6

INTEGRATIVE CASES

In this chapter, the objective is to discuss cases that draw on the frameworks and perspectives developed throughout the casebook and that include important issues from each of the earlier chapters.

GM IN CHINA

For GM China, the year 2004 brought a wide variety of new challenges that added to an already complex business environment. The industry structure was changing quickly. Demand and supply projections for motor vehicles had promised substantial increases in sales and profits, but suddenly the optimism faded. China's new membership in the World Trade Organization (WTO) created expectations of "a level playing field" for foreign investors, but—at least in the short run—major barriers remained. Government intervention persisted, particularly the requirement of a joint venture partner, competition from government-owned assembly firms, and arbitrary rules such as sector-specific credit restrictions. Violation of intellectual property, with the copying of foreign automobile designs and the false branding of parts, was an ongoing threat. Meanwhile, inflation was increasing, and the government was unsure whether and how to use monetary and fiscal policies. Of great importance, the government had purposely kept the renminbi undervalued for many years. Pressures were building for the government to change its foreign exchange rate policy, but a higher renminbi would suddenly decrease GM China's international competitiveness.

INTEL'S SITE SELECTION DECISION IN LATIN AMERICA

Intel decided to locate its next assembly and testing plant in Latin America. Four countries had made the short list: Brazil, Chile, Mexico, and Costa Rica. Ted Telford, International Site Selection Analyst for Intel, needed to recommend a final site. There were two key issues that had to be resolved first: (a) What kind of business environment was most

suitable to Intel's needs, and (b) how could Intel leverage its bargaining advantages most effectively? The case illustrates the advantages for a high-technology company such as Intel, with its strong need to operate in a country with stable, predictable rules of business and to invest in a fully consolidated democracy.

The Acer Group's China Manufacturing Decision

The Acer Group is one of the world's largest PC and computer component manufacturers. The vice president of Global Operations was pondering whether the timing and environment was conducive for Acer, based in Taiwan, to commence full-scale manufacturing operations in the Chinese mainland. Students are asked to examine the criteria on which Acer should base its decision to manufacture overseas and, in so doing, create the framework for a corporation's global manufacturing strategy. The teaching objectives also include having students consider the political, economic, and societal environments of a global manufacturing strategy.

GM In China[1]

Prepared by Danielle Cadieux under the supervision of Professor David Conklin

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> We have an enviable position in the world's fastest-growing automotive market, China, where investments in the mid- and late 1990s have paid dividends far larger and sooner than anyone predicted. Our unit sales in that market increased 46 per cent last year, and we increased our market share.[2]

> A leap over the cliff: are the big profits to be made in China blinding foreign carmakers to the risks ahead? A flood of investment is causing concern that the industry will soon be vulnerable to overcapacity. There are also longer term doubts about the rules by which Beijing expects manufacturers to play.[3]

Challenges in China

Founded in 1908, GM was the world's largest vehicle manufacturer, with 15 per cent of the global vehicle market and manufacturing operations in 32 countries. Beginning in 1992, GM created many joint ventures with Chinese government-owned enterprises, and by 2004, GM had attained outstanding profit levels. However, by the fall of 2004, a series of issues threatened GM in China, and several of these issues raised doubts about GM's strategy. China's entry into the WTO had led many to hope that the government's interventionist policies would come to an end. However, in 2004, the government of China promulgated a series of rules in regard to the motor vehicle sector, making it clear that intervention would be ongoing. Of particular concern was the continuing requirement that foreign ownership of assembly factories would be limited to 50 per cent, requiring a government-owned enterprise as an equal partner. Meanwhile, intellectual

property was not being protected in the way that automakers had come to expect in other countries, causing concerns about Chinese competitors copying the models and designs of foreign corporations.

While sales growth had been truly exceptional, there were many reasons to doubt that the rapid pace could continue. Furthermore, huge investments by competing firms would result in substantial increases in production volumes, threatening a reduction in prices and consequently in gross margins and profits. As part of its macroeconomic policies, the government of China arbitrarily imposed restrictions on automobile financing as a way of restraining inflation, but this sector-specific intervention introduced a wild card into demand projections. Having kept the foreign exchange rate at an overvalued level for many years, it now appeared that the government might allow the exchange rate to rise substantially, and this could severely reduce the international competitiveness of China's vehicle manufacturers. The degree to which Chinese production facilities could be used as a low-cost export base remained an important and related question.

