

THE MAINLAND MIRAGE

Electronics firms face four major challenges in making their mainland China dreams come true

FOR THE PAST DECADE, electronics firms have been establishing manufacturing facilities in China, hoping to take advantage of low-cost labor and capture a share of China's growing market for electronics products. The personnel costs are undeniable; a well-paid engineer in China pockets well under \$10,000 a year. And there's no

question that it's a big market for electronics; sales of semiconductors in China grew to \$17 billion in 2002, a hefty 18% to 20% yearly growth since 2000, according to the Semiconductor Industry Association.

Cheap labor, growing market. An electronics manufacturer's paradise, right? Well, maybe not. Just ask Cisco. In January 2003, Cisco Systems Inc., San Jose, CA, filed a lawsuit against Chinese network equipment maker Huawei Technologies Co. Ltd., of Guangdong, and its subsidiaries, claiming that the Chinese had unlawfully copied and misappropriated Cisco's software, source code, documentation and other copyrighted materials and infringed numerous Cisco patents. Or ask United States-based PC makers. IBM Corp., Hewlett-Packard Co. and Dell Computer Corp. (among others) have all built manufacturing facilities in China, hoping to gain access to one of the

fastest-growing PC markets in the world. However, despite massive investment from U.S. firms, Chinese PC manufacturers dominate the domestic market (see chart "2002 PC Market Share in China," page 42).

This is not to say that some electronics companies haven't been successful in China. Intel Corp., Santa Clara, CA, for instance, receives more revenue from China than from any other non-United States country—\$3.2 billion in 2002. However, other electronics firms are finding it's not always easy doing business behind the bamboo curtain: According to Professor of Management, at the University of New Haven, Usha Haley, coauthor of the newly published *Asia's Tao of Business: The Logic of Chinese Business Strategy* (John Wiley & Sons), 70% of the companies doing business in China have never made a profit there.

Geoffrey James



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U.S.-China Business Council, an organization of U.S. corporations engaged in business relations with China

Given that, the value of China may currently be more of a mirage than a reality. To keep their goals earthly rather than ethereal, according to experts, electronics firms need to consider the following four key challenges when moving manufacturing to mainland China:

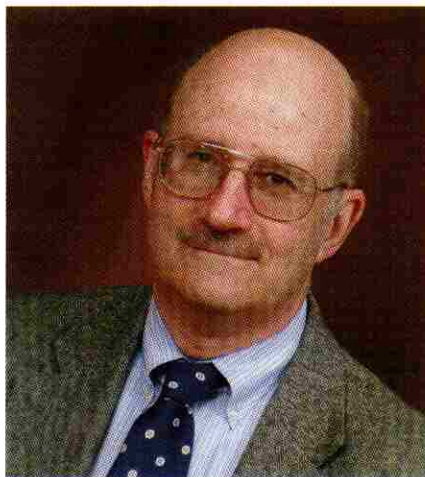
CHALLENGE #1:

Government favoritism toward local electronics manufacturers

Electronics executives often assume that opening a local manufacturing facility is a stepping stone to expanding sales in China. Although this strategy may work well in other regions, it is not always effective in China, because the policy of the Chinese government is specifically to foster Chinese-owned electronics manufacturing businesses. To the Chinese government, any attempt by multinational firms to dominate electronics product sales in China automatically smacks of neocolonialism. “The rich countries of the world are greedy, and unless China encourages its own high-tech development, the gap between rich and poor will continue to expand, creating social instability,” insists Professor Jia Baohua, of the Beijing Foreign Trade and Economic University.

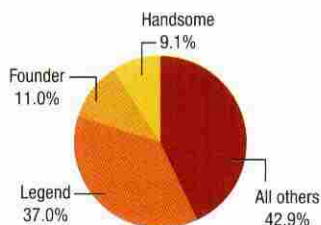
The Chinese government prefers to see Chinese-owned electronics businesses as exporters of technology and intellectual property to the rest of the world, according to Cheng Siwei, deputy commissioner of the National People’s Congress (NPC), who helps set government policy in the technology sector. “China has become an electronics manufacturing giant,” he said at a rare appearance, at an economics conference in Beijing in 1999. “The last thing China wants to do is merely provide manufacturing labor for the rest of the world.”

