revolution very different from the ones we’ve seen before?

A. Well, the main thing is that machines and software today are taking on intellectual tasks. They’re not like the machines of the past that just substituted for muscle power. You had powerful machines that were much stronger than people or stronger than horses and animals and they displaced a lot of workers, but they couldn’t think. Today’s machines, in a limited, specialized sense are at least able to think, to make decisions, to solve problems, and most importantly, they can learn. We’ve now got algorithms that actually can learn,

that can figure out things for themselves. And that’s what’s dramatically different.

Q. Which jobs and industries are likely to be most vulnerable to automation in the near future?

A. Well, in terms of jobs, it’s going to be the jobs that are more routine and repetitive and predictable. The important word there is predictable, because that sort of ties in with this idea of machine learning, which is the thing that is really driving all of this. If you’ve got data, lots of historical data that kind of encapsulates the way a job has been done in the past, you’re going to have algorithms that can go through that data and learn from it and figure out how to do a lot of things, and that’s what we’re seeing with machine learning.

You can think of it in terms of another person. If another smart person could study a record of everything you’ve done in the past in your job and based on that, learn how to do your job, then someday, maybe a machine might be able to do the same thing. So that’s a good gauge of whether a particular job might be susceptible to this.

Q. A lot of these jobs tend to be in manufacturing. That’s where you have the repetitive kind of system in place. Do you think this would spread to other sectors as well? The service sector, for instance, which we thought was immune to this trend—it needs people skills, it needs customer-facing abilities—seems to be on the cusp of a change itself.

A. That’s right. In advanced countries like the United States, nearly everyone works in the service sector. We don’t have many people working in manufacturing anymore. So that’s really where the big disruption is going to come from. It’s going to be when these forms of automation invade the service sector. And also, white collar desk jobs. A lot of this is just about smart algorithms that can do a lot of the jobs that people sitting at desks and offices can do. The whole point is that this is going to become much more broad-based. It’s not just about actual robots in factories anymore. It’s really about broad-based automation that’s going to impact all kinds

of jobs and all kinds of industries, and really at all skill levels. That's what makes this a disruptive change that has just a huge impact on society.

Q. What about the more creative jobs? Or the ones where there's maybe some emotion involved?

A. For now, we can say that those are probably the safest jobs, and if you want to be in an occupation that is relatively safe from this, you're going to want to have a kind of job where you're doing things that are creative, or where you have a lot of interpersonal reaction with people. But you can never say never. Clearly, technology is getting better in those areas as well. There is research on creative algorithms that have, for example, been demonstrated to write music and paint pictures, original pictures, and design things using geometric programming. So there is innovation in that area, and there's also innovation in an area of emotional robots, robots that can interact with people in a human-like way. There's also a lot of research being done on that as well. If you think long enough into the future, there are no jobs that are completely safe.

Q. In previous cycles, whenever such disruption has happened, people have always found something else to do. They shift to something else—a different sector, or different skills. What do you think will be the solution this time around?

A. Well, in the past, that worked because the machines hadn't replaced all the routine work. People have been able to move from one kind of job to another kind of job and still do things that are relatively routine and within their capabilities. Not everyone can be trained to be a top-flight scientist or someone that is creating or innovating. Most people are average and they're best-equipped to do average things, so I think that one of the issues that we're going to face in the future is that machines across the board in every industry can displace those kinds of jobs. It may be hard for a lot of people with average capability and skill sets to really find a place in the economy. So I think that eventually, in the longer

A lot of people working in the field believe that we will someday build a machine that is as smart as a human and can think like a human

term, we're going to need a more radical adjustment to this. Perhaps something like a guaranteed income where everyone, whether they have a job or not, will have access to some sort of an income so that they can survive and get by. And that's a very radical, controversial idea right now, but I think that eventually its time may come because of this disruptive impact.

Q. So how smart can software get? How much of that thinking ability can we get into machines and artificial intelligence?

