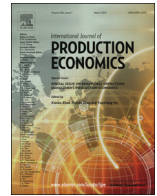




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journal homepage: www.elsevier.com/locate/ijpeThe path to Made-in-China: How this was done and future prospects[☆]Ling Li^{*}

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ABSTRACT

Over the past decade, there has been increasing interest in manufacturing practices in China. By the end of 2012, China was the world's leader in manufacturing operations and the second largest economic power on the globe. This paper offers three essential insights. First, the study provides a taxonomy of China's economic development in the past thirty years. Second, the study has identified the most important and relevant attributes that contribute to the rise of a manufacturing powerhouse. Finally, the study offers a few guidelines for the practicing managers and policy makers who are interested in formulating strategies to face the challenges of dynamic global competition. The study also discussed three important phases that constitute the path to Made-in-China. Phase One, Incubation Years, focused on economic reforms and the structural shifting from a planned economy to an economy of socialism with Chinese characteristics. In the second phase, Navigation Years, China developed a modern manufacturing infrastructure. In the third phase, Dynamic Years, China adopted a proactive manufacturing strategy which emphasized soft power development. Based on the synergistic analysis provided in this study, manufacturing managers and policy makers will be able to expand their perspective on the restructuring of global manufacturing supply chains.

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1. Introduction

Over the past decade, there has been increasing interest in manufacturing practices in China. By the end of 2012, China was the world's number one leader in manufacturing operations and the second largest economic power on the globe. China is among the most significant manufacturing miracles since the industrial revolution began in Great Britain in the eighteenth century. The Made-in-China paradigm has been a subject of frequent headlines in major newspapers all over the world, and its implications have been a source of controversy in relation to the high unemployment rate in the United States. This issue has also generated many inquiries into how this has been done. Jeffrey D. Sachs, Director of The Earth Institute, Columbia University, and a world-renowned economist has said, "China itself is an absolutely fascinating case, ... [and] China's path of development has been compared so often to the choices made in Central and Eastern Europe and the former Soviet Union after 1989 that it's really very worthwhile to understand properly what happened in China (Sachs, 2012)." Meanwhile, James McGregor, the author of "One Billion Customers" has indicated that "The time has come for a ... comprehensive examination of American competitiveness against a clear-eyed view of China's

very smart and comprehensive industrial development policies and plans (McGregor, 2010)."

The reasons for the rise of world economic powerhouses in the last five hundred years have been sought, pondered, scrutinized, and analyzed. The success of Portugal and Spain was credited to their maritime discovery; Holland, the might of capital utilization; England, the industrial revolution; France, the French revolution and its radical social and political upheavals; Germany, its formal unification into a politically and administratively integrated nation; America, its laissez faire system and innovations; and Japan, its lean management and Just-in-time manufacturing philosophy. Each has its own unique path, experience, and lessons that have enlightened their generation with new thoughts and practices, and restructured the landscape of global competition. The question is, "What are the attributes that have contributed to the rise of China as a manufacturing powerhouse?"

China's paramount leader Deng Xiaoping initiated a program of economic reform and the Chinese government opened the door to foreign investors in 1978 when the country found itself in a period of political uncertainty and operating a rigid centrally planned economic system. By the late 1970s, food production and suppliers became insufficient to support a population of over 965 million (National Bureau of Statistics of China, 2011). Hundreds of millions of people lived in poverty, and the country was on the brink of collapse. In pursuing their reform goals, the Chinese government compromised its revolutionary ideology with a new slogan, rooted in Chinese folklore: "it does not matter whether the cat is black or

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white, as long as it catches mice.¹ The Chinese people muddled through, figuring out ways to navigate the new world.² In the past three decades, China has transformed itself from an agriculture-based economy into an industrial machine, which processes or assembles 90% of the manufactured goods in the world. The former US secretary of state Dr. Henry Kissinger summarized this progress very well: “It is a tribute to the creativity of the generation that governed China in the Nineties that we can now take for granted what was then a vision (Zhu Rongji, p.xi).”

2. Taking the right turns at the cross road: Three remarkable periods

Gross domestic product (GDP) is well accepted as an indicator of total goods and services produced within a country in a year. This measure has been used to gauge the health, growth, or decline of a nation's economic performance. In his paper, “Building Better Global Economic BRICs (2001)” O’Neil (2001) predicted that the size of the economy of Brazil, Russia, India and China will surpass that of the G6 (the United States, Japan, UK, Germany, France and Italy) by 2050. Mapping out GDP growth, Wilson and Purushothaman (2003) estimated that China's economy would be larger than that of Germany by 2007, Japan by 2015, and the United States by 2039, using GDP as a primary indicator. If this was a prediction in 2003, it became a reality much sooner than 2015. China became the world's third-largest economy in 2007 when its GDP surpassed that of Germany and the second-largest economy in the world in 2010 when it surpassed Japan (Hamlin and Li, 2010; The World Bank Data, 2012). Overtaking Japan signals China's increasing influence and importance in the world economy.