The Chinese government tolerates foreign investment in the electronics sector because it rightly believes that this is the quickest way to bootstrap its domestic high-tech businesses. The prototype



for success, from the viewpoint of the Chinese government, is **Legend Group Ltd.**, Hong Kong, which originally partnered with the United States-owned **AST Research Inc.**, Irvine, CA, to build a PC business in China. (For more on Legend, see *EB*, “Extending Legendary Success,” May 15, 2003, page 52.) Today, AST is defunct, but its erstwhile partner Legend is the largest PC manufacturer not only in China but also in the entire Asia/Pacific region, according to

PC MARKET SHARE IN CHINA, 2002



SOURCE: CHINA GENERAL CHAMBER OF COMMERCE

market research firm Gartner, Stamford, CT. It’s a success story the Chinese government would love to see repeated in every sector of the electronics business.

Although the Chinese government appears to encourage foreign investment in a wide range of electronics manufacturing, its not-very-hidden agenda emerges in the form of market tilting and regulations that encourage local businesses and consumers to “buy Chinese,”

according to Dr. James Mulvenon, deputy director of RAND’s Center for Asia-Pacific Policy, in Santa Monica, CA. “The days are over when Chinese will buy Western equipment just because it’s supposed to be better than locally manufactured products,” he warns.

When China joined the World Trade Organization (WTO), it promised to open its markets to foreign goods. However, U.S. demands to actually implement a level playing field often result in Chinese complaints about the tariffs the Bush administration slapped on steel imports. “The Chinese are brilliant at playing the ‘he who is without sin cast the first stone’ game,” says Bob Kapp, president of the U.S.-China Business Council, an organization of U.S. corporations engaged in business relations with China.

CHALLENGE #2:

Lax IP laws

When China joined the WTO, it also promised to implement laws that would protect the intellectual property of multinational firms. However, IP piracy remains rampant, a situation that’s unlikely to change as long as it gives a competitive advantage to Chinese firms.

The Cisco/Huawei brouhaha is a case in point. If Cisco’s charges are true, then Huawei used Cisco IP to bootstrap a worldwide router business, selling in direct competition with Cisco and at much lower prices. “Huawei has unlawfully copied Cisco’s intellectual property and refused Cisco’s numerous attempts to resolve these issues,” fumes Mark Chandler, Cisco’s vice president and general counsel. “As a result, Cisco has no choice but to protect its technology and the interests of its shareholders through legal action.” (Despite repeated calls, Huawei declined to comment.)

Cisco’s dilemma is just a highly visible example of the perils of doing business in China, according to Haley. “Whenever a new electronics product is introduced in China, knockoffs appear

almost immediately, and that inevitably lowers prices in the domestic market," she says, adding that China didn't even have patent laws until 1990.

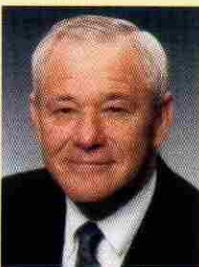
Not every electronics firm is complaining about IP theft, though. "We have no more concerns about intellectual property in China than elsewhere in the world," says Chuck Malloy, corporate spokesman for Intel's Technology Manufacturing Group. That view is not surprising, considering that Intel could be considered a beneficiary of lax Chinese IP enforcement. China has a growing market for PCs in part because prices are artificially low, given that most are sold without software licenses. More than 90% of the business software sold in China is bootlegged, according to the Software and Information Industry Association (SIIA), thereby keeping prices low and driving sales of Intel's CPU chips.

