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China's Shifting Competitive Equation

How Multinational Manufacturers Must Respond

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By now, the world's largest corporations have poured billions of dollars, yen, and euros into China in pursuit of two basic objectives. One has been to create a low-cost manufacturing platform that could make and export products to other markets. The second objective has been to create sales and distribution networks that can reach China's 1.3 billion people, sometimes with products that are made in China but also with goods imported into the country. In the mind of far too many corporate strategists at headquarters, China should be treated much like any other emerging market.

But these old sourcing and sales models are coming under pressure, according to a study conducted by the American Chamber of Commerce (AmCham) in Shanghai and Booz Allen Hamilton. The "China Manufacturing Competitiveness 2007–2008" study, conducted for the first time in 2007 and planned annually thereafter, surveyed 66 manufacturers among the members of AmCham Shanghai's Manufacturing Business Council (see "About the Survey"). It found that, due to low labor costs and high expectations regarding a market of 1.3 billion people, multinationals have tended to build export-oriented factories with operating strategies based on abundant, cheap labor and distribution channels aimed at rapid increases in annual sales. In neither case have multinationals, as a whole, imported the very best practices from their

About the Survey

Of the 66 companies belonging to AmCham Shanghai's Manufacturing Business Council that were surveyed in October and November 2007, 81 percent were wholly owned by foreigners, 10 percent were joint ventures between multinationals and Chinese partners, and 9 percent were categorized as "other." The manufacturers' industries included consumer, industrial, healthcare, and materials, with countries of origin including the United States, Japan, and several in Western Europe. About one-third of the respondents had an additional major presence in China beyond their manufacturing footprints: More than 50 percent had representative offices, while roughly one-third had regional or global headquarters in China (because some companies surveyed were joint ventures with Chinese entities, their headquarters were considered to be in China). Other companies also maintained regional or global procurement centers, or research and development centers, in China.

operations elsewhere in the world. Nor have most of them managed to integrate the dual functions of export platforms and domestic market penetration. The study showed that three out of four companies today lack fundamental best practices in their China operations.

Companies that do rise to the next management level by integrating their export-oriented activities for global markets with their domestic market operations are achieving higher levels of profitability. The study showed that companies that successfully integrate their China operations enjoy profitability of 29.6 percent, on average, compared with 17.8 percent profitability for those that do not. But only one out of four companies is able to integrate the dual halves of their China operations this way.

Multinationals will need to bring their best operations to China and fully integrate their sales and sourcing functions if they hope to retain an advantage as China's operating environment becomes more competitive and costs increase. One of every two multinationals surveyed agrees that India, Thailand, and Vietnam are challenging China's position because, among other factors, the Middle Kingdom's wages and other costs are rising and the increasing value of China's currency is eroding its cost advantage. Nearly one in five (17 percent) of these companies already has made the decision to move at least some China-based operations to other low-cost countries in Asia and elsewhere.

Because we believe this is the first study to produce a statistical portrait of how manufacturers perceive their China operations and how they are structured,

we will discuss the research results in some depth before offering our own conclusions about the strategic implications of this research for chief executive officers and other corporate decision makers.

The State of China and Its Industry

It is clear that China's manufacturing competitiveness is coming under fire: More than half of the surveyed companies—54 percent—either strongly agree or agree with the statement “China is losing its competitive edge to other low-cost countries in manufacturing.”

Fortunately, the survey also revealed good news: Even if China has lost some of its edge, it is still very much in the game. Operating in China still offers huge advantages, which is why 83 percent of the respondents say they have no concrete plans to move capacity from China, compared with 17 percent who say they do. Reflecting changing perceptions, manufacturers say the biggest reason to remain in China is access to its vast domestic market (see Exhibit 1). Manufacturers also say they are reluctant to spend the money to build new supply chains or other infrastructure in other countries.

