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China's New Innovation Advantage

China is achieving a new level of global competitiveness, thanks to its hyper-adaptive population.

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Summary.

Long considered a global copycat, China is now home to many of the fastest start-ups to reach a \$1 billion valuation globally. Whatever has propelled Chinese companies to the top, the metrics we use to evaluate innovation have missed it. The author argues that China today has a resource that no other country has: hundreds of millions of people who have lived through unprecedented amounts of change—and who, consequently, can adopt and adapt to innovations at a speed and scale unmatched anywhere else on earth. Those hyper-adaptive and hyper-adoptive consumers are what make China so globally competitive today. But competition with the Chinese should not be considered a zero-sum game. Foreign companies would do well to seek to learn from China's newly powerful example.

The future of the Chinese economy lies in innovation, and everyone in China knows it. But that hasn't always been true. Innovation didn't drive the manufacturing miracle that has unfolded in China over the past half century, during which some 700 million people have been raised—or lifted themselves—out of desperate poverty. Instead the driver has in large part been what might be called brute-force imitation. Relying on a seemingly limitless supply of cheap labor, provided by the hundreds of millions of ambitious workers born during the postwar baby boom, China devoted itself prodigiously to the production of other countries' innovations. The effort enabled a country that missed the Industrial Revolution to absorb the world's most modern manufacturing advances in just a decade or two. Fittingly, China earned a reputation as a global copycat.

Now times are changing. China's Baby Boomers are being replaced by its Millennials, born under the country's one-child policy, which was officially launched in 1979 and designed to get birth rates below replacement level. It worked—but it also created a new demographic reality: China today doesn't have enough people in its rising Millennial and Gen Z workforce to replenish the ranks of its disappearing Baby Boomers. According to its National Bureau of Statistics, China will have 81 million fewer working-age people in 2030 than in 2015; after 2030 that population is projected to decline by an average of 7.6 million annually. This has profound implications. With its pool of younger workers shrinking, China can no longer rely on imitation if it hopes to grow and support its aging population. It will have to rely on innovation instead.

But can China innovate? Can it compete at a global level with developed nations that have built their economies on innovation for decades? Many observers are doubtful. In recent years, they note, the West has steadily produced an abundance of innovations and innovators, while China has produced relatively few. In March 2014 this magazine published "Why China Can't Innovate," by Regina M. Abrami, William C. Kirby, and F.

Warren McFarlan, an article that captured the conventional wisdom. The authors' arguments were sound and well supported at the time. But just two years later eight of the 10 companies that had reached a \$1 billion valuation in the shortest time ever were Chinese—and six of those eight were founded the year that article was published.

Those are startling numbers for a country that in 2020 ranked only 14th on the Global Innovation Index. Something clearly propelled those Chinese companies to the top, but the metrics we use to evaluate innovation have missed it. We tend to focus on people and companies that generate big new ideas—charismatic heroes with dash, daring, and dynamic thinking. By that measure the U.S. innovation ecosystem stands apart. But in the past five years, as an “innovation cold war” has taken shape between world powers, China has achieved a kind of parity with the United States—and the driving force behind its success may not be its innovators at all.

To understand what's powering the global rise of Chinese companies, we need to recognize that China now has at its disposal a resource that no other country has: a vast population that has lived through unprecedented amounts of change and, consequently, has developed an astonishing propensity for adopting and adapting to innovations, at a speed and scale that is unmatched elsewhere on earth.

It's *that* aspect of China's innovation ecosystem—its hundreds of millions of hyper-adoptive and hyper-adaptive consumers—that makes China so globally competitive today. In the end, innovations must be judged by people's willingness to use them. And on that front China has no peer.

The Story of Old Yang and the Growth of Mobile Payment

Old Yang is a beggar who lives in Beijing. He can usually be found just outside the Gu Lou Street subway stop in one of the city's tourist districts, where for years he survived on loose change and spare bills from commuters. But life changed dramatically for him in 2015, when everyone in Beijing abruptly stopped carrying cash. Seemingly overnight, the entire Chinese population began to download apps such as WeChat Pay and Alipay and integrate mobile payment into their daily lives.

For Old Yang, this tech disruption could have spelled disaster: His livelihood relied on cash. But faced with a crisis, he adapted. First he scraped together enough money to buy a cheap Xiaomi smartphone. Next he printed a sign that displayed the QR codes for his WeChat Pay and Alipay accounts. Then he returned to his spot outside the Gu Lou Street station, where, with the sign strung around his neck, he connected his phone to the subway Wi-Fi—and waited.