However, Intel might sing a different tune if some Chinese-owned semiconductor firm reversed-engineered the Pentium 4 chip and began selling it worldwide at a fraction of Intel's price, according to Dave Mack, president of Technology Business Research, Hampton, NH. "The intellectual property risk in China exists for all companies, and most especially for Intel," he says, "Domestic Chinese PC manufacturers will eventually decide they're not willing to pay a premium price for Intel chips." Mack points out that the fab technology required to clone Intel's midline CPU chips already exists in China. "It's a matter of when the local PC vendors choose to cut Intel out of the deal, rather than whether they will or they won't."

Every electronics firm is at risk until China strengthens the enforcement of intellectual property law, says Gary Weaver, senior vice president of operations for the U.S. PC division of Tokyo-based Toshiba Corp., in Irvine, CA, which sources its PCs in (among other places) Taiwan and China. "Everybody in this industry has some concern about the theft of intellectual property," he says, citing his own company as an example of a firm that moves cautiously in the region. "Toshiba looks at multiple factors and understands the risk before deploying any manufacturing facilities in China," he says.

Know before you go: four rules to follow

INVESTING IN CHINA can be a successful manufacturing strategy, according to Gary Weaver, senior vice president of operations at Tokyo-based Toshiba Corp.'s Computer Systems Group (CSG), Irvine, CA. Currently



responsible for helping build a manufacturing strategy that includes a major Chinese facility, Weaver was previously senior vice president of worldwide manufacturing for AST Research Inc., with operations in the United States, Taiwan, China, Hong Kong and Ireland. Here's his advice:

RULE #1: Do your homework. It's critical to choose partners in China that can really deliver and won't steal your intellectual property. "Toshiba

has learned that it takes time to build the kind of relationships that lead to profitability."

RULE #2: Limit expatriate involvement. Although you'll need a multination team to set up operations, the goal should be to move them out as soon as possible. "The ideal is to be able to monitor progress from headquarters but empower the local employees to deliver the product."

RULE #3: No eggs in one basket. The threat of political instability and epidemics makes it crucial for electronics firms to have alternative sources of supply. "If anything goes wrong with our China plant, we have sources of supply in the Philippines and Taiwan, as well as local assembly capabilities in the United States and Germany."

RULE #4: Be patient. China may be a challenging business environment today, but it may settle down in years to come. "We saw the same thing in Taiwan in the late 1970s. It takes time for a third-world country to develop the legal infrastructure to become a full participant in globalization."—G.J.

But stricter enforcement of IP laws may not happen anytime soon, according to Haley. "China has a very old culture, and intellectual property simply isn't a part of it," she says. "The Chinese see intellectual property as something that should benefit society, not the individual." There's also the pressure of poverty in the region. Indeed, with an average yearly wage of around \$1,000, Chinese firms look askance at the notion of paying royalties to rich multinational firms. "The Chinese feel that a lack of financial resources is sufficient justification for copying products and ideas that don't belong to them," says Carolyn Jacobs, president of Business English Consultants in Exeter, NH, a firm that helps Chinese engineers understand American business practices.

CHALLENGE #3:

Government corruption and secrecy

Given the threat of intellectual property theft, few decisions are more important

to an electronics firm than selecting appropriate corporate partners for supply chain and distribution. However, electronics firms often find the forging of these business relationships difficult, according to Tim Bennett, senior vice president international at AeA (formerly the American Electronics Association). "One of the biggest challenges in performing your fundamentals in making investment decisions related to supply chain, design chain and distribution is getting valid information about potential partners," he explains. It turns out that Chinese firms often have no publicly available credit records and may have "off-the-record" debts to state-owned banks.

In addition, because many Chinese business are either state-owned or formerly state-owned, political hacks within their management structure may have jiggered performance statistics to meet politically inspired production quotas or hide employee theft. To make matters worse,

“Chinese courts at all levels are notoriously corrupt and susceptible to both cash payments and political pressure.”

—Tim Bennett, senior vice president, AeA

setting up a manufacturing facility in China typically requires approvals and sign-offs from hundreds of petty local bureaucrats. The only way to overcome such roadblocks is to develop something that's known locally as “*guanxi*,” roughly translated as “connections.” In practice, *guanxi* often involves subtle (and sometimes not-so-subtle) forms of bribery.