In fact, access to the Chinese market is now a key reason why many companies are coming to China in the first place: Access to the local market is important

Exhibit 1

Respondents' Top Reasons for Not Relocating Out of China

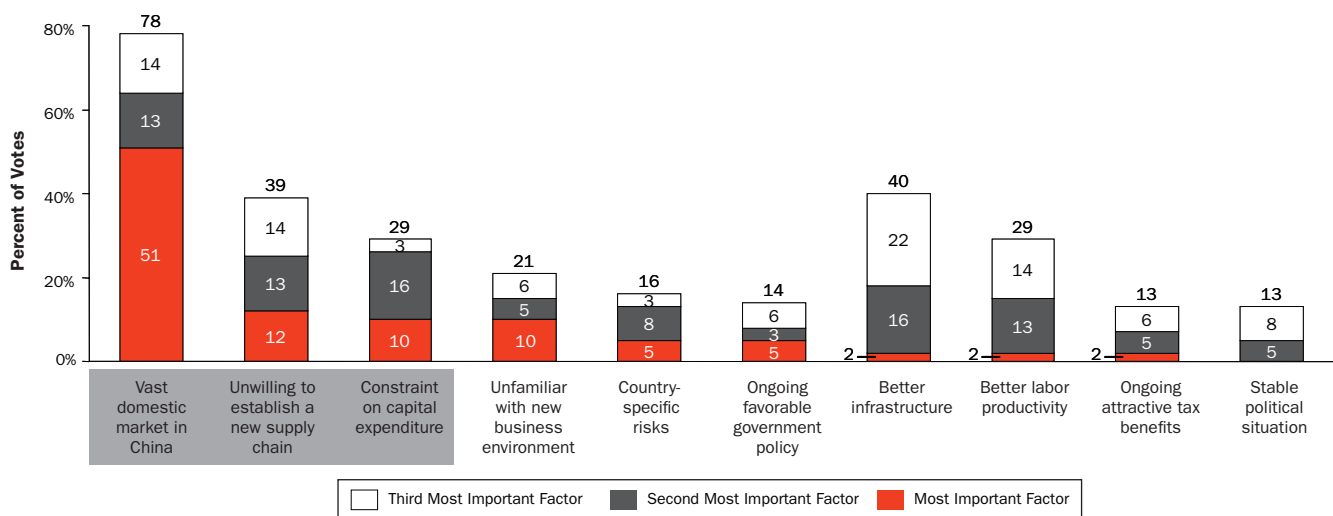
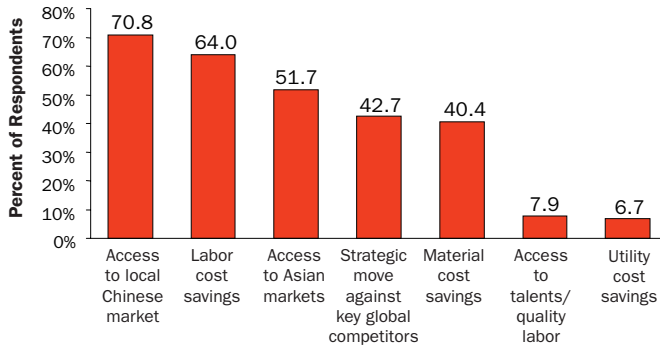


Exhibit 2
 Respondents' Key Motives for Establishing a Manufacturing Base in China



Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

to more respondents (70.8 percent) than is the mere use of China as an export platform, whether for world or Asian markets. This contrasts with 64 percent of respondents who cite labor cost savings as their major motive for locating operations in China and 51.7 percent who cite access to Asian markets (see Exhibit 2).

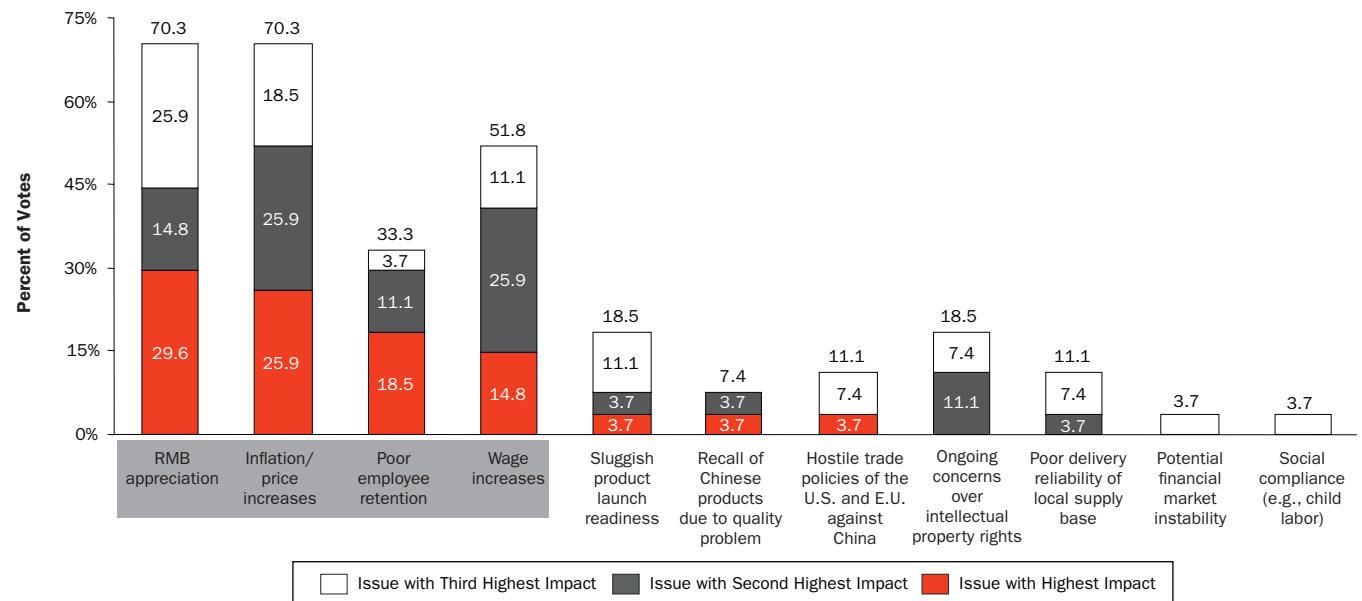
To the degree that some executives believe China is losing some competitive edge, the two factors that are