Old Yang didn't simply survive in China's new cashless world. He thrived. Today, when people want to give him something, they no longer reach into their pockets for spare change. Instead they open the mobile-payment app on their phones, scan a code on Old Yang's sign, and transfer a few yuan to him. The average donation he receives has grown from one or two RMB to three to five RMB—an almost 300% increase. Digital upgrading works.

No payment is too small or too big for Chinese mobile-payment apps, and no business is too informal. In 2015 in Chengdu, I used my phone to pay for a new laptop from a global brand. Then I went outside the store and used my phone to buy a breakfast sandwich from a woman who cooked it on an upside-down metal trash can suspended over hot coals on the side of the road.

Old Yang, the computer-store owner, and the breakfast-sandwich vendor are not innovators. They don't have much "value" in the systems we use to rank global economies on innovation. But what happens when rapid adoption and adaptation become normal for more than 900 million internet users in every social stratum? You get an economic force that can change the terms of global competition.

The story of mobile payment is especially instructive, because the technology that enables it emerged in the United States and China at almost exactly the same time. Thus their comparative innovativeness or timing—who copied whom?—becomes almost a nonfactor. In 2014 Apple Pay was launched in the U.S., followed a year later by Samsung Pay and Android Pay, and Alipay and WeChat Pay were launched in China.

In timing and tech the innovations were all but equal, but their adoption rates have differed dramatically. In early 2019 Apple announced with much fanfare that 383 million phones around the world had activated Apple Pay—but at that point only 24% of U.S. iPhone owners had ever actually used the technology. And not until that year did Apple Pay surpass the Starbucks mobile app—used only in Starbucks stores—as the most-used mobile-payment app in the United States.

Things have unfolded very differently in China, where WeChat Pay has won 84% market penetration among smartphone users. (The app is available to users of Tencent's super-app WeChat, which has 1.2 billion monthly active users.) That kind of penetration explains why in 2018 WeChat Pay did 1.2 billion transactions a day, whereas Apple Pay did one billion *a month*. And it's why in 2019 the total gross expenditure in China via mobile app (347 trillion yuan, or roughly \$54 trillion) was *551 times greater* than the total expenditure in the United States (\$98 billion).

So in the case of mobile payment, which country or company was more innovative? And did it matter?

Young China

Undeniably, the regulatory environment has helped mobile payment take off there. Though this article focuses on the underexamined *will* of Chinese citizens to try and to trust new technology, the specific *way* China widely adopted mobile payment was paved by two groups: Chinese innovators, who are increasingly at parity with their Silicon Valley counterparts, and the government. In this case Chinese regulators did the unprecedented by granting banking licenses to two nongovernmental tech giants, Alibaba and Tencent, at the expense of state-owned lenders. Without that support the mobile-payment rocket wouldn't have left the ground.

But what has made China's adoption of mobile payment so successful—and globally unique—is its people. Even here the government has played a significant role, because it

has conditioned its citizens to expect less data privacy than Americans do—and indeed, has granted them fewer rights. But there's more to the story than that. To understand why the Chinese public is so fiercely adoptive, let's think about Young China, by which I mean two things: first, the 700 million Chinese who are under the age of 40; and second, a new national identity, which in the past decade has emerged as distinct from the manufacturing identity of the late 1990s and the 2000s.

Lived experience has shaped China's unique attitude toward adoption in recent years, and that experience has been unlike any other country's. To understand just how different it is, consider what I call the Lived Change Index, which uses lifetime per capita GDP to track how much economic change people have lived through. As the exhibit "The Lived Change Index" illustrates, to have lived in China since 1990, broadly speaking, is to have lived in a country that is moving faster and changing more quickly than any other place on earth.

When we talk about the speed of change in China today, we tend to focus on its rapidly changing physical landscape—and the differences there *are* dramatic. But in doing so we neglect changes in the mental landscape of China's people. Looking at the exhibit, or at side-by-side pictures of Shanghai in 1989 and today, you might ask yourself how living through that sort of change would shape your expectations for progress and your sense of what government, technology, and commerce can do.

