Pergamon

European Management Journal Vol. 18, No. 6, pp. 577–589, 2000

Printed in Great Britain
PII: S0263-2373(00)00051-7
0263-2373/00 $20.00

Manufacturing and Supply Chain Management in China: A Survey of State-, Collective-, and Privately-owned Enterprises

DAVID PYKE, *Dartmouth College, New Hampshire*
DAVID ROBB, *University of Auckland*
JOHN FARLEY, *Dartmouth College, New Hampshire*

Because of the booming economy, interest in China has soared in recent years. The government has decided to privatize many State-owned enterprises (SOEs), so foreigners can much more easily invest in existing firms than ever before. Is it wise to consider investing in these SOEs? Certainly, many have major problems. How sophisticated are Chinese manufacturing firms? Do they understand modern principles of manufacturing strategy and supply chain management? What is the level of installed technology, from traditional production planning systems, like MRP, to robotics? This paper attempts to answer these questions based on a survey of 100 firms in the Shanghai area. We surveyed State-owned enterprises, collective-owned enterprises and privately held firms, and we discovered some fascinating insights about their differences and their similarities. We discovered that the differences among the ownership types are generally insignificant, suggesting that our results are quite general. We find that these firms are far more advanced using explicit manufacturing strategies than we had expected. However, they are not as advanced in supply chain management as many Western firms. They report significant communication with customers and suppliers — more with customers than suppliers — but the nature of the communication is often limited to one dimension, particularly on the downstream side. Firms that communicate with customers tend to do so with suppliers as well.

Keywords: Supply chain management, China, Manufacturing strategy

Introduction

Interest in China has soared in recent years. The Chinese economy has been booming, and multinational firms have been investing in China at a furious pace. Dong and Hu (1995) note that foreign direct investments (FDI) increased in China at an average annual rate of 40.7 per cent between 1983 and 1993, reaching a high of 175 per cent in 1993. Managers clearly see the immense opportunity of investing in a country with a population that exceeds 1.3 billion and an economy among the fastest growing in the world. Amway, for instance, invested more than $100 million in China to pursue its strategy of direct, multi-level selling. Amway obtained a license to sell this way in 1995, and by 1997, Amway's sales exceeded $180 million.

However, not all stories have a happy ending, as arrangements are not necessarily stable. For example, Amway faced a remarkable turnabout in 1998 when the government determined that Chinese consumers do not have a 'mature and healthy consumption mentality,' and that China does not have the necessary legal system to effectively regulate the direct, multilevel marketing business. Therefore, they removed Amway's license. Sales in 1998 fell to $8.4 million after the license was removed. It appears that 1999 will be the first year in two decades that FDI will actually fall, perhaps by more than 20 per cent (The Economist, 1999).

Many companies have made millions in China, but many others have lost millions. Bureaucracy and uncertainty about how to manage in China combine to create huge problems. *The Economist* notes that what is needed is not more investment, but better investment. Some foreign firms have not understood the competition, not only from foreign firms, but from domestic Chinese firms as well. Whirlpool, for instance, discovered that the Chinese appliance makers, Haier and Guangdong Kelon, had comparable technology, lower prices, and a much better sense of how to design products for the Chinese market (The Economist, 1999).

Having a partner can help smooth the process, and there are many Chinese firms currently available for sale. Because the government has decided to privatize many State-owned enterprises (SOEs), foreigners can invest much more easily in existing firms than ever before. In the fall of 1998, at the Ninth Annual Trade Fair in Harbin, 1078 small and medium-sized State-owned enterprises were offered for sale. The provincial government even tried to give away some of the more distressed firms! (Broadman, 1999). A $50 billion program of debt-for-equity swaps likewise is moving very slowly (Eckert, 2000). Is it wise to consider investing in these SOEs? Certainly, many have major problems. Steinfeld (1998) notes that SOEs suffer from overstaffing, low (or no) profitability, and low productivity. This is a commonly held position. In fact, we ourselves have argued thus (Pyke, 1998a).

This information raises the question of what the real story is. How sophisticated are Chinese manufacturing firms? Do they understand modern principles of manufacturing strategy and supply chain management? What is the level of installed technology, from traditional production planning systems (like MRP) to robotics? This paper attempts to answer these questions based on a survey of 100 firms in the Shanghai area. The study included State-owned enterprises, collective-owned enterprises and privately held firms. We developed a set of summary scales composed of multiple items which are described in the third section. Each element in each scale was measured on a 7-point scale. The reliability as measured by the Chronbach α was above the minimum level of 0.6 for every case but one. The survey employed three self reports of performance which have been shown to be reliable in a wide variety of settings and which produced a reliability measure of 0.81.

In the next section, we present some general material about Chinese firms in the context of reviewing the relevant literature. Then in the third section, we discuss the methodology we used, and in the 4th–6th sections present our results on manufacturing strategy and supply chain management, beginning in the fourth section with some general results and comments. We conclude in the final section.

Literature Review

Organization of Chinese Firms

In China, the State sector includes enterprises that are State-run (State-Owned Enterprise) or collective-owned. 'State-run enterprise' is a shorthand term for the Chinese designator 'enterprise under the ownership of all the people.' These were

- ❖ established and maintained with central government investment
- ❖ overseen by central government authorities or their local representatives
- ❖ included in central government plans that (1) specified allocations of funds and materials that the firm would receive from government sources and (2) set output targets for goods to be delivered to the State.

Collectives are owned by the workers rather than by 'all the people.' Of the State-run enterprises and collectives, some (such as steel manufacturers) are large and centralized, and others are smaller and are owned by a town, county, or other administrative unit.

Today, many of these enterprises are undergoing major transition. Since 1996 Beijing started implementing a strategy adopted in 1995 under which 'the central government focuses its support and supervision on 1000 of the largest State enterprises while granting local governments greater leeway to pursue ownership reforms in smaller State firms. A substantial proportion of new bank lending in 1996, for example, went to 300 large State enterprises selected as the best performers among the 1000 "backbone" enterprises.' (Directorate of Intelligence, 1997, p. iv) The plan is to sell off all but 1000 of the roughly 305,000 SOEs; those that are not sold will be allowed to go bankrupt. The 305,000 SOEs