At the same time, the government faced a series of questions in regard to the policies it should put in place for the motor vehicle sector. Through its regulations, the government had consistently played a major role in directing the growth of the sector. In particular, its requirement for 50 per cent Chinese ownership of each manufacturing investment constrained investment and managerial decisions by foreign firms. However, it was not clear what rules could best provide for China's future economic success. Many developing countries had imposed foreign ownership restrictions, but had later reduced or eliminated these restrictions in order to stimulate investment and economic growth. Perhaps China would also follow this path. By 2004, inflationary pressures were building, and the government imposed credit limitations to restrain purchases of vehicles, raising the question of the appropriate role for sector-specific intervention as a component of China's macroeconomic policies. Meanwhile, air pollution was becoming extremely severe, and the road system was becoming increasingly inadequate. These developments, as well, meant that government interventions to limit pollution and to expand the road system would be important determinants of future motor vehicle sales.

GOING TO CHINA

By 2004, GM had about 10,000 employees in China, and it operated six joint ventures and two wholly owned foreign enterprises. GM had participated with its joint venture partners in investments of over $2 billion in China. With a combined manufacturing capacity of 530,000 vehicles, GM and its joint ventures offered the widest portfolio of products among foreign manufacturers in China. GM's major joint venture partner, SAIC, had been founded in 1956, and, by 1997, had grown to become China's largest manufacturing plant. As presented in GM company reports, these joint ventures consisted of the following:

Shanghai General Motors Co. Ltd. (Shanghai GM)

Shanghai GM was a Shanghai-based 50–50 joint venture with Shanghai Automotive Industry Corporation Group (SAIC). The largest automotive joint venture in China, Shanghai GM was formed in June 1997 with an initial planned investment of $1.3 billion and an annual production capacity of 200,000 vehicles while operating on three shifts. Shanghai GM assembled and distributed a family of Buick midsize sedans, the Buick GL8 executive wagon and the small-size Buick Sail. Shanghai GM began producing engines in 1998. Its powertrain facility had an annual production capacity of 180,000 V-6 engines, 75,000 L-4 engines and 100,000 automatic transmissions.4 Shanghai GM was supported by a network of sales, aftersales and parts centres.

SAIC-GM-Wuling Automobile Co. Ltd. (SAIC-GM-Wuling)

SAIC-GM-Wuling was a $99.6 million joint venture launched in November 2002 and capable of producing up to 180,000 vehicles per year. GM held a 34 per cent stake, while SAIC held 50.1 per cent and Wuling Automotive 15.9 per cent. This joint venture was situated in Liuzhou, in western China, and it manufactured a range of mini-trucks and minivans.

Shanghai GM Dong Yue Motors Co. Ltd.

Dong Yue Motors Co. Ltd. was a $108 million joint venture manufacturing facility situated in Yantai, Shandong. Shanghai GM held a 50 per cent stake, with GM China and SAIC each holding 25 per cent stakes. The facility began production of the Buick Sail in April 2003 and had an annual designed production capacity of 100,000 units while operating on two shifts.

Shanghai GM Dong Yue Automotive Powertrain Co. Ltd.

Dong Yue Automotive Powertrain Co. Ltd. was located in Yantai, Shandong in northeastern China. The joint venture was the former Shandong Daewoo Automotive Engine Co. Ltd., which began production in August 1996. Under an agreement signed in 2004, Shanghai GM would own 50 per cent of the new joint venture, while GM China and SAIC would each own 25 per cent. The facility would have an annual manufacturing capacity of 300,000 engines, providing engines for vehicles manufactured in China by GM and SAIC's joint ventures.

Jinbei General Motors Automotive Co. Ltd. (Jinbei GM)

Jinbei GM manufactured the Chevrolet Blazer SUV. In 2004, a new shareholder structure was put in place, with Shanghai GM holding a 50 per cent stake, while GM China and SAIC each held 25 per cent stakes. Located in Shenyang, Liaoning, Jinbei GM's production capacity was 50,000 vehicles.

Pan Asia Technical Automotive Center (PATAC)

PATAC was a $50 million, 50–50 joint venture between General Motors and SAIC. It provided automotive engineering services including design, development, testing and validation of components and vehicles. Among its achievements was the reengineering of the Buick Regal, Buick Excelle and other products for Shanghai GM.

GM Warehousing and Trading (Shanghai) Co. Ltd.

GM Warehousing and Trading was located in Shanghai's Waigaoqiao Free Trade Zone and represented a $3.2 million investment by GM. The wholly owned parts distribution centre (PDC) officially started operation in August 1999. It was established to ensure the quick delivery of genuine GM and AC Delco parts to customers in mainland China. The PDC featured a fully computerized management and inventory control system and stocked about 25,000 different parts.

GM (China) Investment Corporation

GM China was a wholly owned venture based in Shanghai. It housed all of GM's local staff and was the investor in GM's vehicle joint ventures in China.