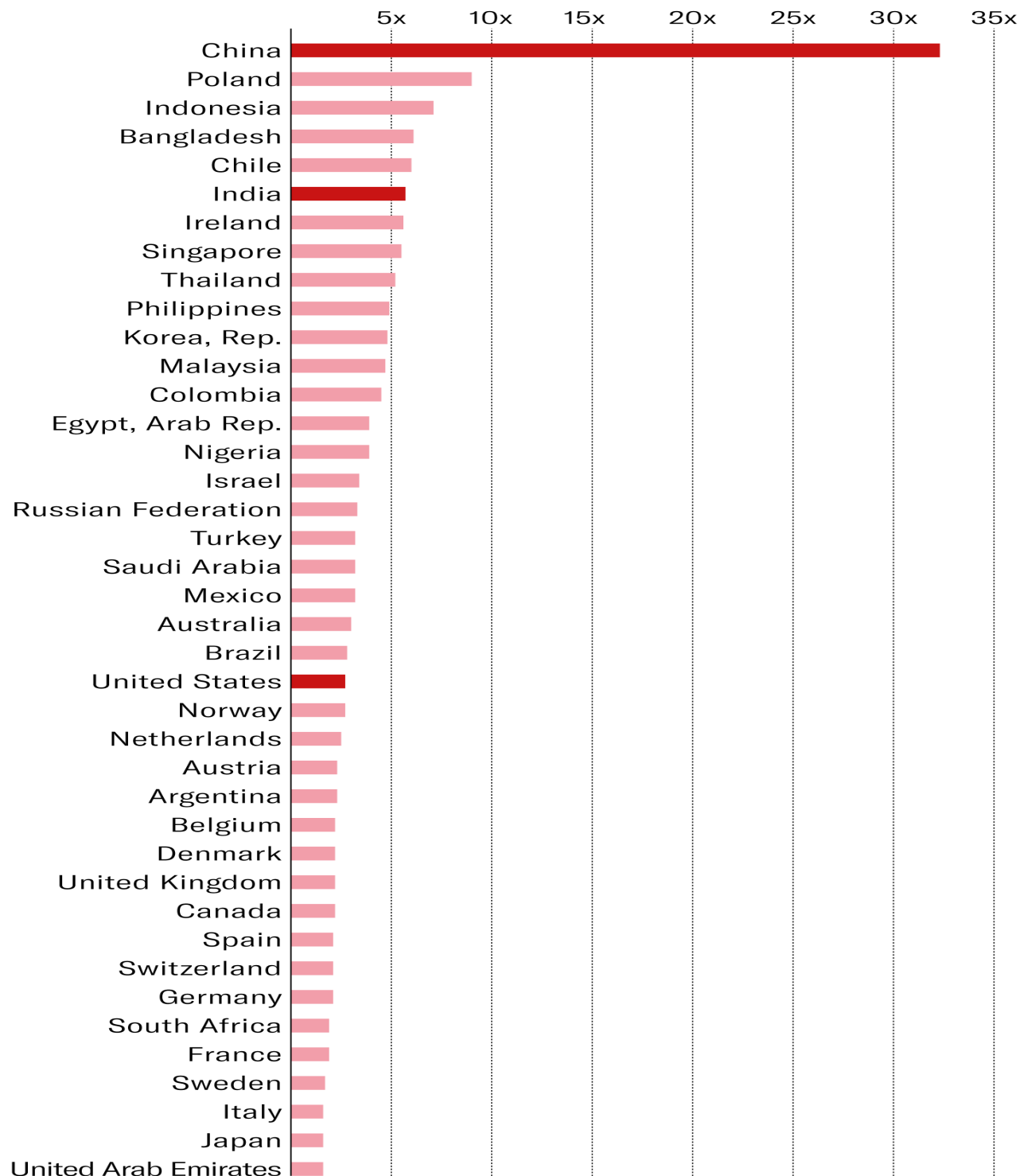
American Millennials have lived through dramatic, life-altering changes since 1990, the year I was born. First came the internet. Then cell phones. Then smartphones, social media, dating apps, mobile banking, electric cars, big data, CRISPR, and so much more. Since 1990 Americans have seen U.S. per capita GDP grow by roughly 2.7 times, which sounds impressive until you realize that somebody born in China in 1990 has seen per capita GDP grow by 32 times—a whole order of magnitude greater. In 1990 China's GDP represented less than 2% of the global total. By 2019 its share had jumped to nearly 19%.

Consider some of the specifics. In just three years, from 2011 to 2013, China poured more concrete than the United States had poured in the entire 20th century. In 1990 China's rural population had one refrigerator per 100 households; today that number is 96 per 100. (Food preservation is a common benchmark for development.) In 1990 China had only 5.5 million cars on the road; today it has 270 million, of which 3.4 million are electric, representing 47% of the global electric fleet. In 1990 three-quarters of the country's population was rural; today nearly two-thirds is urban, an increase of more than half a billion people.