most prominent in this shift are the appreciation of the renminbi (RMB) and inflation in prices of components and materials (see Exhibit 3). Other factors they cite are wage increases and poor employee retention.

Companies are feeling much of the cost pressure in the realm of white-collar managerial staff. The respondents report that they are paying management staff 9.1 percent more every year and paying white-collar support staff 10.3 percent more. In contrast, blue-collar staff costs increased by 7.6 percent and raw material costs by 7.1 percent. On balance, most companies are facing annual cost increases of more than 5 percent in wages and more than 3 percent in materials (see Exhibit 4).

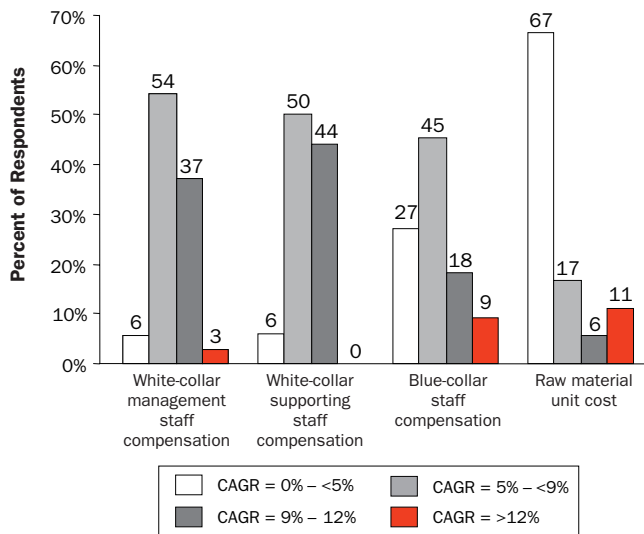
At the same time that costs are increasing, China is lagging behind global standards in many operational dimensions. Compared with companies' existing global operations, China scored below standards on such important measures as logistics infrastructure, trade environment, access to technology, management capabilities, and protection of intellectual property (see Exhibit 5).

Exhibit 3
 Top Concerns of Companies that Believe China is Losing Manufacturing Competitiveness