Sales, marketing and aftersales services were key functions of GM China. Cadillac, Opel and Saab products were imported from GM facilities worldwide and were marketed in China. GM China also supported a network of authorized service centres and parts distributors across China.

GM-Shanghai Jiao Tong University Technology Institute

GM-Shanghai was a co-operative institution established by GM and Shanghai Jiao Tong

University, focusing on joint research and development and on technical training.

General Motors Acceptance Corporation (GMAC)

GMAC was one of the world's largest automotive financing companies, serving more than eight million customers in 35 countries. In 2004, the government of China gave it permission to operate in China, and it was actively seeking to develop local partnerships.

ACDelco

ACDelco, the world's leading aftermarket brand, operated a growing network of more than 100 ACDelco service centres in mainland China. The facilities, which stocked genuine ACDelco parts, provided repair and maintenance services for all makes and models of vehicles.

Allison Transmission Division (ATD)

ATD was the world's largest producer of automatic transmissions for medium- and heavy-duty trucks, buses and specialty vehicles. ATD was working with Chinese original equipment makers and end-users to upgrade the quality of its medium and heavy commercial vehicles.

Electro-Motive Division (EMD)

EMD was recognized as a world leader in the design and manufacture of locomotive equipment and technology. EMD operated a representative office in Beijing that established links with China's railway industry.[5]

Shanghai GM had introduced a series of new products in China:

- In April 1999, Shanghai GM began regular production of three models of midsize luxury sedans: the Buick Xin Shi Ji (New Century), Buick GLX and Buick GL.
- In May 2000, Shanghai GM launched the driver-oriented Buick GS sedan and the first executive wagon made in China, the Buick GL8.
- In August 2000, a sedan with a smaller engine, the Buick G, was added to the portfolio.
- In December 2000, Shanghai GM's first small car, the Buick Sail, came off the production line.
- In October 2001, Shanghai GM began exporting the GL8-based Chevrolet Venture to the Philippines.
- In November 2001, Shanghai GM introduced the Buick S-RV recreational vehicle.
- In November 2002, Shanghai GM announced that it had secured a contract with GM's CAMI joint venture in Canada to export engines beginning in 2003.
- On December 26, 2002, the Buick Regal midsize sedan was introduced.
- On April 19, 2003, Shanghai GM unveiled the Buick Excelle, its first lower-medium sedan.[6]

Industry Structure: Competition and Profitability

In 2004, sedans represented 44 per cent of motor vehicle sales in China, with trucks at 30 per cent and buses at 26 per cent. In was in the sedan component that growth promised to be most rapid and where profits appeared to be most substantial. In 2003, Volkswagen had dominated the sedan market with a 36 per cent share. However, by June 2004, GM and its joint venture partners were selling more sedans than Volkswagen, with their joint ventures accounting for 40 per cent of the total sedan market.

By 2004, GM was earning exceptionally high profits from its China operations:

> China is no longer merely a market of great potential.
>
> It's now the real McCoy, where global companies with the right partners and strategies can and do reap huge profits.
>
> The proof is on page 37 of General Motors Corp.'s 2003 report to the federal government called a 10-K under the heading "Investment in Nonconsolidated Affiliates." Right there, for the first time ever, GM publicly revealed how much profit it is raking in from its vehicle-making ventures in China.

> The number was a big one: $437 million last year. And that's only half of the profit from GM's four joint-venture plants in China, which sold 386,710 vehicles. The other half of the profits went to the Detroit automaker's Chinese partners.
>
> For some perspective, look at the numbers this way:
>
> Figure that GM and its Chinese partners had a combined net profit of nearly $875 million, or about $2,267 per vehicle sold in China.
>
> In North America, GM's net profit last year was only $811 million on sales of 5.6 million cars and trucks in the United States, Canada and Mexico, or about $145 per vehicle.
>
> That means GM China was nearly 15 times more profitable, per vehicle sold, than GM North America.
>
> "GM is making money hand over fist in China, selling cars as fast as they can make them, at very attractive prices," says Kenneth Lieberthal, a University of Michigan professor and China expert who was senior director for Asian affairs on the National Security Council under President Bill Clinton. "All of the other car markets of the world are either mature or they're poor."[7]

While GM had achieved outstanding results to date, nevertheless a plethora of competitors were fighting for market share. In 2004, China had more than 200 carmakers. Most were relatively small Chinese firms, and these domestic firms, solely owned by the government, had a 40 per cent market share. Exhibit 1 indicates market shares as of June 2004. The government was reluctant to see its motor vehicle manufacturers eliminated by the new joint venture firms. How to support their existence while also attracting foreign technology and managerial skills posed serious challenges at this point in time. As one analyst saw the strategy of domestic firms:

