

A DIGITAL UPGRADE FOR CHINESE MANUFACTURING

Executives are enthusiastic about Industry 4.0 but less prepared than their international counterparts to make it happen. A clear road map is needed.

by Forest Hou, Arthur Wang, and Ting Wu

China accounts for about 25 percent of the world's manufacturing activity, more than any other country on earth. Yet the advantages gained through lower costs of labor and capital, as well as efficiency-driven innovations, are slowly eroding. China's manufacturing productivity remains only a fifth of that of developed economies.

Companies and policy makers are therefore looking to upgrade China's digital manufacturing capabilities by embracing Industry 4.0, the shorthand widely used for automation and data exchange in manufacturing technologies (including cyberphysical systems, the Internet of Things, and cloud computing). The goal is for manufacturers to use real-time data to link product designers, "smart" factories, and distribution centers across the value chain.¹

In June 2016, we surveyed 130 companies across sectors to gauge China's readiness. As the exhibit shows, Chinese manufacturers, particularly private companies, are more optimistic than their counterparts in Germany, Japan, and the United States on the potential of Industry 4.0 to transform industry. However, that is tempered by the lack of a solid game plan. Chinese manufacturers say they are

less prepared than their counterparts to push ahead with Industry 4.0 initiatives. Notably, only 44 percent of state-owned enterprises report they are prepared.

In interviews with executives, we drilled more deeply into the challenges. While Industry 4.0 has become a management buzzword across manufacturing, organizational capabilities, talent, and mind-sets are all lagging in many companies. Only 9 percent of companies have assigned responsibilities for Industry 4.0 initiatives versus more than a third in the United States and Germany. An even smaller number of Chinese companies, 6 percent, have a clear road map of the way ahead versus a fifth or more in the developed-economy cohort. Few companies have made digitization a priority or raised the awareness and skills of frontline managers. We also found that digital manufacturing tools along the value chain remain inadequate. Chinese auto companies, for example, lack the digital grounding to analyze, manage, and use data collected from production lines. Such data are crucial to the product development and R&D efforts required to raise quality and create globally competitive cars.

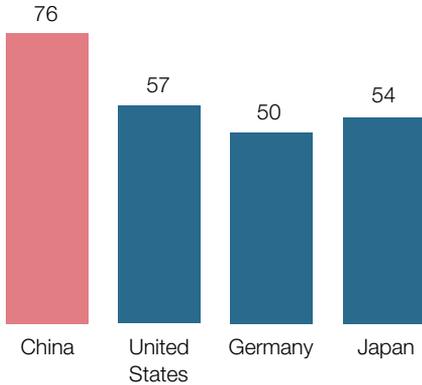
Our research suggests that to fully capture the benefits of Industry 4.0, Chinese

Exhibit

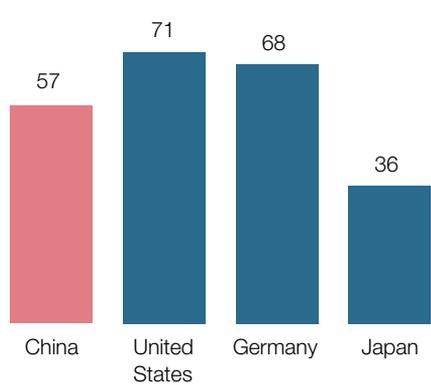
Chinese manufacturers are optimistic about Industry 4.0 but feel unprepared to push ahead with it.

% of respondents¹ who believe . . .

... their company's competitiveness will increase with Industry 4.0²



... their company is prepared for Industry 4.0²



¹ For China, n = 130; for Germany, Japan, and United States, n = 100.

² Industry 4.0 refers to automation and data exchange in manufacturing technologies.

players will need a tailored approach to digital transformation. They should avoid a one-size-fits-all strategy and instead focus on three fundamentals: building a foundation of lean manufacturing, developing a solid management infrastructure, and developing new mind-sets and capabilities, especially in data and advanced analytics. 

¹ A national manufacturing strategy, Made in China 2025, seeks to advance these goals.

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