A. That's the open question. A lot of people working in the field believe that we will someday build a machine that is as smart as a human and can think like a human. And people also believe that if that ever happens, it's inevitable that the machine will become much smarter than people, so there'll be what's called an "intelligence explosion", the smart computer will start designing a better version of itself, and before we know it, we'll be second-rate entities on this planet. There'll

be these machines that are vastly more intelligent than we are and a lot of people worry about what that will mean, including some very smart prominent people. Stephen Hawking, the famous physicist, is really worried about this and has written articles warning that artificial intelligence could be an existential threat to human beings. That's one possible outcome. I don't think we're close to that, but it could happen in the further future.

For the time being though, I think the thing we need to worry about most is the impact on jobs and the economy. That's the thing that's going to happen first and the reason is that doesn't require that kind of science-fiction-level artificial intelligence. It just requires the kind of specialized, practical innovation that we're seeing right now.

Q. So right now, people have a purpose—they live lives, they have a work life, they are useful. What will happen to that in the future?

A. Right now, people tend to look to their jobs for two things. One is that it's an income that you need, and the other is that it gives you this sense of purpose and fulfillment. I think that one of the challenges for the future is going to decouple those two things so that you might get your income from one place and you get this sense of fulfillment for doing something useful from somewhere else. There are plenty of things that you could do that are useful and are important that don't necessarily bring an income, so I think that's probably the wave of the future.

Q. Thomas Davenport of MIT is of the opinion that as there's increased automation, it might actually improve the possibilities of employment in ways in which knowledge workers, especially, collaborate with machines to do things that neither could do well on their own, the premise being that machines will allow us to take up tasks that are much more sophisticated than before. What are your thoughts on this?

A. There's a debate about this. I tend to believe that those collaboration jobs will be there, there will be some, but I don't think

there will be millions and millions of those jobs, and that's what we're facing. We're going to have technology that's going to displace people across industries, they're now doing all this routine work, we're talking about millions upon millions of jobs. So there will be new jobs collaborating with this technology but I suspect there won't be enough of those to absorb everyone. I also think that as time progresses, the technology gets better and better, and it will begin to get more autonomous. It will begin to displace people and work without that level of collaboration.

Q. Do you think that different parts of the world will hurtle towards this scenario at different rates? Like some countries will hit it first?

A. Yes, to some extent. Some countries are more technologically advanced than others. This will have the biggest impact in those countries that have the most advanced technologies. A country like the United States will be hit relatively soon. China is also advancing very rapidly. And information technology is a bit different from other technologies in the sense that it's borderless; it just goes everywhere. Just because an innovation happens to occur in the United States first, for example, doesn't mean that it's going to be a long time before that same thing impacts China.

In fact, there are many Chinese companies also that are very involved in innovations, so this is something that is really global. There also will be implications for even poorer countries that really haven't even gotten on the path at all, because it may mean in the future, there will be less low-scale manufacturing jobs to help those countries become more wealthy. So on some level, this is going to impact every country in the world. It's going to become a true global issue.

Q. How deeply have you looked at China in this regard? For instance, in the last three years itself, we've been seeing things like Foxconn and its army of Foxbots.

A. Foxconn has been talking about that. They are very heavily focused on that, as are a number of other Chinese companies.

If we want capitalism to continue to succeed..., that will require something eventually like a guaranteed income

Right now, in manufacturing, some Chinese companies are doing it because they actually have a shortage of workers, or because wages are rising and they don't want wages to rise, and that's what's been motivating them to get into robots. China is bringing in more and more robots. In a year or two, they'll have more robots than any other country in the world. And yet, the number of robots you have relative to workers is very low compared to other countries, so there's a long way to go.

At the same time, these technologies are also coming to the service sector and of course, that's the sector that's supposed to absorb the workers that lose their jobs to manufacturing robots. So in the case of China, everything is kind of happening at once, more so than was the case in the past in the US and other countries, which I think could be quite disruptive here.

