

China – a tiger in the supply chain

*Report of a Cambridge University research programme investigating
China's developing role in the global supply chain*



Foreword

This report presents the findings of a two-week research visit to a wide range of manufacturing operations in China to investigate issues surrounding the role of China as a manufacturing base within a global supply chain. The authors of the report are MEng graduates from the University of Cambridge Manufacturing Engineering Tripos programme¹.

The report aims to provide a timely review of the key issues that impact this topic and it is based upon 25 manufacturing site visits in the areas including Shanghai, Suzhou, Beijing, Tianjin, Shenzhen, Dongguan, Zhuhai and Hong Kong in July 2005. Throughout the visits the authors of this report have tried to understand the key facts behind what was being presented to them. However, translation difficulties and corporate sensitivities have understandably prevented some questions from being answered fully, particularly with regards to awkward topics such as government influence, company profitability and sources of investment. Wherever possible, secondary sources of data have been used to verify these conclusions; other insights into business in China are presented on an “as seen” basis. Recommendations for additional sources of information for those seeking to know more about the topics presented in this report are given at the end of this document.

The researchers are extremely grateful to all of the firms who kindly acted as hosts throughout the duration of this project. The firms gave valuable insights into doing business in China and, through providing opportunities to question senior managers, made an extremely valuable contribution to the research.

Our gratitude is extended to all companies visited, to individuals who have given up their time to meet with the researchers, and to sponsors without whom this project could not have happened.

The opinions expressed in this report are those of the authors alone and do not necessarily reflect those that have provided support, guidance and advice in its preparation.

MET Overseas Study Tour Committee 2005

¹ www.ifm.eng.cam.ac.uk/met

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Executive summary

This report presents the findings of a two-week research visit to a wide range of manufacturing operations in China in July 2005 to investigate issues surrounding the role of China as a manufacturing base within a global supply chain². The authors of the report are MEng graduates from the University of Cambridge Manufacturing Engineering Tripos programme. The key findings of the report, structured around seven key themes, are as follows:

1. Setting up a manufacturing base in China

Key issues investigated = What are the different cases for producing in China? What are the main driving forces? What are some of the opportunities and risks companies may face when moving into China?

Key conclusions = The main drivers for setting up in China are low labour costs and proximity to the Chinese market. If production moves, then suppliers may also need to follow. Products and processes particularly suited to the Chinese environment would seem to include: textile-based products, consumer electrical and electronics, plastic injection mouldings, metal stamping and pressing, and process industries. Knowledge transfer is a key issue, both positively (learning about the Chinese market by being ‘on the ground’) and negatively (loss of key value-adding know-how to local competitors).

2. Supply Chain Management

Key issues investigated = What are the cost savings which are possible from moving part of a global supply chain into China and through managing a modern and efficient supply chain based not only upon Chinese suppliers but also on imports from around the globe?

Key conclusions = The major cost benefit of operating in China comes from effective supply chain management, not just the use of low cost labour. This cost saving comes from both low unit cost and reduced supply chain management overheads. Many domestic Chinese businesses have developed advanced capabilities in Just-in-Time (JIT), Vendor Managed Inventory (VMI) and logistics and can respond well to the demands of modern production

² A separate report has also been produced based upon the combined findings from this and previous research programmes organised by the University of Cambridge Institute for Manufacturing Centre for International Manufacturing. This report, entitled “Growing with China: A report for multinational companies operating in China” is available from www.ifm.eng.cam.ac.uk/cim.

systems. Quality standards of simple components are very high and are improving for the more complicated, high tech parts. The key to operating an efficient supply chain is to build relationships with suppliers, customers, the Government and Customs. A company which is considering operating its supply chain in China needs to invest time and effort in understanding the Chinese business culture. Face to face interactions are very important in building trust, and if this is achieved, the rewards could be substantial.

3. Competition and intellectual property rights (IPR) within China

Key issues investigated = What are the issues surrounding China's accession to the World Trade Organisation (WTO)? What are the threats to a foreign firm in sharing intellectual property with Chinese suppliers? What are the risks to inexperienced firms moving into China and doing business in a Chinese context?

Key conclusions = There are many examples where foreign companies have managed IPR and competitive risks and are successfully doing business in China. Overall, the biggest risk to any firm producing in China is to fail to understand and develop the appropriate relationships with suppliers and government officials, relying upon western-style contracts rather than trust to relate to suppliers. The collaborative nature of many supply chains in China extends to the areas of competition and IPR. Introducing a supply chain into China requires sharing the knowledge of how to make a specific product with Chinese companies, either as joint ventures or as suppliers. If the relationship between supplier and customer is not effectively managed, then this knowledge could be used to compete either by counterfeiting, 'grey market' sales or by direct product competition.

As such it is extremely important to select carefully which products to introduce into China, where to source them, and to fully understand the role of the foreign parent operations: R&D, sales, marketing and distribution.

