

Alibaba was conceived at a time before China had undergone digital transformation.

On a breezy evening in September 2009, I stood backstage at Hangzhou's leading sports venue, Dragon Stadium, peeking from behind a curtain at 35,000 excited Alibaba employees and their families. It was our 10-year anniversary, but this was most assuredly not a typical stuffy corporate celebration with droning speeches on quarterly performance or halfhearted fist pumping. What the employees got was Jack Ma, in a flowing white wig, lipsynching an Elton John song blaring over the sound system while wooing a dramatically bashful Joe Tsai, who was in high heels and a shimmering short dress. The audience whooped at the spectacle. It was 100% in the Alibaba spirit, with team flags, whistles, and thunder sticks to boot. Alibaba had arrived. China's digital economy had arrived, floating on a magical cloud of 1s and 0s. The road to China's modernization had been, in fact, little short of miraculous, and Alibaba's meteoric rise was a reflection of that success.

In just 10 years, the scrappy business-to-business (B2B) platform, started by an unlikely motley crew in Jack's apartment, had become arguably China's most powerful—and most unconventional—internet firm. We were brash, by design. We cultivated a persona that was decidedly different from other Chinese companies. We thought in terms of giant leaps, not increments. We weren't a monolithic, faceless corporate entity but a highly visible organization with a large personality cast

in the image of our highly creative founder, Jack Ma. By this time, much had changed since that first day I had to step over a mound of smelly shoes just to knock on that Lakeside Gardens apartment door, the humble abode that served as Alibaba's first office location. Gone were the anxious nights I had spent lying awake in my apartment, wondering if I'd made a terrible mistake by turning away from a once promising career, leaving behind my ambitions to become a doctor, a business consultant, or a public servant and joining this untested start-up. Alibaba was no longer untested: in fact, it had been tested many times, teetering on the edge of bankruptcy, and at each turn had proven itself a capable, even essential Chinese tech company. It had been a long road getting to that point.

THE FOURTH INDUSTRIAL REVOLUTION

To put the events of that period into context, it helps to zoom out and identify what was happening on a more macro level both within China but also along the continuum of industrial change. China's digital transformation and the explosive expansion of the innovative digital economy are products of what historians describe as a fourth industrial revolution. In some ways, Alibaba benefited from China having been passed over for several centuries by the rise of the industrial West. Starting in the 1980s, it was playing a frantic game of catch-up, struggling to



build the infrastructure and commercial spirit needed to drive the development of a modern economy. There were limited legacy systems or legacy constituencies standing in the way of the adoption of digital innovations. Historians describe global economic development as having gone through a series of industrial revolutions, each led by technological innovations and new business opportunities. The first shift marked the initial transition from agrarian societies into ones led by industrial production and new infrastructure. Starting in the 18th century, railroads and steam and hydro power ushered in mechanized production and factories.

Electrification led the second revolution. Electric power enabled more rapid and more reliable mechanization in the form of assembly lines and mass production, creating divisions of labor and greater efficiencies. The invention of computers was the catalyst for the third step, automating production and enterprise management. At the end of the 1960s, computers were first linked, paving the way for the creation of networks—the internet. As computing power grew rapidly, economics, corporate life, and even social life were transformed. The digital economy was taking over.

Klaus Schwab, founder of the World Economic Forum, explained the next step in this historic process, the "fourth industrial revolution." He described a new digital revolution built on the pillars of the third, "characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres."

The core building blocks of this revolution—computer hardware, software, and networks—have been around for decades, but they are now spurring the development of innovative applications that are impacting every aspect of how we conduct business, govern, and engage in all sorts of personal and

commercial relationships and even our personal identities. Erik Brynjolfsson and Andrew McAfee, two MIT professors, have christened this "the second machine age," while others have adopted the term Industry 4.0.

For years, Jack Ma has described the changes as data technology, or DT, a progression of the information technology (IT) wave that helped launch this new era of the digital economy. The initial IT methods were proprietary: data was generated and analyzed within closed systems. DT supports a different approach to technology in which access to data is open and its use can be applied to help other collaborators and partners. Through these features, the DT revolution is creating entirely new types of businesses, from everyday commerce to biotechnology, renewables to robotics, gene sequencing to quantum computing.

One important difference between the third and fourth industrial revolutions is the vast scale of adoption and the velocity of innovation. As Schwab observed, the cloth-weaving machine spindle—the first industrial revolution's hallmark invention—needed more than a century to make its way through and then beyond Europe. The internet, the key innovation behind the fourth industrial revolution, wrapped around the world in less than a decade. As networks all over the globe expand, vast streams of data are bringing about unprecedented levels of connectivity and fresh applications.

There is no better example of the fourth industrial revolution—both its progress and its promise—than Alibaba. From that small team in Jack's apartment 20-plus years ago, the company now has more than 200,000 employees and hundreds of billions in market value. Its family of websites and platforms, the Alibaba ecosystem, supports more than 10 million merchants, helped create 54 million jobs, and continues a climb beyond 1 billion active users.