The Lived Change Index

The index uses lifetime per capita GDP to track how much economic change a population has experienced. Over the past three decades China has changed more quickly than any other place on earth.

Per capita GDP growth in the top 40 global economies, 1990–2019



India's Counterexample

Perhaps it's not fair to compare the United States and China. Most observers write off China's high rates of mobile-payment adoption as the result of "leapfrogging"—that is, modernizing so recently and so quickly that the country has been able to skip some of the cumbersome stages of technological development that the United States had to live through. Think of what Google calls the "next billion users" market, where internet users are leapfrogging expensive desktops or laptops and getting online for the first time using cheap smartphones. India, China's "other" in Asia, is part of that market. So let's compare it for a moment with China.

The two countries are ripe for comparison. They were founded as modern polities at nearly the same time—India in 1947, and the People's Republic of China in 1949. As recently as 1992 both had a per capita GDP of about \$350. Both have an exceptionally large population. India's is younger than China's, suggesting a greater openness to new technologies. The two countries put a similar emphasis on education and STEM.

Study the data a bit more closely, however, and big differences emerge. Just half of India's population uses the internet, and many Indians resist the idea of scanning QR codes to pay for things. As a result, only about 100 million people in India use mobile-payment apps, compared with some 850 million in China—even though Google, through its Next Billion Users initiative, has invested hugely, along with other organizations, to improve India's infrastructure and access. That's an extraordinary differential, and it can't be explained away by leapfrogging. In both countries mobile payment and QR codes are demonstrably faster, easier, safer, and cheaper than cash. Yet the incredible adoption disparity persists.

What explains it? You can find the answer on the Lived Change Index. During the past three decades per capita GDP in India has grown in a roughly linear fashion, from just over \$350 to more than \$2,000—whereas in China it has grown almost exponentially, from just under \$350 to more than \$10,000. That disparity helps explain why many Chinese will scan a QR code but many Indians will not. The point here is not that any one culture is better at innovation but, rather, that certain developmental ecosystems create naturally different attitudes toward change, adoption, and newness. More than any other population in the world, the Chinese in recent years have had to adapt to radical change—and they have learned that innovative technologies can be key to their survival.

Closing the Innovation Gap

To compete successfully with China in the decades ahead, countries and companies will need to start strategically prioritizing not just innovation input, in the form of heroically imagined new tools and technologies, but also innovation output that becomes transformational through rapid adoption on a very large scale. In the short term, China has a clear advantage in terms of output, thanks to its huge population of hyper-adopters and hyper-adapters, and as a result it is poised to take the lead in the innovation arms race. But if business leaders outside China take the following steps, they can begin to close the gap.

Pay attention.

As the science-fiction writer William Gibson once wrote, “The future is already here—it’s just not evenly distributed.” That’s an insight worth applying to China, which in some cases is years ahead of global markets and so provides an excellent way of peering into the future, particularly when it comes to digital and retail trends.

Consider Visa, Mastercard, and other key global players in noncash payments, which to date have resisted encouraging mobile payment, ostensibly unwilling to fully disrupt their credit card empires. If China is any guide, those companies could be headed for a “Kodak moment,” as when Kodak, in response to the emergence of the digital camera, read the future wrong and made the disastrous decision to define itself as a film rather than a photo company. What’s in store globally is probably a lot like what we already see in China, where people trust platforms like AliPay and WeChat Pay for all things financial, from purchases to loans to investments. But the big credit card companies still have an opportunity to pioneer and encourage mobile payment globally rather than ceding the market to tech giants, as the banks in China have largely done.

Similarly, the online and offline retail ecosystems in China are merging in ways that are years ahead of what’s happening in the United States. In Chinese grocery and convenience stores, it is now commonplace to see rows of QR codes below meat and produce. Scanning a QR code with a smartphone will reveal the product’s entire story, from, say, where a cut of salmon was sourced to how far it was shipped. Similarly, scanning a tech product in a store can bring up the brand video and user ratings. This is what Alibaba calls New Retail, and it could well become the global norm, because it allows brands to deepen their relationships with customers directly. Nearly all multinationals operating in China have adopted this sort of digital-first, China-forward strategy. (U.S. companies operating there have rolled out far more advanced versions of this strategy than the ones they currently use at home.)