Q. In the end, when we finally see this scenario unfold, what do you see the role of the government will be, in different countries,

of course, and what is the future of the current market-driven capitalist system?

A. That's the question. One of the implications of this is that if we really start to lose a lot of jobs, or if we drive down wages of workers because of technology, then people have less money to spend, so that undermines demand, and could eventually undermine capitalism. If you're a business, you can't sell if there's no one to buy your product. And that's sort of the foundation of capitalism.

Historically, the mechanism that gets purchasing power into the hands of consumers so they can buy the things that are produced is jobs. If jobs go away, then we don't have that mechanism anymore. So I think if we want capitalism to continue to succeed, we're going to have to adapt it. And I think that will require something eventually like a guaranteed income, another mechanism to distribute purchasing power throughout the economy. If we don't do that, if we just let things go and don't do anything, then I think that could be a real threat to the entire system eventually, we might run into real problems, in fact, a crisis.

Q. What are some of the science fiction movies that you've seen that best reflect your ideas of how society will evolve in the future?

A. I think the one example that most people would give as a very utopian example that we would like to be is *Star Trek*. They've got this economy that is apparently post-capitalism—no one wants for anything, they've got a thing called the materializer that just produces anything you want, people don't work for money, they work for fulfillment because they want a sense of purpose, so I think that's the utopian image that we all have in our minds that we would like to strive for. And of course that's a much better example than the very dystopian examples of movies like *The Terminator* and *The Matrix* and all of these other Hollywood movies where the robots kill us all or do something else terrible to us. That's what we should strive for, but if we want to be on that path to that kind of very optimistic outcome, we're going to have to recognize these forces and adapt to them. ■

Homes Away From Home

Melissa Yang, CTO of Tujia, “China’s Airbnb”, explains how to make the sharing economy work in China

By Neelima Mahajan



In recent years tourism has taken off in a big way in China, propelled by rising disposable incomes and government support to the sector. Riding this boom is Tujia, an online holiday rentals website. Tujia, which was founded in 2011, is often called China’s Airbnb because it has a similar model: of connecting home owners with travellers looking for a place to stay. But there are significant differences between the two as well.

In just about four years since its launch, this sharing economy company has already reached a valuation of more than \$1 billion, and it has attracted investments from the likes of LightSpeed Venture Partners, GGV Capital and All-Stars Investment, as well as travel industry players like Ascott, HomeAway and Ctrip.

Tujia, which lists close to 300,000 properties in 250 destinations in China on its site currently, is now working on its global expansion (it already has 15,000

properties overseas in 100-plus destinations). In this wide ranging interview Tujia co-founder and Chief Technology Officer Melissa Yang, an Expedia veteran, explains how a concept like Tujia gained acceptance with the Chinese consumer, how it is different from Airbnb and the rationale behind the global expansion.

Excerpts:

Q. What gave you the confidence of setting up a vacation rental business in China?

A. From the supply side China is the largest housing country in the world—there are about 50 million vacant homes in China. All those homes are not being utilized. That’s the supply side with big potential.

On the demand side Tujia is more about vacations, and as you know the average GDP of China has been growing, so [there is a] stronger demand [for vacations]. We saw a strong demand and sufficient supply, so that’s why Tujia was born.

Q. The Chinese consumer, and to a large extent the Asian consumer, is very different from Western consumers. They would think 10 times before staying in a stranger’s house. What gave you the confidence to bring in a concept like this which the Chinese consumer may not accept readily?

A. I was in the US in the travel internet business for over a decade. [I noticed] two differences between Chinese or Asian travelers versus Western travelers. One is the trust issue. Unlike hotels, vacation rentals are not standard. The second is the expectation on level of services. I have Indian friends, who told me the same thing as Chinese: when people [go] on vacation, they like to be served. [When] my husband and I vacation in the US... it’s easy for us to take out the trash. But in India or China, they don’t like to do that.