THE CHINA JACK MA FOUND AND CHANGED

Jack Ma was an unusual pioneer in this revolution. He's not a technologist, a coder, an engineer, or even a business school graduate. He runs largely on intuition, and he has an uncanny ability to understand people and their yearnings, a knack for understanding what people need and want. And he has a strong moral compass that points him toward wanting to support societal change and economic inclusiveness. Those may not sound like the best digital credentials, but, as I will explain, his story makes clear why they have made all the difference.

His journey, well documented elsewhere, began with an unexpected adventure during his first visit to the United States in 1994 on business. Because of his facility with English, he had been hired to assist a Chinese state-owned enterprise collect a debt in California from the company's business partner. While in the United States, knowing very few people there, he went to Seattle to visit a friend's family, and by chance the son-in-law of the friend introduced Jack to this new phenomenon, the internet.

It was Jack's very first online experience. He was entranced and was initially afraid to even touch the keyboard, he recalls, fearing he might break it. He was persuaded it was OK and was urged to use the search browser to look something up, so Jack thought for a moment and then typed in "beer" and "China," seeing what Chinese brands would pop up. The search engine responded with nothing, not even the export brand Tsingtao, a telling moment. Rather than being frustrated or disappointed,

Jack said he was inspired. It suggested an opening. He resolved that this tool was exactly what the Chinese economy, then rapidly expanding under a government reform program, needed to accelerate its progress and make its products better known beyond its borders.

He had a sense of the potential of the internet for opening markets for China's burgeoning classes of small and medium-sized enterprises (SMEs). When he returned home, he created his first venture, the China Pages, a mere listing service for Chinese manufacturers to display their specialties for business customers. Styled after the thick Yellow Pages phone book, Jack's venture aimed to be an online directory listing the companies in China interested in expanding their markets, domestically and overseas.

It was a sound idea, prescient, but so few used the internet in China—or even knew what it was—that the venture struggled. In 1995, less than 0.1% of China's population was online. Strapped for cash, Jack eventually signed a joint venture deal with state-backed Hangzhou Tele-com to sustain the business, but he soon found that he had lost control over decision-making. By the fall of 1997, drained by the challenges, he gave up his stake and walked away.

Less than two years later, Jack was ready to try again. He had secured a ministry job in Beijing focused on developing e-commerce but found the layers of bureaucracy stifling, so he again took a look at establishing his own company. Convinced that private enterprise would lead China's e-commerce

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revolution, he quit his government position and created a new company that helped small businesses connect with the world.

In February 1999, he assembled 17 close friends and former colleagues and students inside his Lakeside Gardens apartment in Hangzhou and launched Alibaba.com. Jack was never one to set modest goals. "Our competitors are not in China," Jack said at the company's first all-staff meeting. "[They are] in America's Silicon Valley."

China then was still a primarily agricultural society with the majority of people living in the countryside, working on the land. In 1999, the average per capita income was about \$800, and there were only 8.8 million internet users in the entire country. I remember my first night in Hangzhou, riding a taxi to my company apartment. The city had at one time been known for its scenery but the years had taken a toll. That first winter in Hangzhou tested my spirits and endurance. The numbing cold easily overpowered the scattered space heaters in our office, and many of us wore gloves at our desks even as we typed. Beyond the physical discomforts, we confronted the reality that the world Jack imagined was a far cry from the one that we had to work with in the China of 1999. There was no retail e-commerce, no online payments system, and no private logistics services to speak of. But it wasn't only the internet infrastructure that was primitive, many aspects of the commercial infrastructure were also underdeveloped. Even shopping malls and credit cards, basic building blocks of commerce in the United States, hardly existed. In the 20 years after the first Chinese credit card was introduced, only 33 million cards had been issued—a fraction of 1% of the population. This paled in comparison to the United States around the same time, where more than half of Americans were credit card holders.

Living in Hangzhou, I found that very few vendors would accept my international credit card, and I was never able to locate a working ATM. The closest internationally linked ATM was in Shanghai, a three-hour train ride away. When it came to consumer goods, even the most commonplace items in America were nearly impossible to find. After wearing through my sneakers, I had to check four different stores just to locate a pair of decent Nikes. Tracking down some Quaker Oats oatmeal, a necessity for any good Californian on the road, proved even harder.

I sometimes had to remind myself that I was working at a technology company. The flashy new breakthroughs from Silicon Valley, the excitement and exuberance of that era, seemed to occupy a different universe from the one I inhabited. At the time, the indisputable darlings of the Chinese internet sector were the country's homegrown search portals—Sina, Sohu, and NetEase—all of them located in China's first-tier cities like Beijing or Shanghai.

Alibaba was different from conception. Instead of repurposing a Western model for the Chinese market, its goal was to create a new type of online wholesale marketplace from scratch, aimed at letting Chinese SMEs connect with one another and with new customers. This business required an understanding of how to engage and assist a class of older, more traditional business owners, an entirely different demographic from young, urban netizens. Jack intuitively understood the constraints on smaller enterprises but also China's economic potential and the unique ability of the internet to overcome the barriers.

"It wouldn't matter even if I fail," he once said. "At least I've introduced the concept to others. If I don't make it, someone else will."

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