Sources: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

Exhibit 4
Range of Cost CAGR Experienced by Survey Respondents



Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

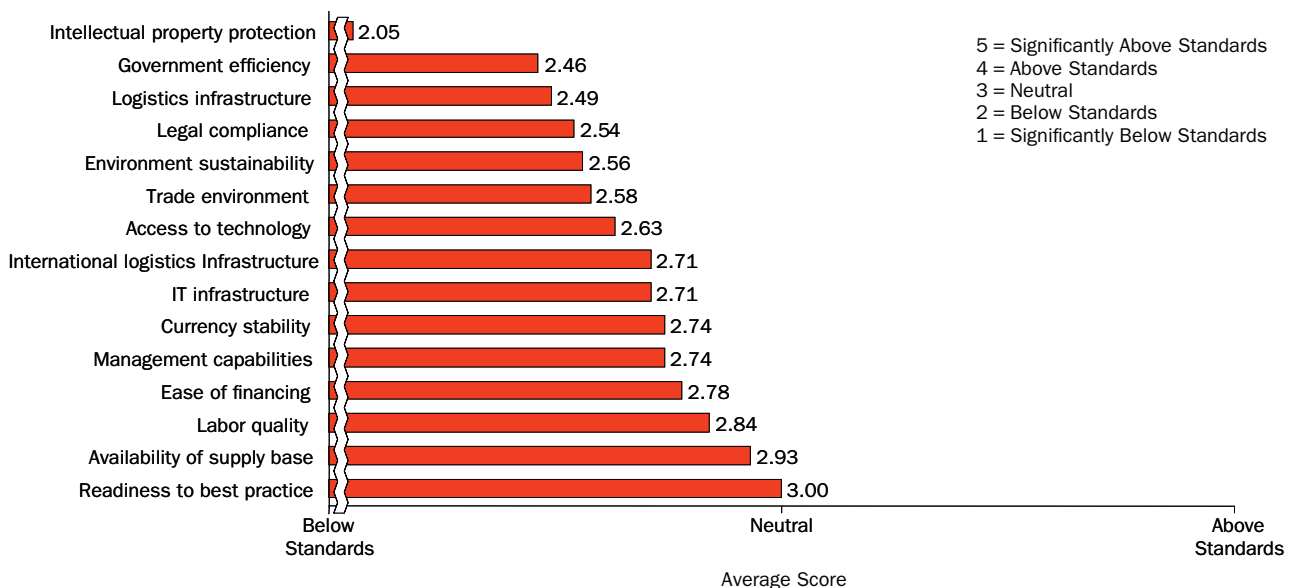
The supply base is a crucial issue, and it's clear that Chinese suppliers are significantly less well developed than suppliers in the United States, Europe, and other parts of developed Asia. That's especially true in the automotive and energy equipment industries, and slightly less so in electrical equipment (see Exhibit 6, page 5).

China is slightly closer to global standards when it comes to logistics capabilities but is still behind in most industries. The sector where it is most behind appears to be energy equipment. When it comes to electrical equipment, however, China is on par with more advanced economies (see Exhibit 7, page 5).

When respondents were asked to compare China with other countries as a venue for relocation, it was highly significant that they cited lower labor costs in those other countries as the largest differentiator, at 3.7 on a scale of 1 to 5 (see Exhibit 8, page 6). Clearly, the days of China's being considered a cheap labor manufacturing platform are numbered. Other major factors in the attractiveness of those other countries were tax benefits, the competitive landscape, intellectual property protection, and utility costs. However, there were a number of areas in which China was superior to the alternatives, including the size of the market, availability of supply base, and IT infrastructure. The countries most often cited as possible alternatives to China were India, Vietnam, Thailand, Malaysia, and Brazil, in that order.

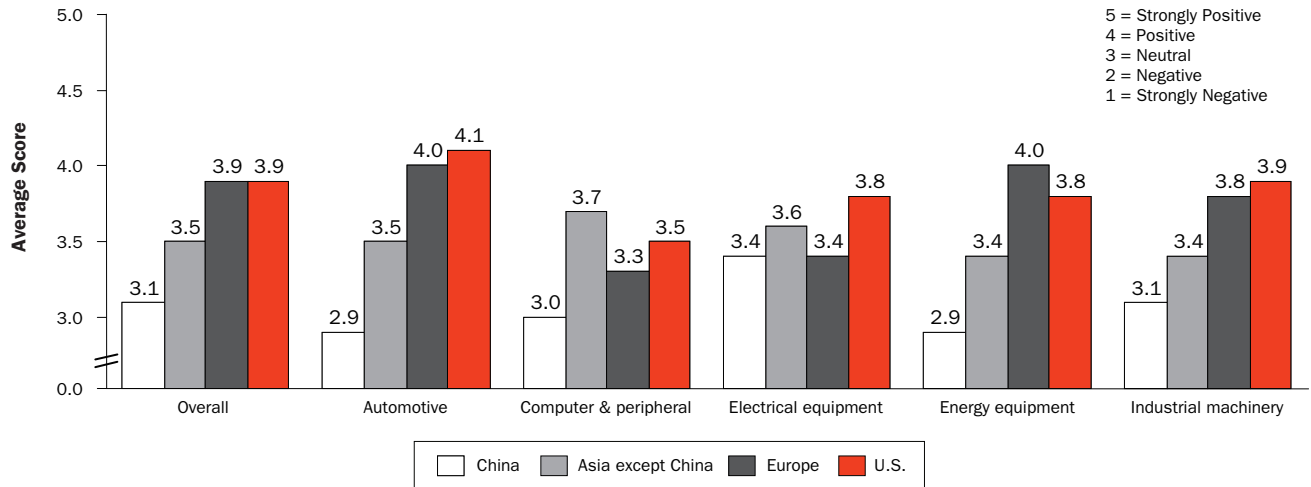
If companies have failed to thrive in China, however, the competitive environment is not solely to blame.