So what Tujia does is, one, we provide services tailored to Chinese customers. Second, to solve the trust issue, we actually

have the offline [part]: we have local teams working to do the check-in, check-out, and for the properties served by others—by third parties—we actually have each house inspected. We make sure all the photos are authentic. One of the things you may think is the photos may not be correct. Some worries will be: “If I reserve it, will the room be reserved for me?” So if a room is not reserved [for some reason], Tujia is responsible for finding accommodation for that customer. By providing [such] services, we tailor our product to Chinese users.

Q. That is so different from Airbnb in the US. Are these services you introduced after you launched?

A. No, we started with this. We figured out we cannot follow whatever [works in] the US or Europe. We have to tailor our products for our customers.

Q. So this is also very resource-intensive in terms of the number of people you have to employ.

A. There are over 300,000 properties [in China] on our site. [We manage] about 10,000 properties ourselves, and the rest of these are managed by third-party property managers. So the majority of them are managed by others.

For instance, in Beijing, one property manager manages 20-30 apartments in the Central Business District. If someone applies saying, “I want to get my property on Tujia”, we have [a] local person inspect her properties, take photos, and then get those listings on our site. If someone books one of her properties, we’ll take a commission from her.

Q. You say you offer a lot of services to the customers. What kind?

A. All our properties have services [such as cleaning]. It depends on the location—sometimes it’s a daily clean-up, sometimes once every three days. It depends on the property. We have some luxury villas in Qiantao Hu, pretty close to Shanghai. [These are] very expensive luxury villas designed by a very famous Japanese architect, so people spend \$1,000 per night there. Each villa [has] a dedicated butler. If you stay

I don't think
Tujia has direct,
head-to-head
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Our... customers
are different

there, you can actually get those butlers to cook your breakfast. Some of our properties are in tourist destinations, like one very close to Tai Hu, a famous lake in Suzhou. People go there for vacation, they want to play around, so we offer bicycles. We work with Ctrip [so we can offer] car rental if people need it. It really depends on the location, actual properties—our packages are different.

Q. So in a sense now, you are a service business with a lot of these human-centric services like butlers or cleaners. That makes you similar to a hotel that has house-keeping, restaurants, chefs, etc. The difference is that you don't completely control the entire chain: it's more like you have autonomous units in your model. It just takes one person who's not so good at his job to break trust or bring quality down.

A. We do a few things. One, we are very careful in selecting properties. A lot of times people complain because the properties themselves are not good. So we have very detailed criteria—what kind of properties are allowed to be listed on the website. We [do] personal inspections, and also watch customer feedback very closely—we have a 24/7 call center for complaint. We make a lot of effort to collect feedback from our customers [especially] for each of the not-so-good reviews. Not-so-good

means out of five if the overall satisfaction is three or less or if the person said, “I’m not going to recommend this to my friends” or “I’m not coming back again”. We follow up sometimes with travelers, but definitely each time with the property manager to make sure what is actually going on and if they’ve got a follow up plan. Sometimes we delist those property managers, or rank them down on our list and say, “If you can correct these things, then we will [improve] your rank.”

Q. Do you even get involved in training?

A. Yes we do. Some of the properties we manage ourselves, so then we have full control over that. And we actually developed our own SOP (standard operating procedure) [on] the process, [serving] customers better. [For] third-party property managers we have a salon on training. Sometimes if [we have] our own property in the area, we invite them [there] just [to] learn how we operate [our] business offering. It’s very tedious because this is a service industry. You have to do it. We get very nervous at every complaint.

Q. Which countries are you targeting in your global expansion? Also, in China you have a lot of control over quality: you have teams in place, you have even outsourced some work to third-party service providers. How are you managing all this in your overseas expansion?