> With Japanese and U.S. technology battling it out for the top, the only hope for domestic carmakers without joint venture partners is to capture the bottom end of the market, then begin the slow ascent up the price-and-sophistication ladder. That's the path chosen by BYD, the former bombmaker. The Flyer retails for about $4,700, making it affordable to the 50 million Chinese earning at least $7,000 a year, whom the government considers middle class. "Look around my office," says Liu, the BYD general manger. He has one dusty filing cabinet, bare whitewashed walls and a view overlooking the decrepit former bomb factory. "We can get by on the slimmest profits."[8]

This industry structure created great uncertainty about future prices. The domestic firms did not have shareholders demanding certain profit levels, and so they might strive to maintain their market share by cutting prices. Furthermore, an ongoing temptation for them was simply to copy the designs and technologies that were being introduced by the new joint venture firms. Meanwhile, foreign competitors were jostling to increase their investments in this fast-growing market, a process that would further intensify price competition. Already, over the 2001–2004 period, prices had fallen 25 per cent. Analysts

Shangahi VW	15%
Shanghai GM	11%
FAW VW	11%
GZ Honda	5%
Tianjin FAW	5%
Changan Suzuki	5%
Beijing Hyundai	4%
Geely	5%
Chery	4%
Dongfeng Citroen	4%
Others	31%

Exhibit 1 Market Shares by Manufacturer

Source: "China's Automotive and Components Market 2004," KPMG, September 2004.

expected prices to continue to fall at a rate around 10 per cent a year.[9]

Uncertainties of Demand and Supply Projections

Some analysts extrapolated the exceptionally high growth rates of the 1999–2003 period to arrive at projections of enormous sales volumes. China's auto sales had climbed from some two million units in 2000, to more than three million units in 2002, to 4.4 million vehicles in 2003. China's rapid economic growth supported the view that an increasing number of Chinese would be able to purchase cars in the future. Exhibit 2 presents data in regard to China's economic growth, and Exhibit 3 indicates the very unequal income distribution as a result of which the top 20 per cent of China's population would soon be able to afford automobiles.

Based on this optimism, some analysts predicted:

> China is on track to overtake Japan "in a couple of years" to become the world's second biggest vehicle market, according to John Devine, General Motors' chief financial officer, in the U.S. vehicle maker's latest bullish assessment of the mainland.
>
> Mr. Devine said GM expected the market to maintain double-digit growth "for some time" on the back of continuing economic growth, cheaper cars and the approval of vehicle financing for three foreign manufacturers.

	1999	*2000*	*2001*	*2002*	*2003*
GDP at market prices (Rmb bn)	8,206.60	8,946.80	9,731.50	10,479.10	11,975.80
GDP (US$ bn)	991.4	1,080.7	1,175.7	1,266.1	1,446.9
Real GDP growth (%)	7.1	8.0	7.5	8.0	9.3
Consumer price inflation (av; %)	(1.5)	0.4	0.7	(0.8)	1.2
Population (m)	1,250.50	1,261.80	1,273.10	1,284.30	1,295.20
Exports of goods f.o.b. (US$ bn)	194.7	249.1	266.1	325.7	438.3
Imports of goods f.o.b. (US$ bn)	(158.7)	(214.7)	(232.1)	(281.5)	(393.6)
Current-account balance (US$ bn)	21.1	20.5	17.4	35.4	45.9
Foreign-exchange reserves excl gold (US$ bn)	157.7	168.3	215.6	291.1	408.2
Total external debt (US$ bn)	152.1	145.7	170.1	168.3	189.1
Debt-service ratio, paid (%)	11.7	9.3	7.8	8.1	4.6
Exchange rate (av) Rmb; US$	8.3	8.3	8.3	8.3	8.3
Inward FDI (US$ bn)	38.8	38.4	44.2	49.3	53.5

Exhibit 2 China Annual Indicators

Source: EIU Report, China, September 2004.

a. Actual.

b. Economist Intelligence Unit estimates.