Exhibit 5
China's Scores on Various Parameters Compared to Companies' Existing Global Footprints



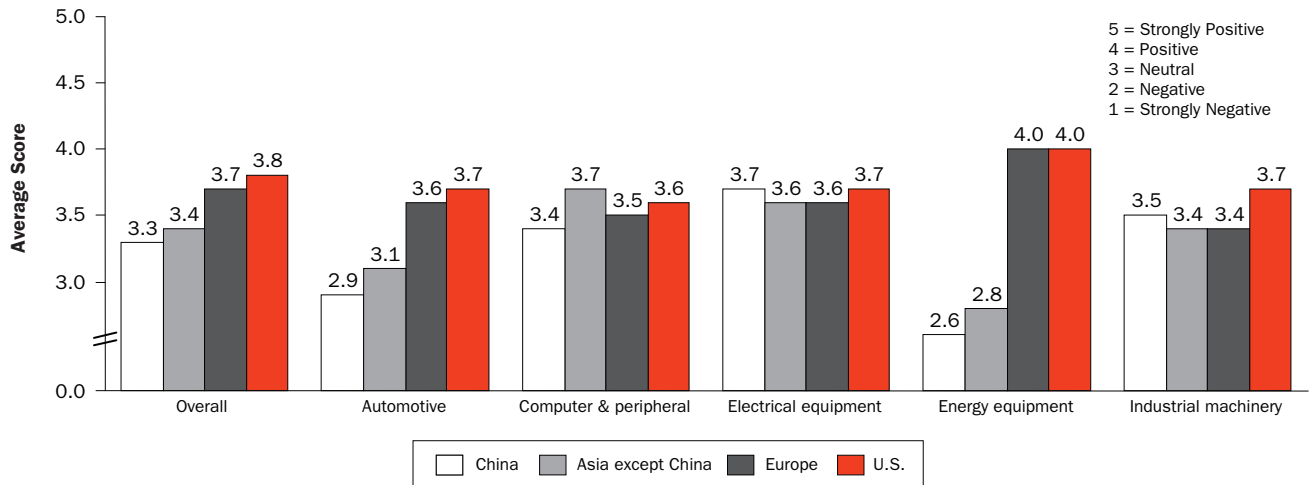
Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

Exhibit 6
Comparison of Supply Base Quality across Geographies



Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

Exhibit 7
Comparison of Logistics Capability across Geographies



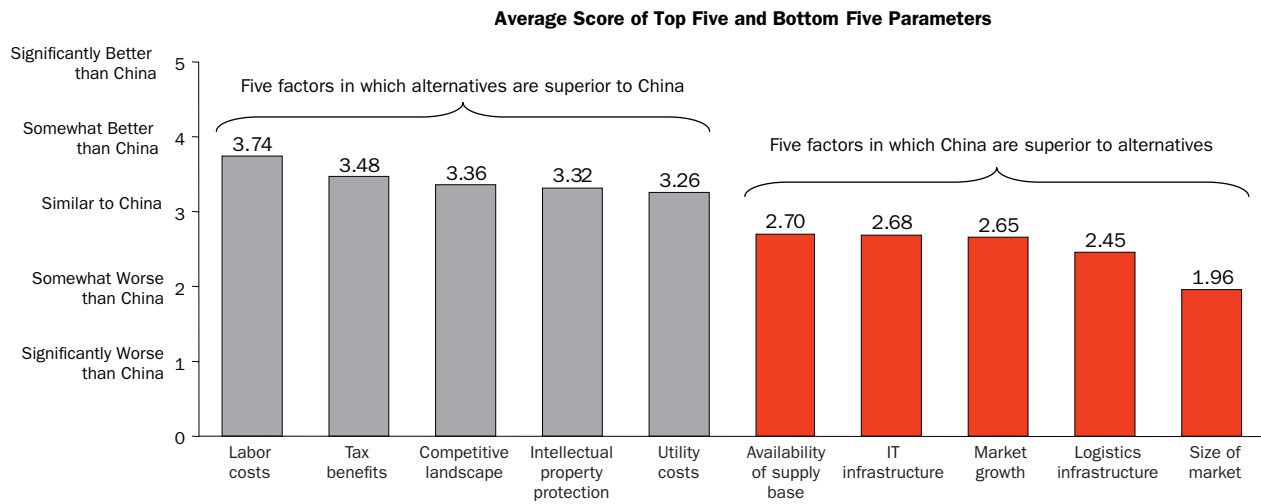
Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