A. For overseas, the most popular destinations for Chinese folks actually are Asia, particularly Southeast Asia like Thailand and Indonesia, and then Taiwan, Hong Kong, Korea and Japan. So we [are focusing on] those popular destinations first. Secondly, we actually have been very careful to select products favored by Chinese travelers. For instance, a lot of them actually are families [traveling] together, so they prefer a bigger property like a villa. A lot of Chinese love to cook, so we pick up properties [that] have a kitchen. Some people go there just for sightseeing so we pick up properties close to tourist places. We look at the kind of properties people want, we also look at the quality of the property and the services they provide.

We work with third parties: for instance, there are some local agents in Thailand. They inspect [and] get properties. We look at all the properties they have, we pick out the ones we want and we work with them to sell to Chinese customers.

Q. In China the tourism boom has encouraged other companies like Maiyi and Xiaozhu to enter this segment. How do you rank vis-à-vis local rivals as well as Airbnb's China operations?

A. I don't think Tujia has direct, head-to-head competitors yet. Our focus and customers are different. [Other] short-term rental sites [lean] more towards low-end properties, while Tujia focuses on the mid to high-end. Airbnb is more focused on the inbound—foreigners in China—whereas Tujia focuses on Chinese outbound travelers.

Q. Recent news articles indicate that you have become a \$1 billion start-up.

A. I'm not allowed to share that information yet.

Q. But hitting a benchmark like that, does it mean something?

A. The number probably shows two things. One, it shows the investor really feels very confident about this market in China, the sharing economy of accommodation in China. Also, it shows great confidence in Tujia. So that's pretty much it.

We actually don't care too much about the valuation. We [are focused] on business growth. If we take care of the business, the rest will take care of itself.

Q. Travel booking site Ctrip is one of your investors. How do you really work with each other apart from the investment?

A. Ctrip is the largest OTA (online travel agency) website in China, so it's well recognized. Ctrip has been giving us a lot of support. If you go to Ctrip.com in [the] Chinese version, under accommodation there is a tab called Tujia. That actually brings traffic to our website.

Q. How does your partnership with HomeAway work?

A. There are two types of things we get

From day one when Tujia was founded, we have been collaborating with the Chinese government very closely

from HomeAway. HomeAway is the largest vacation rental platform worldwide and it has been in business much longer than us, so we actually learn [from their] experiences. Although China is different, [vacation rentals] is the same domain, so we learn things from them. The second is, HomeAway has inventories worldwide, so we can pick up properties from HomeAway listings and list them on Tujia's website.

Q. Does this happen both ways?

A. HomeAway is working on that too [but there is] the language barrier.

Q. One of the challenges that Airbnb ran into in the US was opposition from the hotel industry. Issues like where does this business model lie—it's not a hotel, it's run by individuals who own the houses. There were issues like taxation on income earned from renting properties. How do you find the regulations in China in that respect?

A. First of all, it's similar to the US and Europe—vacation rentals is not a well-regulated area, and China's government [plays] an even bigger role in business in China.

That's why from day one when Tujia was founded, we have been collaborating with the Chinese government very closely. We [have] signed an agreement with over 160 governments in China.

[For example], we actually worked with the government [of Sanya] to create a Sanya vacation rental association. So we help [set] standards [for] vacation rental property managers, we categorize them, we [improve] quality and also pay tax to the government.

The second part is Prime Minister Li Keqiang chaired an executive meeting of the State Council, [and] in the meeting he said China's government should advance with the times and soften restrictions on new Internet Plus businesses, such as the online vacation rentals and car rental sectors. Tujia was the first to introduce the online vacation rental [concept in] China, so that shows the government is becoming more supportive of this new business.

Q. So we've seen Phase One: 2011 to 2015, during which time Tujia has become a \$1 billion company. What is Phase Two?

A. I always feel Tujia is actually an e-commerce [platform], so I always look at this from the supply side and demand side. Supply: there are 50 million vacant homes, so that's a huge number—to just put it into some perspective, both Airbnb and HomeAway got more than a million listings last year, so we have 50 million vacant homes. If even 10% of them can be operatable, it's already more than five times more than that. So the supply side is very promising.