Our knowledge of how China deployed its manufacturing strategy to become a manufacturing powerhouse is limited. This study suggests a taxonomy by categorizing China's 30-year's economic development into three major periods (Table 1) using GDP data provided by the Bureau of Statistics of China. We graphed China's GDP from 1978 to 2010 (Fig. 1).

The vertical dash lines in Fig. 1 indicate three turns that have been made in the past thirty years. We name the first turn, the period of 1978–1991, the “Incubation Years,” when Deng Xiaoping and the Chinese government dismantled a rigid centrally planned system to incubate a model integrating a centrally planned economy with free-market principles. In this period, economic reform and development policy were formulated and major structural changes were made. The second turn was made in the period of 1992–2001, which I call the “Navigation Years,” as China came out of its isolation by its historic accession to the World Trade Organization (WTO) and reached out to the nations of the world. The major focus of this period was on manufacturing infrastructural development. The third turn was the period of 2002–2011, the “Dynamic Years,” as China became the second largest economy in the world. In this period, China engaged in soft power or soft capability development (that included investment in education, workforce development, value-add manufacturing capability, and R&D) to manage the shifting paradigm of the global manufacturing supply chain.

The concept of soft power was defined in the book, “The Future of Power” by Professor Nye (2011). Soft power, as opposed to hard power, refers to the ability of a nation to project its influence on others through the attraction of its culture, values, and philosophy in the field of international relations. In recent years, the concept

of soft power has been applied to business management. In this case, soft power refers to the ideas of corporate culture, management philosophy, values, etc. In this study, soft power includes tacit knowledge, education, intellectual property, innovation, and human resources. These traits do not require highly visible capital investment and are extremely difficult to be copied by other enterprises; however, the cumulative impact of these traits of soft power can help build core competencies.

Each stage ushered in a new, historic period of reform and economic evolution. We analyze China's economic development from the perspective of production and operations management. The following sections provide a detailed discussion of each of the three periods.

3. The incubation years (1978–1991)

To halt China's economic collapse and lift hundreds of millions of people out of poverty, in 1978 the Chinese government decided to reform its national economic ideology and replace it with a new one, which was called “socialism with Chinese characteristics.” With no precedent to follow, the top Chinese leader, Deng Xiaoping, initiated a step-by-step plan to implement the reform. The first step was the creation of Special Economic Zones (SEZs). The aims of establishing the SEZs were to experiment with capitalist business models in a planned manner, entice foreign businesses to invest in the SEZs, invest in new infrastructure such as factories, banks, and office buildings, and try out preferential tax exemptions for foreign firms who are interested in investing and doing business in China (China in Brief, 2012).

The first hatching laboratory was Shenzhen, a village town in close proximity to Hong Kong, which was a mature capitalist hub city and used the same dialect as that in Shenzhen. Seeking low cost labor, convenient logistics, and tax benefits, businessmen from Hong Kong responded favorably to the opening of the SEZ. Shenzhen started as a major manufacturing base and gradually became a financial service center. It was transformed from a village known for selling knockoffs to a bustling cosmopolitan city.

With Shenzhen as a model special economic zone, the following years (1980–1984) witnessed the establishment of four more special economic zones (Zhuhai and Shantou in Guangdong Province, Xiamen in Fujian Province, and the entire province of Hainan) (Fig. 2). Following the traditional practice of establishing cities along riverbanks, to further attract foreign investment, China opened fourteen coastal cities, Dalian, Qinhuangdao, Tianjin, Yantai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang and Beihai in 1984 (e-China, 2012). In order to expand the program of economic reform, new special economic zones were added one after another to encompass a number of coastal cities, provincial capital cities, and autonomous regions, on a much larger scale than that of Shenzhen (Fig. 2).

In 1990, the Chinese government decided to open the Pudong New Zone in Shanghai to foreign investors and opened more cities in the Yangtze River valley (Shao, 2005). A chain of open cities that were winding along the Yangtze River belt, with Shanghai's Pudong as the leader, was formed (Fig. 2).

Investing in manufacturing facilities and equipment were among the most basic decisions manufacturing firms needed to make during the Incubation Years. These decisions had long-term consequences with respect to the development of business organizations' capability to produce products and would impact a wide range of manufacturing activities. China's Premier Zhu Rongji (1998–2003) commented that “the vast majority of Chinese exports to the United States [consisted] of labor-intensive goods with low value added (Zhu, 2011, p.392).” About 70% of Chinese

¹ Chinese: 不管白猫黑猫只要抓到老鼠就是好猫.

² Chinese: 摸着石子过河.

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