We asked respondents about how they are deploying best practices in their manufacturing, supply chain, and logistics operations—and found that none of the best practices, whether supply chain risk management or lean Six Sigma, was being applied by more than 50 percent of the respondents. Their Chinese operations have done best in integrating their enterprise resource planning or manufacturing resource planning (ERP/MRP) systems, calculating their inventories, and optimizing

product flows. But they are significantly behind in network modeling and optimization, postponement of assembly, segmenting and tailoring supply chains by product characteristics, and statistical forecasting (see Exhibit 9). There does not appear to be a wide variation across industries in this regard: The computer, automotive, electrical equipment, industrial machinery, and chemical sectors are roughly equivalent.

Exhibit 8

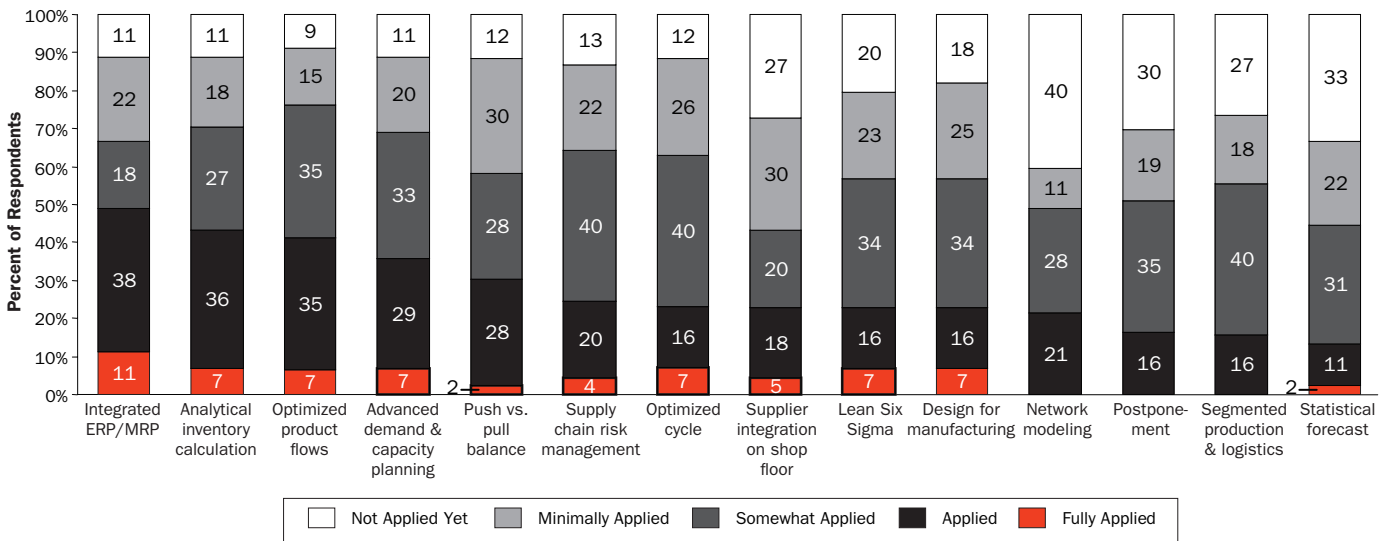
Comparison of China with Respondents' Most Favorable Candidates for Foreign Relocation



Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

Exhibit 9

Extent to Which Respondents Apply Best Practice Levers to Existing Operations in China



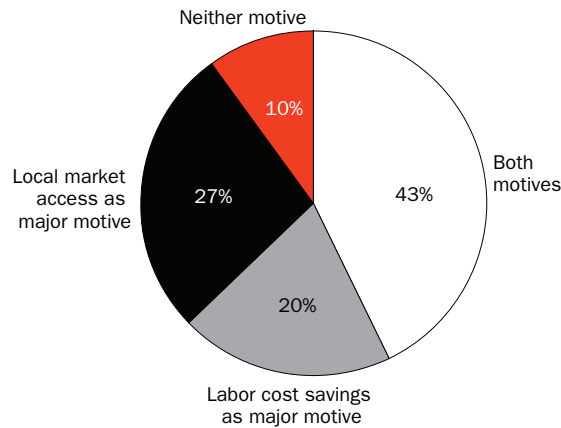
Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

A large percentage of the companies surveyed—43 percent—are consciously pursuing the dual objectives of selling products in China and taking advantage of labor cost savings, presumably for goods for export (see Exhibit 10, page 7). Indeed, that appears to be the path toward greater profitability in China. Companies that report pursuing dual objectives enjoy profit margins of 29.6 percent while others report only 17.8 percent margins.