On the demand side, the average [per capita] GDP in China, is about \$6,700, so if you look at the history of other countries, once the average GDP of a country is more than \$5,000, travel or vacation get strong demand. Tujia focuses on the vacation side, so if you look at that with time more people want to travel, there are more and more mature travelers. When they mature, they want to visit for more unique experiences instead of just sightseeing or staying in a traditional hotel. So I would think [there would be] big growth from both the inventory side and demand side, so I am quite optimistic about Tujia's future.

Game On

Sony and Microsoft are finally taking on the Chinese video game market

By Erica Martin



Few forms of entertainment have the same near-universal appeal of video games. There's just something about escaping into a virtual world to rack up points, defeat opponents and take control that's latched onto a generation of young people and is refusing to let go.

Nowhere is this more the case than in China, where a healthy gaming culture centered around PC games, and more recently, mobile games, is thriving. Gaming market research firm Newzoo projects that the Chinese video game market will be worth \$22.2 billion by the end of this year.

Despite a historic decision by China's Ministry of Culture in January 2014 to lift its 14-year ban on video game consoles, foreign console companies Sony and Microsoft have largely failed to turn the attention of China's 517 million gamers toward their products. In July 2015, video game market research firm Niko Partners estimated that fewer than 550,000 of Sony Playstation 4 and Microsoft Xbox One, combined, will be sold in China by the end of the year, a pittance compared to the profits made by both PC and mobile gaming. As a result, both companies are scrambling for new strategies to make headway in this potentially fruitful market.

Press Start

Global video game manufacturers have taken an interest in China since the early days of console gaming. The first console released in China was Nintendo Entertainment System (or Famicom) in the mid-eighties, though they were so expensive that it was much more common for families to purchase localized copies of the console, like 1987's Subar Little Tyrant.

In 2000, the Ministry of Culture banned the sale of all foreign and domestic consoles on the mainland, for fear of corrupting Chinese youth with violent imagery and a general oversaturation of gaming. Video games rose to prominence in other forms, largely through PC gaming, which was accessible due to its affordability and the ubiquity of Chinese internet cafes.

A thriving gray market also developed during this 14-year period, in which Chi-



Sony and Microsoft are heavily promoting their consoles at events such as ChinaJoy

nese consumers would purchase consoles meant for non-mainland markets or buy from neighbors like Taiwan and Macau.

Niko Partners estimates that illegal console sales in China were stable at around 1 million per year before the ban was lifted, with a peak of 1.7 million when PlayStation 3, Nintendo Wii and Xbox 360 were newly released. "There already is a big console hardware and software market in China," says Newzoo CEO Peter Warman. "It is just not controlled by the original manufacturers and IP owners." Newzoo's 2014 Year in Review report estimates that some 100 million Chinese have played a console game at least once.

Level Up

In January of 2014, the Chinese government officially lifted the ban on the sale of foreign game consoles by allowing them to be sold through the Shanghai Free

Trade Zone, and the Ministry of Culture announced this July that the policy will be rolled out nationwide. "It seemed as though it had to happen," says Lisa Hanson, Managing Partner at Niko Partners, about the ban removal, "even if just in the name of the WTO (World Trade Organization) and fair trade."

Microsoft pounced on the opportunity to be the first foreign company to sell their newest console, Xbox One, in China. They partnered with Chinese media company BesTV to comply with the Ministry of Culture's regulations on foreign companies doing business on the mainland, and released the console in September 2014. Around 100,000 consoles, priced between RMB 3,699 (\$602) and RMB 4,299 (\$700), were sold at the launch.

Meanwhile, Sony began working toward the Chinese release of their own latest console, Playstation 4, in partnership with



Shanghai Oriental Pearl Group. Despite the fact that Sony and Microsoft are rivals, their China partners were both subsidiaries of state-owned Shanghai Media Group (SMG). Any pretense of competition dissipated after it was announced in December that these two subsidiaries were to merge, with BesTV acquiring Shanghai Oriental Pearl Group—leading to suggestions that there could be conflicts of interest.