The lesson here is that Chinese consumers have come to expect such a rich online brand experience. Failing to provide it, or being seen as having fallen behind, will doom a company in the market. The Chinese can show companies looking to gain competitive advantage in U.S. markets how to develop better touch points with consumers.

Up your imitation game.

If you’re used to believing in your own exceptionalism, leaning into imitation as a strategy can feel like a declaration of defeat. But innovation has always been about both invention *and* imitation. We don’t think less of Apple because Steve Jobs got the idea for the mouse from Xerox. Genius steals, and it always has. To compete with China, imitation must be a weapon in the arsenal of global companies—one they’re willing to use.

Some of the smartest non-Chinese companies already understand this and are looking to Chinese rivals for ideas. That’s what Facebook did in 2019 when it added an integrated payment option to its chat function, five years after WeChat had introduced a similar option on a mass scale, in a pioneering example of how to productively fuse the worlds of social and commercial technology. It’s what Amazon did when it modeled its Prime Day (a wildly successful annual event during which Prime members receive all sorts of sale offers and discounts) on Alibaba’s Singles Day. Instagram got the idea for its Reels feature from TikTok. The list goes on and on.

Companies looking to China for ideas should consider these courses of action:

Lead from your China team. We've all been told to localize *for* China. Take that a step further and, at least in part, lead *from* China. Few companies empower their China teams to help create global strategy. That's a missed opportunity. What is second nature to your China team may be revelatory to your other teams. What you learn about local strategy in China may well help transform your global strategy.

Expose your best. Send your best and brightest to China. Expose them to new ideas there. Expand their sense of what's possible. I have spoken with delegations representing a range of companies, from German auto manufacturers to U.S. retailers, who told me that part of their mission in visiting China was to learn from the digital ecosystem there and take those lessons back home.

Stay informed at China speed. As the saying goes, "If you haven't been to China in the past six months, you haven't been to today's China." Stay informed constantly and consciously. Quarterly updates from trendspotters and on-the-ground resources are a good start. For global executives, video updates illustrating trends and experiences can be a close second to travel.

Measure and use adaptiveness.

Global companies should develop criteria for measuring the adaptiveness of specific populations. Deeper behavioral testing of attitudes toward newness, change, and adaptation across countries and age cohorts would be a strong start, as would a closer focus on populations that, like China's, have been forced to adapt on a grand scale to keep up with the times. The Lived Change Index is a decent way to extrapolate adaptiveness, though it is only a blunt instrument.

Such metrics could help companies guide product launches by aiming them at populations that are friendlier to change and more willing to seize on new technologies. Some countries, cultures, and cohorts are naturally more adoptive—and, thus, adaptive—than others. Launching and iterating products in change-friendly countries would help companies incubate products until they're ready for broader release. It would also help them determine which product lines might or might not be suited for less-adoptive environments.

Optimize your comparative strengths.

The speed of adoption isn't everything. Global trust also matters, and much of the world simply does not trust "brand China." Recent Pew data show that opinions of China have never been worse and that most people outside the country don't think of Chinese companies as distinct, in terms of policies and practices, from the Chinese government. The story of Huawei makes this clear. Despite producing globally competitive products and earning premium market share against Apple in China, even before nationalism encouraged further consumer support, Huawei was unable to expand globally as much as it had hoped because of its opaque relationship with the Chinese government.

Learning from Huawei's example, the social media giant TikTok scrubbed itself clean of any association with the Chinese government before entering the U.S. market. By the time the Trump administration sought to ban it in the United States for security reasons, just

three years after it was released, the app had already captured nearly 100 million monthly active users in the U.S. TikTok's problem was perception, not product, and it has managed to overcome that. Today ByteDance, TikTok's parent company, is the highest-valued unicorn in the world, worth three times the second-highest-valued, the Chinese ride-hailing company Didi Chuxing.

The West still wins out when it comes to trust. In a world of equivalent products and pricing, a discomfort with brand China often tips global consumers toward Western brands. The trick for those brands going forward will be to acknowledge that China is a newly powerful innovative force—one from which they will have to learn if they hope to successfully compete.

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As consumers, collaborators, and competitors, the Chinese are destined to play an increasingly significant role in the global marketplace. Competition with China should not be considered a zero-sum game. Nevertheless, it's time to acknowledge that its greatest asset in the innovation arms race may be its uniquely adoptive and adaptive population. If the rest of us can recognize and learn from that, we can make China's new innovation advantage our own.

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