4. China as a centre for research and development

Key issues investigated = How can you assess both tangible and intangible benefits to performing R&D in China, as well as the risks associated with carrying out this type of work in an economy where protection of intellectual property is a major issue? What is the impact of global location upon the different types and degrees of R&D activity performed by firms? How can you determine the suitability of China as an R&D base for different types of firms?

Key conclusions = The Chinese market is different to that of other developed countries and in order to operate successfully, it is important to understand the Chinese culture. If the product

is to be standardised for the Chinese market, it is important to have an R&D facility in China as this enables the company to design the correct product for the market.

Co-locating R&D with manufacturing is certainly beneficial. Most of the companies visited during this research project established a development centre in close proximity to their production facilities as this enabled them to decrease the cycle time of problem solving. This seemed to be especially important for new product introduction. For companies who had no R&D facilities at the manufacturing site, experts from their R&D facilities had to come and supervise the starting phase of the project.

During the visits it was observed that there was very little technology R&D being carried out in China. Most companies are reluctant to move their technology R&D to China, not because the Chinese science and technology researchers are any less able, but because of the researchers (perceived) lack of experience in commercial R&D. In order to be able to innovate, it is necessary for employees in R&D to have experience of the industry and have the appropriate knowledge and skills for that area of research. The majority of R&D facilities in China were found to be those carrying out product and process R&D activities, which need to be more closely coupled to manufacturing and the market.

The Chinese have the knowledge and capabilities to perform technology R&D – the problem is they do not have the necessary experience. This seems to be changing as multinationals have started increasing the training for their Chinese employees, creating the option of moving such R&D to China.

5. Human Resource Management in China

Key issues investigated = What are the different strategies adopted by different firms with regards to maintaining a Chinese workforce? How are firms overcoming the much discussed mobility of labour? What are the key issues relating to managerial competence available within China? What are the costs incurred in creating a Chinese facility as part of a multi-national company?

Key conclusions = Cultural differences can cause problems, but can be overcome. There are different types of management approaches that can be applied to different situations, and these were shown to be effective for companies at different stages of their evolution in China. These approaches included: use of mainly expatriate managers; use of mainly local Chinese management, or mix of both. Workers can be motivated through training and benefits packages. Chinese workers can be harder-working and more focused than their Western

counterparts if managed effectively. The brand of the company is important to workers in China, particularly for future career progression.

6. Creating differentiated Chinese products

Key issues investigated = Through analysis of the impact of brands within the marketplace, what opportunities exist for foreign firms to sell their products into the Chinese market? How can brands be developed in the marketplace? How can product differentiation be used as a means of competitive advantage within China and within more developed economies?

Key conclusions = The potential for branding to become a source of competitive advantage in China is huge as consumer tastes are maturing. One brand often does not fit all in China due to the massive income variations across the country – this must be reflected in company's brand strategy. Capturing the Chinese market requires heavy investment in the brand, tailoring the brand to the Chinese market, and increased spending on R&D to increase frequency of new product introductions.

The low end of the market (the majority of the population) is dominated by local firms and is hard to enter without forming alliances, joint ventures or acquisitions.

Problems faced by a foreign company entering China include government restrictions and legislation, a language barrier, the lack of infrastructure which limits ease in distribution of product (and therefore brand), the overcapacity in many markets which are affecting profits, and the rise of counterfeiting and copying.

7. Opportunities and threats of producing in China

Key themes investigated = What will be the impact of new Government policies? What are the key economic issues that need to be considered in setting-up to China? What are the key cultural issues that need to be considered in setting-up in China?

Key conclusions = Government in China, both national and regional, has a strong influence on all business activities. For certain business sectors, there may also be influence exerted by the parent company's own national government and its relationship with the Chinese government.

The infrastructure is developing rapidly in many areas of China, but the quality of the transport, power and communications infrastructure cannot be guaranteed. The government, both regional and national, has been a strong influencing factor in the development of economic development zones which are in turn leading to the formation of strong clusters.

These clusters often have not only sectoral strengths, but also often have national focus in that each one tends to attract investment from specific countries.

There are noted concerns in some regions at the very high levels of unskilled staff turnover, but in some regions there is strong loyalty to employers. The very high numbers of science and technology graduates entering the job market is making an impact, but the lack of industrial experience of many of these graduates puts a limitation on roles they can take on.

Cultural differences can hinder communication and cause misunderstanding between foreigners and the Chinese both on the personal as well as the company level when dealing business in China. The concept of *guanxi* (which can be described as an ongoing development of personal relationships or connections) is particularly relevant, and will impact the way in which non-Chinese firms form relationships with the government and other Chinese organisations.

Cultural understanding is an important aspect of a successful manager, and this is often achieved by creating a joint Chinese & foreign management team. This provides an opportunity to use the strengths of both to enable a successful operation. Expatriate managers often have more experience of setting up and operating production facilities, whilst local staff will relate better to the shop floor workers and are thus likely to gain cooperation and have more understanding of the issues they are managing.