In any case, the Playstation 4 hit the market in March following delays—it had been slated for launch in January—and cost RMB 800 (\$129) less than the cheapest Xbox One model.

In the Game

As was probably inevitable for the first foreign release of a console on the mainland in years, the Microsoft Xbox One release was plagued with problems. The console was prohibitively expensive (with a \$100

price hike from the Xbox One's US release a year earlier), and several promises made by Microsoft to their Chinese consumers, such as having streaming services from their partner BesTV embedded in the console, were not present.

Perhaps the biggest disappointment for consumers and the most significant problem for the companies going forward is the choice of games on the consoles. The Xbox had a lackluster range of 10 launch titles that lacked so-called AAA games, the industry term for critically acclaimed games with ultra-high development budgets, like Grand Theft Auto V, which is banned by the Ministry of Culture but has 10 million illegal downloads on popular Chinese bootleg site Ali213.

This fact was exacerbated by a region lock on the console, which meant that Chinese gamers were unable to play games bought outside the mainland. Although the PlayStation 4 later debuted without a region lock, and Microsoft issued an update to remove theirs, it is still inconvenient for gamers to purchase some sought-after games legally as users are unable to download foreign games.

According to Niko's Hanson, if Sony and Microsoft stand any chance of competing with PC and mobile gaming, as well as making their legal consoles more appealing than gray market consoles, they need to focus on one thing: great games. "There will always be controls on content that is allowed in China," she says. "The games are critical for success, so the market needs more AAA titles from either domestic or foreign developers. The gamers do not mind from whom, just that the great games become available."

This may be in the cards, particularly if Sony and Microsoft work with Chinese developers to create more Chinese AAA games. At a SMG press conference, Chairman Li Ruigang mentioned game development as a high priority for the company. "When BesTV joined forces with Microsoft, we already announced that we would invest in game development," he said. "We also discussed cooperation with various big game developers in China to bring more games to home consoles."

The growth in domestic developers that Hanson mentions could be spurred by the arrival of a homegrown console, which seemed on the horizon anyway. "I think we will see domestic consoles in the market from Alibaba and others," she says, "because there are already dozens of TV-based consoles (running Android or AliYun OS) in the market."

But ultimately, it still comes back to the quality of games. "With no good games to play, I would not want to buy [a console]," says Guo Peijun, a visual designer and owner of an Xbox 360 and Playstation 3.

Another lingering issue is the popularity of mobile games over consoles in China. The market's impressive 37.7% growth from 2013 to 2014, according to a December 2014 report by the China Audio-Video and Digital Publishing Association, was largely due to mobile games, whose revenue shot up 145% in the past year. According to Newzoo's Warman, console games are expected to take between 2% and 3% of this year's market.

Continue?

Despite their lack of headway thus far, the gaming market in China is too big and potentially lucrative for Sony and Microsoft to ignore. "We believe there is an opportunity to sell several million consoles for Microsoft and Sony, as long as they have a smart way to go about the situation," says Warman. "There are enough Chinese consumers that have the budget and love to show off new devices."

A statistic from the China Audio-Video and Digital Publishing Association report may bode surprisingly well for Sony and Microsoft. The number of gamers in China went up only 4.6% from 2013 to 2014, which means while the money spent on gaming skyrocketed, the number of people spending it did not. If the past year's surge in revenue isn't coming from new consumers, but rather longtime gaming fans who are spending even more money as they turn to new devices and games, then perhaps consoles do stand a chance—if they can tempt these established gamers to branch out even further. ■

Reality Check

Matthew Crabbe tells us which books, both old and new, put China into perspective

I have a couple of long-term favorite books. I really like Carl Crow's book from 1937, *400 Million Customers*, which I know is a bit dated but actually still rings true in many senses and is a damn good read. I've also always rated Joe Studwell's book *The China Dream*, which demystifies the fact that China is a tough market and I think, even though that it's over a decade old, it's a good read in terms of presenting a bit of a reality check for people going into China to do business.



