

A survey of manufacturing strategies in China-based enterprises

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Abstract

We present the results of a 1997 study exploring the manufacturing strategy of 46 plants (foreign-invested enterprises (FIEs) and wholly Chinese-owned enterprises (WCOEs)) located primarily in the Beijing–Tianjin area. Semi-structured interviews using a questionnaire in English and Chinese were employed to: (i) identify current activity (practices and emphases) and future trends in manufacturing, (ii) compare and contrast FIEs and WCOEs, and (iii) identify how practices correspond with performance on various competitive objectives and overall performance. Fundamental differences were found between FIEs and WCOEs both in terms of practice and priorities (the former emphasizing competition on time/delivery, and the latter various aspects of quality). © 2001 Elsevier Science B.V. All rights reserved.

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1. Introduction

Following calls for more “grounding” to undergird and advance the field of Operations Strategy (e.g., [1]), a stream of empirical research into manufacturing strategy has emerged in the past decade. Most of this work is based on single- or multi-industry surveys, generally in developed nations. There is a need for understanding manufacturing strategies (priorities, practices, and performance) in developing nations, and to compare such strategies with those in the developed world.

In this paper we present the results of an exploratory investigation into the manufacturing strategy

of firms from a variety of industries in China, representing both Chinese-owned and foreign-invested companies. In the survey of 46 plants (39 in the Beijing–Tianjin region of NE China) which took place from August to November 1997, we sought to define current practices and trends and to highlight any differences between foreign-invested enterprises (FIEs) and wholly Chinese-owned enterprises (WCOEs). FIEs are either wholly foreign-owned enterprises (WFOEs), or joint ventures (JVs) with capital-contributions from the foreign partner ranging between 25% and 99.9% [2]. The ownership of WCOEs is either by the state (7), collective (3), or private (3).

In their own right, FIEs and WCOEs are each attracting a great deal of interest at present. The performance of FIEs is of great importance, with foreign direct investment (FDI) in China reaching a record high of USD45.3 billion in 1997. The

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benefits of this investment include the transfer of both technology and management skills – directly through JVs, and indirectly through increased competition with the state sector. One would also hope that success in FIEs will mitigate some of the costs of reform in the state-owned sector, which has been under considerable pressure to perform as government funding decreases [3].

2. Literature review

2.1. National and international survey research in manufacturing strategy

One of the earliest surveys of manufacturing strategy is by Schroeder et al. [4] who conducted an exploratory study of competitive priorities and practices in U.S. firms, by surveying 39 manufacturing managers on an Executive Programme. They found the first- and second- ranked objectives to be quality and delivery performance, respectively.

Single-industry US studies include Vickery et al. [5] on 65 furniture manufacturers, finding significant relationships between company financial performance and the degree to which manufacturing performance supported the business strategy. Upton [6], employing data from 52 paper plants, found that the ability to provide flexibility was more a function of the workforce and management communication than it was of plant size and process technology. This suggests that studies in manufacturing strategy neglecting *infrastructure* (human resources, management policies, and procedures) may be deficient. In this vein, a study of 41 transportation, electronics, and machinery firms in the US by Bates et al. [7] shows a significant relationship between manufacturing strategy and organisational culture (including communication, performance and practice).

Manufacturing strategy survey research efforts quickly spread to regions, with Ward et al. [8] applying path analysis to data from 319 Singapore companies, and concluding that factors in the business environment have a significant effect on operations strategy. Hum and Leow [9] report on where various *structural* and *infrastructural* decision elements of 55 Singapore electronics firms (mostly

multi-nationals) fall in terms of the four-stage framework of Hayes and Wheelwright [10].

Several global studies are being conducted on a longitudinal basis (see [11]), including those of the Global Manufacturing Research Group (GMRG) and the Manufacturing Futures Survey (MFS). The GMRG focuses on production planning and control and logistics practices in two industries, viz. small machine tools and non-fashion textiles (see [12]), with several papers (e.g., [13,14]) reporting on data collected from 100 Chinese plants – in the Shanghai region. However, the data collected relates primarily to practices, rather than priorities and objectives, and is thus of limited use when it comes to investigating manufacturing strategy, and the relationship between practices and priorities.

The MFS has grown out of the biennial US Manufacturing Futures Survey initiated at Boston University in 1981. Covering a variety of industries, it details trends in competitive priorities and performance, effectiveness of programmes, and perceived challenges to manufacturing. While the US MFS was not administered in 1998, other regions of the world have continued the survey.

2.2. Joint venture management and cross-cultural adaptation

There is a large body of literature reporting the results of survey research on the practices and performance of FIEs, and even providing contrasts with domestically owned plants (e.g., Schroeder et al. [15] report on Japanese and American-owned plants in the US).

In the Chinese context, research on FIEs is still in its infancy [16]. Much of the research focuses on the perceptions, risks, and problems (e.g., dealing with the partner, regulations, and cultural adjustment) faced by foreign companies investing in Joint Ventures. A number of case studies have appeared, presenting both successful firms (e.g., [17]) and failures (e.g., [18]). Interestingly, the latter work cites “lack of management control over the internal operations” as one of the major challenges facing JVs in China. When it comes to operations management in Chinese JVs, the literature is extremely sparse. Zhang and Goffin [19] present the results

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