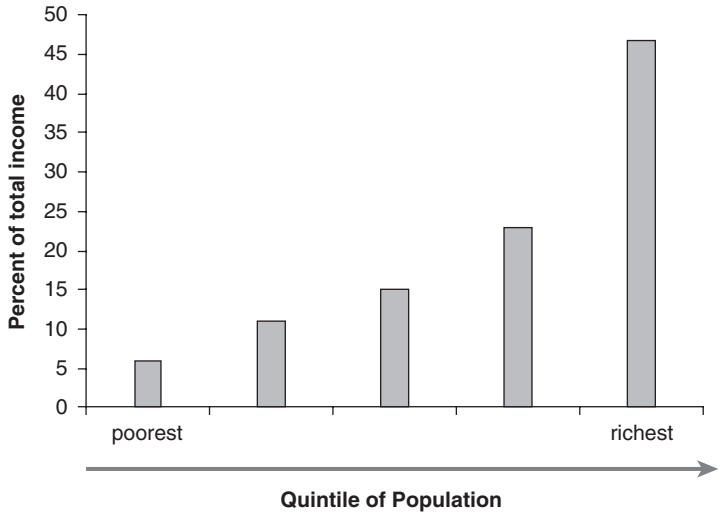

Exhibit 3 China, Income Distribution

> GM China sold 386,710 vehicles in China last year (2003) through its various joint ventures, up 46 per cent on 2002. Saloon car sales increased 82 per cent year-on-year.[10]

For the motor vehicle sector, the year 2004 witnessed an abrupt end to the 50 per cent annual sales growth of the previous years. Some of the best-selling models experienced particularly sharps decreases, as customers shifted to less expensive automobiles. For some models, September 2004's sales dropped more than 50 per cent from the September 2003 level. Analysts pointed to a series of new forces: a loss of consumer confidence, expectations of further vehicle price decreases, the threat of oil shortages and higher gasoline prices, government rationing of power supplies, and the government's abrupt imposition of credit restrictions for automobile financing. Long-term constraints included a very poor highway system—in fact, one analyst suggested that "China has no national highway system."[11] Driving was basically restricted to the roads within each city. Air pollution had become a major concern, and this could also limit China's motor vehicle growth. "According to the World Bank, China has 16 of the world's 20 most polluted cities,"[12] resulting in 300,000 premature deaths annually due to respiratory disease. As a result of these new developments and long-term constraints, analysts claimed that foreign investments that had once appeared to be enormously successful might now be open to question.[13] In the third quarter of 2004, GM saw its profits in China drop 44 per cent to US$80 million.[14]

> Over-capacity will be a major factor within two years, with the passenger car market—already the single most important sector within the Chinese vehicle market—likely to be at the forefront.
>
> Paul Brough (managing partner of KPMG's financial advisory services practice in China) continued: "We are already seeing the first outward signs of the pending over-capacity. Average car prices in China have already fallen by seven per cent between January and June this year (2004). A lot of this can be attributed to manufacturers looking to grab early market share through aggressively low pricing. In addition, rising inventory levels are also forcing price reductions on older models as businesses look to clear stock levels."

> "Further over-capacity will see increased price pressures on sedans as well as lower prices and margins. Taking the reasoning to its ultimate extreme also raises the fear of some new production facilities becoming real white elephants as capacity is inevitably scaled back at some point."[15]

As noted above, the intensification of competition was resulting in price cuts that would inevitably reduce profit margins. Furthermore, it was not clear whether certain supply constraints might limit the expansion plans of China's automakers. In August 2004, a Financial Times article pointed to a decrease in car production of 20 per cent compared with the previous month, and noted that, "This is forcing a rethink among multinational and local carmakers about their multibillion-dollar expansion plans in China."[16]

First Mover Advantage in Creating a Value Chain

The industry structure of parts suppliers had a similar dual nature. On the one hand, the joint venture enterprises initiated by foreign parts suppliers brought modern technologies and managerial practices. On the other hand, domestic firms pursued traditional practices that resulted in poor quality components and that lacked innovation and ongoing product development. A persistent temptation for domestic firms was to label their parts falsely, claiming them to be the genuine products of firms with brand-name recognition. A foreign assembler had to create an efficient value chain capable of creating vehicles that would be consistently high quality. Just-in-time delivery practices faced real challenges in China.

> The joint venture operations many of the Tier 1 suppliers have set up very little in terms of technological sophistication and part quality between what they do in China and the rest of the world, says Guy Bouchet, a vice-president with A.T. Kearney. He recently returned to Chicago after spending five years in China. The rest of the local supply base is a different story. It's fragmented, and there's a wide spectrum of capabilities, qualifications and quality, he says. Some of these suppliers understand the multinationals' requirements and are ready to play the game. Others aren't so willing or able.
>
> "Late-comers run the risk of not being able to lock in business relationships, in whatever form, with the highest-capability guys," says Bouchet. "You have to tap into a second tier who are not as good, which means that your investment in terms of training, in terms of revamping the assets, are higher, which has an impact on your return on investment and your short-term competitiveness."[17]

New Opportunities with Sales Financing

In 2004, China's four state-owned banks held more than 80 per cent of China's outstanding automobile loans, while the automobile manufacturers had been prohibited from extending loans as part of their sales programs. In August 2004, General Motors became the first overseas automaker in China to be allowed to issue car loans to its purchasers. GM had created a new joint venture for its financing operations, with 60 per cent owned by General Motors Acceptance Corporation (GMAC) and 40 per cent owned by SAIC. Analysts expected that this expansion would greatly increase GM sales. Other automakers had also applied for permission to offer auto loans, but GM had a head start. Overseas banks such as Citigroup Inc. and HSBC faced a delay of several years before they would be allowed to offer loans denominated in yuan to Chinese purchasers. GM now enjoyed a brief window of limited competition.

