Will China Out-Innovate the World

Updated 25 April 2018

China has recognized the need to put its giant economy on a path toward developing an innovation culture, an initiative that could position it to challenge the U.S. as a global leader of innovation. But despite a massive investment in research and development, the nation faces some significant barriers to reaching its goal.

In a recent survey, The Conference Board and *InnovationOne* found that business leaders who are "high innovators" make innovation a strategic imperative. Their companies foster a culture of innovation, while making measurement of innovation capabilities and capacities an integral part of their approach.

There are early signs that China is indeed moving in this direction. According to The Conference Board's 2018 C-Suite Challenge survey, Chinese CEOs believe they have measurement systems in place to strategically manage their innovation. In fact, our research finds that compared to the U.S., twice as many CEOs in China say they have an actual process in place for measuring innovation.

While China is poised to become an innovation challenger, will it out-innovate its global competitors? The answer is a qualified *yes*. On its current path, China could develop transformative innovations on a global scale; it is already getting good at developing short-term, consumer-focused innovations.

Last year, China spent $279 billion on research and development — a vast sum — and will surpass U.S. spending by 2020. That figure suggests significant investment in science and technology. But a recent report by economist Carol Corrado, a global expert on innovation and intangibles, found that in other countries, R&D spending is only one small part of a much larger innovation investment picture that has made companies, such as 3M or Lego, successful.

On the digital transformation front, we have already seen examples of advances in China

in the internet of things, cloud computing, and quantum computing. For example, China became the world's biggest machine-to-machine market in 2014, suggesting rapid expansion in the Internet of Things. Cloud computing played an impressive role in the $25.3 billion Singles' Day sales on the e-commerce website, Alibaba, processing 1.48 billion transactions in a single day. While such advances are relatively easy due to China's vast market which allows for rapid scaling and high volumes, the country's scientists are also already competing head to head with U.S. universities in the cutting-edge field of quantum computing.

But today's knowledge economy requires investments beyond science, technology and digitization. Customer experience, branding, internal networks and other intangible investments, including social sustainability, are important drivers of innovation. Once intangible investments like these are accounted for, R&D spending in the U.S. actually only constitutes one-fifth of total innovation spending. Surpassing that sum will be a tall order for China, but China has long been focused on assembling an innovation engine to power its giant economy as it transitions from manufacturing-driven growth, to consumer/services dominated growth.

Perhaps even more important, Chinese firms have the advantage of a vast domestic market. The unique Chinese focus on short-term innovation yields advantages in domestic markets, not to mention other emerging economies, where consumers welcome "good enough" products with relatively low prices.

For example, Zhongxing, a telecommunications firm, developed a direct digital radiography (X-ray) machine that carries out only the most routine functions, compared with multifunctional machines produced by Western companies which are ten times the price. Because of its low price, Zhongxing quickly reached half the Chinese market, forcing Western firms to cut prices or exit the market. Because Chinese companies have the advantage of low-cost business models and "good enough" technology, they can easily gain market share from Western competitors.

There is some irony that this kind of innovation does not necessarily result in the latest cutting-edge technology or product. A narrow definition of innovation might not consider "cheap and good enough" products that are aimed at middle-class consumers in emerging markets as very innovative. However, developing low-cost solutions to meet customer needs and creating new markets is at the heart of Chinese innovation. In fact, designers there are often able to come impressively close to top-of-the-line models, yet produce and sell at a fraction of the cost. For example, some Chinese smartphones are one-fourth the cost of iPhones, but perform 75 percent as well. That requires innovative thinking and innovative business models. However, it remains to be seen if such short-term innovations can thrive beyond emerging markets in the open, less regulated, often unprotected global markets.

Despite great advances in innovation, China still faces significant barriers. For example, the Chinese government takes an active role in driving innovation by guiding and funding

innovation efforts. This creates unique challenges and opportunities for innovation, but runs counter to practices in the U.S., where innovation is led by the private sector. Government-driven outcomes are not necessarily superior, as evidenced by the reluctance of Chinese universities to pay patent maintenance fees, allowing many patents to expire. In fact, some universities allow up to 20 percent of their patents to expire just to save on fees.

Insufficient intellectual property (IP) protection creates additional challenges for innovators. Regulatory and enforcement frameworks for intellectual property are generally lagging in China, as in many other emerging economies. This creates disincentives for companies to invest in innovation. For example, IP protection problems are known to have held back innovations in China's laser industry.

China has a long way to go to catch up to the U.S. on innovation spending and innovation culture. But in contrast to the United States, innovation in China is almost universally a strategic imperative. That should put the rest of the world on notice.

This blog was originally featured on Techonomy.

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