

Fear the great tech armoury of China

The West is falling behind as Beijing champions and invests in innovation at a dizzying pace

David Rowan



If you're reading this while commuting to the office this dark Monday, be grateful you're not working for a "nine-nine-six" company. "Nine-nine-six", I

learned at the Beijing smartphone maker Xiaomi, signifies a business with minimum staff hours of 9am to 9pm, six days a week.

That palpable determination to win is not simply a wake-up call to the lifestyle startups of Shoreline or Silicon Valley. Combined with a rising tendency among Chinese tech entrepreneurs to abandon copycat pragmatism in favour of bold, creative thinking, it's shifting the axis of innovation eastwards. Just watch locals on WeChat, an app letting a billion people shop, book hospital appointments and reserve flights that makes Facebook Messenger look antiquated. Who needs cash or cards when WeChat processed \$1 trillion in payments last year?

The World Economic Forum's "summer Davos" in Dalian, China, in June made me understand how quickly the relentless work ethic is being paired with creative leadership. I spotted Dai Wei, the 26-year-old co-founder of bike-sharing company Ofo, which has not only disrupted the docking-station business model (just use GPS to find then unlock the nearest bike) but is working with the Dutch designer Daan Roosegaarde

to engineer "smog-eating" tech into millions of bicycles. Moments later I met Bill Liu, an electrical engineer whose Royole Corporation makes the world's thinnest flexible colour screens and whose 700 patents cover 0.01mm shatterproof folding screens and phones that roll into bracelets.

To see the future, visit the startups of Shenzhen and Shanghai. Why? First, the market size leads founders to think big from the start. Take Sheng Wu, of the gaming company Hero Entertainment, who realised that fans didn't just want to play, they wanted to watch other people play. He set up an esports division and the company soared to a billion-dollar valuation. Then he innovated: why not build stadiums where fans could support local esports stars? "We're building the first two in Beijing and Shanghai," he explained, "and when we have ten, we'll create

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competitions between cities."

Second, the companies iterate as market conditions shift. Take Wanxiang, the dominant car parts manufacturer. Unwilling to relax in these days of commodification, it is building a \$22 billion "smart city" in Hangzhou, using technology to track autonomous cars and learn from the data. Third, the government plays its own role. In Shanghai I visited Yitu Technology, where face-recognition algorithms determine access to its offices. It has built a database of

1.8 billion faces and is working with China's customs and immigration authority and police. But it's also making the traffic flow faster: cameras track individual cars to determine when to switch red lights to green. In Hangzhou, traffic went from 14.2mph to 15.7mph.

President Xi knows innovation will bring vast strategic and military advantage in this era of artificial intelligence, quantum computing and biotechnology. During the 19th party congress last October, he placed innovation at the heart of his national strategy, calling for China to become a "science and technology superpower". Last week Premier Li Keqiang promised ambitious national research labs, science and technology innovation programmes, state financing guarantees, and more tax-friendly private investment.

While Brexit makes universities' access to talent uncertain, Beijing is backing 17 "mega-projects" seen as central to economic and military growth, including quantum satellites and hypersonic gliders. China's R&D spending grew last year by 14 per cent, to 1.76 trillion yuan (\$200 billion), its science minister has said. The country's ambitions in AI alone ought to worry Western policymakers. Last summer the state council set out a vision for China to become "the world's primary AI innovation centre" by 2030.

Why should we believe the hype? Because a centralised strategy can indeed deliver moonshots: state subsidies, fast-rising government R&D funding, flexible regulations and weak privacy rights favour local startups over the West's. Because

entrepreneurs are building dominant businesses, such as the consumer drone maker DJI. Because companies linked to the government, such as Alibaba and Tencent, are investing in Western tech companies, from Snap to Supercell. And because Beijing can play dirty: the US cybersecurity firm Mandiant claimed that a team linked to the People's Liberation Army conducted economic espionage against 141 foreign businesses over seven years. The Chinese government rejected this.

"To deny the emergence of a new breed of entrepreneurs is short-sighted," says Duncan Clark, a Beijing-based adviser-investor and author of a book on Alibaba. "China today is a living laboratory for some of the most important technological developments of our time."

If the West is to have a hope, it must prioritise research, education, training, regulatory flexibility, and co-ordinated policies that will attract international talent and investment. Otherwise there will be military, security and economic costs. The US is already stepping in to block Chinese-backed takeovers such as that of Lattice Semiconductor, a microchip company, the prospective acquirer of which has links to a Chinese state-owned asset manager. Two years ago when editing *Wired* magazine I wrote a mischievous cover line declaring: "It's time to copy China." Today I'd upgrade that it's time to fear China.

David Rowan was founding editor of *Wired* UK

Clare Foges is away