However, GM's finance operations faced certain restrictions. Initially, GM could lend as much as 90 per cent of the car's price tag, but this percentage could be reduced by government regulation as a mechanism for restraining demand in time of inflation. Furthermore, China's central bank determined the interest rates to be charged on local currency loans; GM would not be allowed to set its own rates.

POST-WTO CHALLENGES: THE PERSISTENCE OF GOVERNMENT REGULATIONS, TRADE AND INVESTMENT RESTRICTIONS, AND VIOLATION OF INTELLECTUAL PROPERTY PROTECTION

WTO Provisions

Prior to joining the World Trade Organization (WTO), China had imposed exceptionally high tariffs on motor vehicles and components, and has also imposed import quotas for certain products. China was granted a transition period in tariff reductions, with a decrease from levels of 80 per cent to 100 per cent down to 25 per cent by 2006. Import quotas were to be phased out by 2005. In the past, the government had also imposed local content requirements in order to support domestic suppliers of components, but these also were to be eliminated. In addition, the government had intervened to dictate the types of vehicles that foreign companies manufactured, with production licences as a requirement. With the WTO, foreign companies received greater independence in production decisions, and by 2004, they were free to distribute whatever products they wished. While China maintained its 50 per cent domestic ownership requirement for assembly plants, the government did eliminate its joint venture requirements for the production of engines.

Some analysts predicted that these WTO reforms would give foreign companies valuable new opportunities. In particular, foreign companies would be able to import certain segments of their product mix, while focusing their China production on a limited product range, thereby capturing greater economies of scale. This would mean that foreign companies could rationalize their product mix globally, and China's place in global production would depend on its inherent competitiveness. Meanwhile, the domestic firms would face heightened import competition, as would component manufacturers.

> These market-opening commitments are expected to bring considerable challenges—and opportunities—for both Chinese and foreign automakers. For Chinese companies, the challenges will likely outweigh the opportunities. Reduced tariff and non-tariff barriers will allow high-quality, inexpensive foreign vehicles to flood the domestic market. China's small and inefficient auto companies will probably be unable to compete with well-established multinational competitors.[18]

Persistent Government Intervention

In June 2004, the government of China proclaimed its new version of rules concerning foreign investment in China's vehicle sector. Exhibit 4 presents KPMG's summary of these rules and their implications. Some rules were unchanged from the past, but overall the June 2004 proclamation represented an ongoing intervention that carried uncertainty with it. For example, in discussions about formulating these rules, analysts had warned of the possibility that the government might impose new rules to support technology development in domestic companies. In particular, a policy option being debated was that 50 per cent of all sales in China by 2010 would have to come from domestic companies that would own 100 per cent of a vehicle's technology. An additional proposal was that any foreign company that owned 10 per cent or more of a Chinese company would be compelled by law to share its expertise in research and development, production and sales. The 2004 rules did not include these provisions, but the possibility remained that similar provisions might be imposed in the future to enhance Chinese ownership of technology.[19]

CHALLENGES OF THE JOINT VENTURE REQUIREMENT

China's requirement that foreign investors enter joint ventures with domestic firms was a position held by many developing country governments in the mid-to-late 20th century. It was generally accepted throughout the world that foreign direct investment (FDI) led to some degree of loss of control by host country governments over their economies. This loss of control was seen as a