Because the 1988 Foreign Corrupt Practices Act bars U.S. firms from such practices, they must often depend on the services of a *compradore*, a local representative who handles cash presents and other “favors.” However, the use of *compradores* is, in itself, hazardous, because “you never know what deals the *compradore* is making on the side,” says Mulvenon. China is full of “entrepreneurs” who speak good English and claim to have the *guanxi* to help electronics firms work the local bureaucracy. In many cases, however, such individuals simply



disappear with the money they get or use it to build their own businesses, according to Bennett. Any attempts to get redress in local courts are wasted effort, because Chinese courts almost always favor local interests. “Chinese courts at all levels are notoriously corrupt and susceptible to both cash payments and political pressure,” says Bennett.

CHALLENGE #4:

Health care's impact on supply chains

As of this writing, the city of Hong Kong, the most important center of business in China and a key link in many electronic firms' supply chains, is under virtual quarantine, due to the outbreak of Severe Acute Respiratory Syndrome (SARS). It is no accident that this epidemic originated in China, where unsanitary conditions, combined with the close proximity of humans and animals, have frequently given rise to flu-like viruses. Epidemics pose a major threat to electronics manufacturing, because most firms have a just-in-time supply chain model. Such manufacturing strategies are inherently fragile, and China-deployed electronics firms are already feeling the pain of missed deliveries and exhausted inventory.

“What's particularly troubling about the SARS situation is that the Chinese government tried to cover up the prob-



lem," says Mulvenon. He feels that the disease might have been contained if Chinese officials had moved quickly to quarantine the first cases. However, the old-school Communist habit of official secrecy is apparently difficult to expunge. "Their first instinct was to cover their own butts," he says.

Even after SARS has come and gone, the threat of a future epidemic is likely to increase the cost of doing business in China. Most non-Chinese firms maintain a staff of expatriate executives and engineers to oversee facilities and to make certain that local business partners fulfill their commitments. Expatriate executives typically expect access to health care facilities on a par with those in the United States, as well as living conditions that fall within Western norms of sanitation. In the wake of SARS and the subsequent cover-up, electronics firms can expect expatriate executives to demand secluded living environments that limit contact with the local population.

That will add to the already astronomical cost of expatriate housing in

China. The rent for a three-bedroom, 1,400-square-foot apartment in a "Western-style" suburb of Beijing can run as high as \$7,000 a month, according to economist Jing An, who

COST OF GOODS FOR ELECTRONICS PRODUCTS MANUFACTURED IN CHINA	
2001	\$79 billion
2006	\$176 billion
SOURCE: ELECTRONIC TREND PUBLICATIONS	

has performed extensive financial analysis on Beijing real estate. The extra expense of supporting an expatriate community already makes it difficult for an electronics manufacturer to compete against local firms, according to Mulvenon. "Chinese domestic competition can undercut multinationals 30 to 40 percent, merely because they don't have to maintain the lifestyle of their expatriate employees," he warns.

Although these four challenges are substantial, there's little sign that they're slowing the migration of elec-

tronics manufacturing to China. "There is now \$50 billion a year in direct foreign investment in China, much of it in the field of electronics," says Kapp of the U.S.-China Business Council. It would also be a big mistake to assume that moving manufacturing to China is always a bad idea. Indeed, if companies make the move carefully and intelligently, it can be quite profitable (see sidebar, "Know before you go," page 44). However, it's an equally big mistake to see China as a paradise where success is guaranteed. Even though China combines a cheap labor force with a large potential market, electronics executives must never forget that what looks like an oasis in the distance sometimes turns out, on closer examination, to be a mirage.

What's your experience been in China? Good? Bad? Let us know by sending e-mail to feedback@eb.reedbusiness.com

Geoffrey James regularly contributes to EB's Electronic Design Automation column.



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