The survey paints a complex portrait: These manufacturers have a large presence but either have not been able to or have not chosen to implement global best practices across their operations, and they are concerned about the changing cost structure they see unfolding around them. It is clearly a critical moment for manufacturers who want to make the most of their existing investments in China as well as those

Exhibit 10

Respondents' Perspectives on Whether Local Market Access or Labor Cost Savings is the Primary Motive for Operating in China



Source: China Manufacturing Competitiveness 2007–2008; Booz Allen Hamilton

who are just beginning to recognize the possibilities inherent in one of the world's largest markets.

Building a Strong Platform for Growth in China

We believe that the manufacturing philosophy employed in recent decades by foreign multinationals in China is in need of an overhaul. Far too many companies built factories and distribution systems with low levels of technology and without widespread adoption of best practices from more sophisticated markets, assuming that the low costs associated with operating in China would offset these omissions. But the changing cost and currency structure have shifted the equation. Now those pressures are beginning to force a rethink of how these companies structure their Chinese operations and how they position China in their overall global strategy.

The best manufacturers are employing a thought process that may be likened to a pyramid (see Exhibit 11).

Global Integration. The base of the pyramid, and therefore the starting point, is almost philosophical in nature and poses a question to chief executive officers: What are the fundamental guiding principles for organizing your Chinese operations? We have found that the most global companies—IBM, General Motors, and General Electric, for example—view China in a global context and see it as part of an international

web of capabilities, including manufacturing, innovation, new business model incubation, and talent development. It's not just another emerging market. Because of its size and its dynamism, these companies recognize that China must be a core part of their global strategies. They integrate their sourcing and sales operations in China, rather than focusing on developing some operations aimed at the world while other systems concentrate on China. That's why we call the companies operating in this zone "global supply chain integrators": They integrate their sourcing-centric models and their sales-centric models in China and deeply embed their Chinese operations in their planning and thinking about global markets. They treat China as a linchpin of their global operations, rather than as just another market.

Postponement/Late Customization. One of the keys to making an integrated presence work, and the next level of the pyramid, is the ability to create manufacturing systems that produce large volumes of products, but postpone the moment at which those products have to be customized for specific Chinese and non-Chinese markets. (This is an area where the research showed that Chinese operations are particularly weak.) There may be an infinite number of ways to assemble a personal computer, for example, but few of them make economic sense unless the company knows who the final customer is. In an export context, rather than

Exhibit 11

Defining and Implementing a Globally Integrated Operations Strategy



Source: Booz Allen Hamilton

building up a huge inventory of commoditized PCs in China, it may make more sense to use China for the early and middle stages of assembly, but not apply culture-specific, customer-driven touches until the components get near the ultimate customer, whether in the United States or elsewhere.

There are at least three varieties of postponement:

- *Light.* Hewlett-Packard, for example, postpones commitment of a printer to a market by making universal printers and then applying power supplies and language-specific manuals at the last moment
- *Medium.* The National Hockey League has replica jerseys made in bulk, but then customized in the final stage with the player names and numbers, in quantities depending on the popularity of specific players
- *Advanced.* When Motorola makes radio products, it places the most expensive parts in a housing set; labeling and packaging are undertaken only after a specific order is received in a postponement center.

Tailored Business Streams/Segmentation. The net effect of successful postponement is what we call a tailored business stream¹. By definition, a tailored business stream takes advantage of China's capacity for large-scale, cost-efficient manufacturing yet retains high levels of differentiation for both Chinese and global markets.