Policy	*Policy Maker*	*Impact*
Foreign Ownership	Foreign Ownership will remain limited to 50 per cent	Although China obtained an exemption from the WTO on rules that ban limits placed on foreign investment, many auto manufacturers were hoping China would eventually relent: this does not appear to be the case
Number of Joint Ventures	The number of joint ventures a manufacturer is allowed to establish remains at two per vehicle segment (sedan, bus and truck)	This regulation gives domestic manufacturers more opportunity to develop their own technology and production bases by increasing the barrier for foreign manufacturers
Minimum Investment Size	A minimum investment of RMB2 billion (US$241 million) is required	The restriction on investments increases the market entry barrier in China
Manufacturing Licence Transfer	Licence transfer from existing vehicle production companies to non-automotive enterprises is not permitted	The policy makes it more difficult for non-automotive companies to diversify their business into the fast growing automotive market in China
Domestic Sourcing and Production	From 2005 (no specific date mentioned), imported vehicles can no longer be stored in bonded warehouses in China Certain imported parts will be subject to the same level of import tariffs as complete vehicles (currently, tariffs on imported cars are 30 per cent to 38 per cent, while tariffs on parts range from 10 per cent to 23 per cent) Cars with major subassemblies (e.g. chassis, engine) that are imported may be taxed as imported vehicles	Import duty on vehicles will be payable upon entry to China An increase in local manufacturing and sourcing is expected, foreign automotive manufacturers are likely to continue to step up efforts to identify local sources of parts in order to have price competitive products This is already forcing some automakers to further localize their vehicles
Research & Development (R&D)	R&D expenses will be tax deductible in the future	This policy is expected to continue to encourage foreign companies to establish domestic R&D centres as well as encourage local R&D activities and the development of local intellectual property, for example • GM has already established its own R&D centre in Shanghai • At present, Nissan and Dongfeng Motors are building a new R&D centre in Guangzhou, which will be ready at the end of 2005

Exhibit 4 KPMG Summary of 2004 Motor Vehicle Rules

cost to the host country and to its government. Transnational corporations (TNCs), with international production and distribution networks, had the flexibility to respond more quickly to changing conditions in all the countries in which they operated than did domestically owned firms. If, for example, a host country's real exchange rate rose, a TNC could reallocate production to a cheaper source of supply in another country. A domestically owned firm might not have this option, or, if it did, it might exercise it less quickly. A similar situation existed with many of the major policy variables under government's command. Governments might lose control over their ability to raise taxation rates, wage rates and labor conditions, interest rates and so on for the fear of the reaction of TNCs in their investment and production decisions.

Many believed that TNCs had very different goals for their operations in host countries than did the host country governments. TNCs could also be subject to pressures from a number of sources, and these sources might be outside the influence of host country governments. Consequently, a degree of tension was introduced when foreign investors were permitted to enter the private enterprise system. Not only were TNCs seen as trying to control the operations of their firms in the best interests of their stockholders, but these stockholders were located outside the host country. Put another way, foreign investment implied that some form of direct control was exercised from outside the country. As well, those for whose benefit the control was being exercised also resided outside the host country. Moreover, TNCs were seen as being responsive to the policies and goals of the government in their home country (and other countries in which they operated) and these goals and policies might not be in the best interests of the host country.

Based on all these rationales, host country governments wished to be able to exercise a degree of control over foreign investors relative to domestic investors in order to align their operations more closely with the goals of the country. General restrictions on foreign investors were an attempt to lodge some degree of control with domestic entities, either host country nationals or, in some cases, the government itself. However, being the foreign partner in a joint venture raised many difficult challenges.

> Under the best of circumstances, joint ventures can be difficult to manage. They've gone out of fashion among U.S. auto companies because the interests of the individual parties frequently diverged before the ventures had run their course. What's worse is that SAIC owns 50% of each joint venture by government regulation and gets half the votes when decisions are made. That's normally a recipe for frustration and deadlock.
>
> Asked how disputes get resolved when neither party has a tie-breaking vote, SAIC president Hu says: "When we have different ideas, we close doors and argue against each other. It is okay to lose your temper as long as the door is closed." He adds that he has learned a few things about conflict resolution between different nationalities. "Americans have more flexibility than the Germans, who are very serious once they make up their mind," he says.[20]

Of central concern was the risk that the domestic partner might create an alternative production facility and compete against the joint venture. Or the government of China might arbitrarily dissolve the joint venture and encourage SAIC to purchase GM's interest in the joint venture. Nationalization of GM's interest seemed an extreme possibility but one that could not be completely ruled out. If any of these developments were to occur, GM might now be creating its own worst enemy—and not just in China, but perhaps globally. Nothing would prevent SAIC from exporting to GM's markets throughout the world.

