

CONTRACT MANUFACTURING IN CHINA

The Advantages and The Obstacles

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ABSTRACT

There is mounting evidence that the ability for large contract manufacturers (CM's) to exist in their present form in the United States is being put to the test by the recent surge in operations to overseas facilities. This paper will address China in particular as a choice for many CM companies.

As with any shift overseas, companies that have considered themselves "best practice" are suddenly confronted with cultural and managerial issues that are completely unique to a particular country. In this respect, China certainly presents obstacles that require delicate maneuvering and careful consideration. Understanding what will work here, rather than what has worked elsewhere, is the key.

In attempting to understand foreign cultures and practices, avoiding racial stereotypes is absolutely necessary. Remarks of that nature degrade and demean vast groups of people without merit. However, it would be equally harmful to dismiss cultural differences as inconsequential to doing business in another country. China defies definition in many respects. As a country beginning its way through global economic markets, many issues will surface which cannot even be predicted. What is predictable, however, is that China represents a vast, largely untapped pool of resources and opportunities. Recent attempts by dozens of countries on several continents to normalize trade relations with China support the assertion that opportunity for investment exists.

WHY CHINA?

A typical hourly floor employee in Silicon Valley makes about \$12-14 dollars per hour. In other concentrated areas of electronics manufacturing, the hourly wages are slightly less. In China, however, a typical SMT engineer (a person with the task of operating, programming and trouble-shooting machines that are worth half a million to one million dollars) earns about 2-3 dollars per *day*. The difference in profit margins is obviously understandable. Furthermore, with a population of 1.3 billion people and a strong push by the Chinese government towards movement away from dependence on an agrarian lifestyle, there are plenty of workers eager to join the industry. Many, in fact, have college degrees and have discovered that paying their dues at this level is the only way to someday make use of their advanced degrees.

To encourage business investment and growth, the Chinese government decided to create Special Enterprise Zones (SEZ). These zones (of which there are now 5) are vast areas, within which businesses that have decided to locate are granted tremendous benefits. The concept began in 1980 and has produced enormous industrial cities seemingly overnight (**See notation below).

The incentives will be reviewed later, but first some of the obstacles and other unique characteristics associated with China will be discussed.

Language

This seems like a very obvious obstacle. Operating in any foreign country is difficult when the issue of translating between languages becomes a daily task. China is no different in this respect. Translating between Chinese and English is difficult even in the most basic of social and business scenarios. Communicating about issues related to high-tech manufacturing is more tedious. Sometimes the subtleties inherent to both languages create misleading dialogues when each party is trying to use the other's language. For example, an operations manager was once trying to determine the cause for a particular process defect on the floor. He showed the part to various people and asked, "How?"

What he did not realize was that the word *how* means “good” in Chinese. Earlier he had been teaching acceptability and had used the words *good* and *bad*. When he said “how”, they either agreed with him and said yes or disagreed and said no. Neither answer ended his quest to discover the cause of the problem. On another occasion, this same operations manager became enraged when he received an email from his Chinese counterpart suggesting that he had “ignored” certain test requirements during a product test. What the email intended, however, was to note that he had “forgotten” to perform the tests.

Further compounding difficulties with language is an internal factor. China is a vast country, and each of the provinces uses a different dialect that is frequently not understood by its neighbors. As a result, vendor issues become more complex, as clarification is often difficult to ascertain by verbal communication.

Chain of Command

Another challenge is to understand the function and importance of the chain of command in Chinese companies. Chinese managers and supervisors often find themselves “stuck in the middle”, especially if directives are coming from US counterparts. A quality manager once found that any sort of directive or change was always tested by subordinates in order to ensure that it did not conflict with their supervisor’s directive. This same quality manager made the mistake of asking a question to his Chinese counterpart in front of some of his subordinates. He thought that the answer was so obvious that it would give the Chinese manager a chance to shine in front of his people. Much to his horror, the manager gave the wrong answer. The quality manager was now faced with the awkward situation of trying to correct the Chinese manager’s mistake without any loss of face.

If discretion seems like the proper course of action when faced with changes in policy and procedure, understanding how directives will be received is also important. If one’s position carries special power or prestige, judicious authority must be applied carefully. “Soft stepping” on issues that have a direct bearing on a product’s manufacturability is not appropriate. If the potential consequences demand strict actions, strict actions must be taken. Subsequent resistance (if any) is not personal. It is more complex.