To understand what a tailored business stream is, let's return to the example of PC assembly. It's not uncommon for companies to respond to customer demand by offering various levels of customization, which increases operating expenses without necessarily adding value. Tailored business streams allow a manufacturer to identify the common elements that unite 80 percent of its output and thus put the majority of its capacity into a single stream, while reserving 15 percent of capacity for somewhat predictable demand conditions and 5 percent for opportunities that arise suddenly and therefore cannot be forecast. Dell Inc. is an example of a company that applies the postponement and tailored business streams concepts to its product: It customizes computers in response to a specific order, ensuring that the components neces-

sary for rapid, last-minute configuration are available at the right point in its supply chain. Yet Dell has varying approaches to its supply chain for notebooks, desktop computers, servers, and other products. Although this innovation is not exclusive to China, it provides an example of how a company can master the application of this concept in other markets.

Tailored business streams can be challenging to develop, but they can bring enormous benefits if companies embrace the best practices that are available in other markets today. Companies can start the process by having a set of clear policies for managing trade-offs in these systems and by creating a unified decision-making system.

Footprint and Network Modeling. Manufacturers will need to understand how postponement and tailored business streams can best work for them in order to take the next critical step: determining how many plants they should have, where they should be located, and what their focus and mission should be. Understanding China's role in global operations is a key element in determining how to best construct a global manufacturing footprint.

There are four key elements to designing a manufacturing network:

- *Let the product and the customer guide the process.* Consider market requirements, including lead times, delivery, and services; if customers require short lead times, it may rule out the construction of plants in distant, low-cost countries
- *Identify economics and challenge constraints.* These may include contractual obligations, regulatory requirements, and labor agreements
- *Evaluate alternatives.* In evaluating different network scenarios, the total production and supply network, which is generally much broader than the manufacturing footprint, needs to be optimized. Take into account the costs of complexity and the economics of manufacturing in-house versus outsourcing
- *Develop the business case.* The implementation plan for the new footprint should consider

organizational changes and potential risks, such as supply interruptions, transportation delays, and currency movements.

Sales & Operations Planning. The next level of the pyramid, S&OP, enables coordination and joint planning between departments, by ensuring that marketing teams alert operations and IT when they plan a promotion; by increasing communication between product managers, sales executives, and processing center leaders; and by establishing a regular forum to resolve cross-functional issues. Smart manufacturers have found that better coordination between the sales and operations departments, as well as planned rather than ad-hoc decision making, can make the difference between profit and loss. To continue the PC example, a strong S&OP system would allow a company to more easily determine if a major customer wants a shipment of very specific computers in two days or a more generic order delivered a week or 10 days later. With better communication between the sales force and the manufacturing team, the S&OP system would drive decisions about where last-minute customization is performed and where inventory is held.

Lean Practices. Many manufacturers start at precisely the wrong point in China by trying to create lean operations without understanding their fundamental mission and all the building blocks of the pyramid. We have found that it is wrong to tackle the challenge of lean practices, originally pioneered by Toyota, if the fundamental operating philosophy is misguided or not adequately developed. We estimate that fewer than 5 percent of the companies in the world are able to fully deploy lean practices, and the percentage is much lower in China.

To be sure, there are clearly huge opportunities to use lean practices to improve existing operations and unlock latent productivity. Too few companies are well integrated with their suppliers—and point-of-usage deliveries, which are commonplace in the developed world, are not widespread in China. In some cases, there have been poor localization levels in manufacturers' supply bases. Quality problems in Chinese supply chains have been widely reported, and they are of obvious concern. But they are just one part of a broader problem.

Shop-floor operations also are not integrated enough. Logistics, both inbound and outbound, are inefficient, and information systems are not producing the right caliber of information. One problem is that companies have built ERP/MRP systems for sourcing and then other systems for their distribution channels. If they are going to be able to integrate their complete operations, the information systems also need to be linked.

But the goal of achieving lean practices should not drive the entire decision-making process in China. Building full-fledged manufacturing and distribution capabilities on the mainland is becoming more complex than it once was, and decisions have accordingly become more complicated.

In previous decades, it seemed that virtually any plant built in China could become profitable because costs were so low. And virtually any kind of sales channel could reap double-digit gains in growth every year. But now the challenge for companies is to take a more systematic and global view of their Chinese operations and integrate the duality of those operations, thereby becoming global supply chain integrators. Even more fundamental, perhaps, is adjusting the philosophical premises that shape and guide all decision making in China.

Also contributing to this article were Ken Zhong, Raymond Yeung and Ashish Ranjan.

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Dr. Christoph Alexander Bliss passed away prior to the final publication of this article. Booz Allen Hamilton recognizes with gratitude his numerous and significant contributions to the advancement of the topics of operations strategy and globalization.

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