More generally, I recently read Niall Ferguson's book *The Ascent of Money*, which is a great history of money and how it affects us, as well as being a description of the effect of the global financial crisis. It puts not just China, but also the world economy into perspective—I think it's always good to have that broader view when you're thinking about China, particularly when you're having to place it in the wider global economy and the issues that there are in that.

In terms of more up-to-date takes on China's place in the world, I really like Geoff Dyer's book *The Contest of the Century* and how it deals with the geo-political shift we've seen this century and how this can be addressed, particularly from a Western perspective, but also from China's perspective—where it's finding its place in the world is quite interesting.

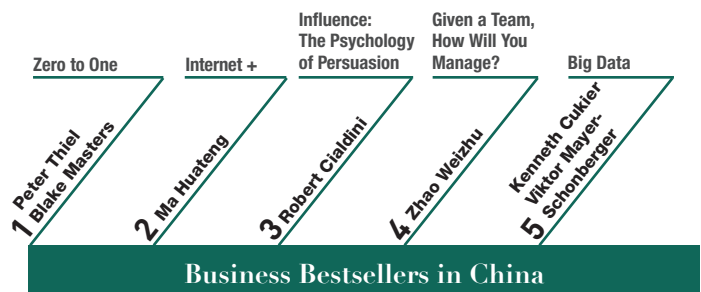
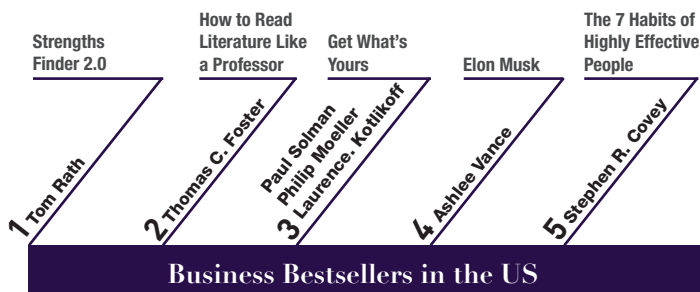
My final non-fiction choice, although it's written as a story, would be *Midnight in Peking* by Paul French, which is set in the 1930s. It's a darn good read, and an interesting read. But in terms of actual fiction, at the moment I'm reading *Soul Mountain* by Gao Xingjian, the Nobel Prize winning author, which I'm really enjoying—it's a very humanist piece of writing.

And then more specifically on consumers, I particularly like Gary Bowerman's *The New Chinese Traveler* where he addresses the impact Chinese travelers are having on the global economy, but also how their increased traveling affects the impact they have as consumers. Another book I would recommend in a similar area is *Consumers and Individuals in China* by Michael Griffiths. He's basically looking at Chinese consumers from an ethnographical point of view and he's got many different experiences—he even spent time washing dishes in a Chinese restaurant. So his perspective is very good—he's got lots of first-hand experience and his scholarly approach to research, to the ethnography of consumers in China, gives it an interesting viewpoint. Again, it's a reality check—where these consumers really are and what their needs and wants and desires are, and how that's based on their cultural setting, which is another thing I think many foreign companies tend not to pay enough attention to.

Overall, it's hard to say I have a favorite writer in particular—I'm a bit of a dilettante and move from issue to issue. There are some whose work I'm looking forward to, but I tend to jump from genre to genre depending on my mood—I like to balance between literature and history and economics and politics and so on. However, given a gentle shove, I would have to say Thomas Mann, Hermann Hesse and Franz Kafka are among my favourite fictional writers—very "old school", I admit.

On my 'to read' list, there are still a few I haven't got round to. I have a copy of Stephen Hawking's *The Grand Design*, which I have yet to immerse myself in, probably because I know it will require lengthy concentration, time being rather at a premium for me these days.

Matthew Crabbe is Director of Research, Asia-Pacific at Mintel. He is the author of *Myth-Busting China's Numbers*.



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