Issues of Logistics

The procurement of supplies, equipment, specialized tools and materials can be difficult due to several issues. The fact is that shipping greater distances increases the possibility of loss, damage, and misrouting. In one particular instance, a company waited weeks for a testing unit to arrive from Texas. When it reached the facility, the large wooden crate looked as though it had been dropped, dragged, pushed, pulled and kicked for the entire 8000-mile distance. The outside of the crate had been opened using an axe (apparently by Customs agents), but the real damage was to the precision, half million-dollar machine, which was bent and twisted. The company that shipped the machine could not even imagine the force necessary to accomplish such damage. The machine had to be re-packaged and shipped back to Texas, delaying production for weeks. To make matters worse, it was impossible to trace the cause of the damage. If it had occurred during the Customs inspection, the company was told, “Too bad.”

The resulting insurance investigation was eventually settled, but it was an expensive lesson. As a precaution, the company required all future shipments of that nature to have “viewing” holes for the Customs agents to see through. They also recommended a more rigorous pre-shipping procedure to ensure shipments would survive the distance and rough ride often encountered.

There is also the added dimension of accuracy when shipping or receiving in China. It is often necessary to weigh individual components of a shipment. If the combined individual weights do not match the total, major problems will likely occur with Chinese Customs.

Supply-chain issues are further complicated when both US and foreign vendors are involved. Problems with specific dimensional and packaging data can stop a project in its tracks. Trying to establish mutually beneficial supplier relationships is always desirable; however, this is often not possible when language and cultural barriers exist. As a result, material planning and logistics become more difficult to forecast and manage.

SO WHY CHINA?

Considering all the obstacles mentioned so far, one might conclude that operating a manufacturing facility in China isn't worth the enormous effort. However, there are still many significant benefits associated with operations in China that outweigh the drawbacks.

First, as previously mentioned, the labor rate is a fraction of the cost of similar US-based operations. In fact, countries even with extremely low labor costs (Mexico, Hungary, Philippines, et al.) cannot compete with China. Secondly, the quality of the work is typically equal to or superior to that which is produced elsewhere. Chinese SMT workers are fast learners and show a dedication to quality that is unparalleled. From a simple labor perspective, China is also able to assign large numbers of employees to a project when the 11th hour arrives. Overtime is usually a negligible factor to consider since the labor rate is already less expensive. And finally, the fact that China has long been noted for its ability to "reverse engineer" allows for further savings with tooling and other machine-related issues. Often parts can be fabricated on site (or at least within the country), thus saving thousands of dollars.

Although the current political climate in China appears uncertain at times, and troubles with Taiwan could certainly spell trouble in the future (many "Chinese" companies are actually Taiwanese-owned); it appears that the Chinese government recognizes the necessity of foreign investment. Generally speaking, the government supports a strong business development strategy that has not even scratched the surface in terms of potential growth and profit for investors.

***The Shift*

In the 1980's, China's leaders began addressing the problem of too many agrarian-based occupations. Though vast, China's fertile lands are conservatively estimated to comprise less than 15% of the total land area. Much of the country is desert, barren, cold and incapable of sustaining agricultural activities. It was decided that there should be a concerted effort aimed at moving people to the cities. To many, this seemed implausible. How could a country that has difficulty feeding its people move large numbers of the workforce away from the food producing areas? Surprisingly, the plan has been successful on several fronts. Farmers, once relegated to handing over their crops are now permitted a certain degree of free enterprise. The result of which has been a slow increase in a middle class. Post-secondary education also became more available. As a result, many Chinese citizens possess degrees. This bloom in education has facilitated the transition to a more technologically focused generation.

Cities such as Shenzhen (located about an hour and a half from Hong Kong) have seemingly appeared over night. Huge downtown areas lined with skyscrapers and US-based companies like McDonald's, Pizza Hut and Kentucky Fried Chicken are located throughout the city. Large-scale manufacturing areas are generally located in industrial "towns" in the vicinity of Shenzhen. Many companies offer dormitory living for their employees. Sometimes these facilities house several thousand workers as part of vast industrial parks (reminiscent of Guadalajara, Mexico). The obvious advantage for companies with a wide range of manufacturing abilities (tooling, plastic injection, fabrication, etc.) is apparent when one notes the success of these industrial parks in other countries.

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