> Some China experts believe the joint ventures will be unwound once the Chinese are capable of competing on their own. "Foreign automakers should be afraid of domestic competition-very afraid," wrote economist Kroeber. "In sector after sector, foreign manufacturers have piled into China only to see their technology copied and their prices

> undercut with alarming speed by domestic competitors operating with government support. Chinese firms have picked up technology much faster and kicked foreign competitors out of the market far faster than anyone predicted."[21]

And by 2004, SAIC had already shifted into initial stages of competition against GM:

> The boldest plans belong to SAIC. In the next three years, SAIC aims to make 50,000 vehicles bearing its own brand; in 2003, the company produced fewer than 3,000 of its own vehicles. By 2010, SAIC wants to be among the world's top 10 auto makers, according to Xiao Guopu, a vice-president of SAIC.[22]

In 1978, China had begun its gradual transition from central planning and state-owned enterprises to private ownership in a market economy. It was possible that the joint venture requirement with a government-owned partner might be eliminated in the future. If so, GM would face the strategic issue of whether to attempt to purchase the domestic partner's interests in the joint ventures. The government would face the strategic issue of how to privatize and whether it should retain a "golden share" with veto rights over certain managerial decisions. In Germany, for example, the state of lower Saxony held a "golden share" in Volkswagen that gave it power to override the board should it decide to shift jobs out of Germany.

Protection of Intellectual Property

A major conflict between GM and Chery illustrated the threat that domestic firms could copy designs and technologies of the foreign investors. GM created production facilities for a new small car, the Chevrolet Spark, with a planned price of $7,500 and a production date of December 2003. However, before it could begin its sales campaign, one of the local Chinese automakers, Chery, began selling a $6,000 version with many similar features. GM was faced with an important challenge in protecting its intellectual property.

> The dispute drags GM into the murky waters of intellectual property-rights protection in China, an arena that has snagged makers of sneakers and other goods that saw Chinese companies mimic their wares. The GM complaint is complicated by the fact that Chery is 20% owned by GM's main joint venture partner in China, Shanghai Automotive Industrial Corp. GM and SAIC make Buick sedans in Shanghai, as well as cars at two other plants elsewhere in China.

Yet, as GM's dispute shows, these companies could face a vexing battle.

GM was not alone in seeing a clone suddenly appear from a domestic manufacturer. Toyota also experienced this challenge:

> When Geely, China's largest private carmaker, launched its Meiri saloon, it made certain to advertise one of the vehicle's big selling points—its Toyota engine, installed under licence from the Japanese company.
>
> Toyota perhaps could have lived with that, but not with the Geely logo plastered on the Meiri's front grill, which, it considered, looked suspiciously like the stylized T-shape that brands the Japanese company's vehicles globally.
>
> Similar—but not so much that potential purchasers would be misled—ruled Beijing's Second Intermediate Court this week, throwing out legal action mounted by Toyota for alleged trademark infringement.[23]

Ongoing Risks in China

A KPMG Survey in 2004 revealed serious concerns held by foreign investors in China. These ongoing risks threatened GM as well as foreign investors in other sectors:

- Forty per cent of those surveyed agree that government regulations posed a significant challenge to their expansion plans.
- Eighty per cent of companies surveyed said that Intellectual Property Rights infringement posed a significant threat to their businesses in China.

- Nearly 25 per cent of those surveyed agree that they overestimated the potential of the Chinese market, and a further 16 per cent even admitted they wrongly believed they would get rich quick.[24]

KPMG listed the most prominent mistakes made when investing in China. By working with a joint venture partner, GM had been able to avoid many of these mistakes, and this reality placed a strong positive value on GM's relationship with SAIC.

1. Failure to appreciate the differences in the Chinese market. Companies that focus solely on the largest, high-profile coastal cities may miss out.
2. Failure to appreciate the ferocity of domestic competition. Before 1949, the Chinese were known for entrepreneurship. Since 1978, these trading talents have been reviving, and local companies will go head-to-head with foreign concerns.
3. Investment information can be difficult to get and may not be reliable.
4. Failure to appreciate and understand cultural differences. In China many common Western cultural and economic paradigms do not apply. . . . Contracts are certainly not worthless in China, but their significance is not as great as they are in the West.[25]

Macroeconomic Policies

As Exhibit 2 indicates, China had experienced five years of very rapid growth, ranging from seven per cent to over nine per cent annually, without experiencing any significant inflation. In fact, in the years 1999 and 2002, China's general price level appears to have fallen. However, with the year 2004, analysts throughout the world became increasingly concerned about the possibility of rapid inflation in China, and the government of China shared this concern. Essentially, there was a substantial increase in aggregate demand due to higher consumer incomes, increased levels of exports and substantial foreign investment. At the same time, there appeared to be new constraints on global capacity to produce natural resources necessary for the burgeoning Chinese manufacturing sector. World prices for natural resources, and particularly oil, were skyrocketing, and this threatened to drive up cost levels and, therefore, prices in China.

> Inflation in China has become a growing concern to bankers, corporate executives and monetary officials around the world.[26]

> Rapid growth—especially with regard to infrastructure improvements—has turned China into a major oil and commodity importer. With commodity prices rising, and its currency pegged to the low-flying dollar, China's import costs have soared. Overall, prices for raw materials and energy in China jumped 8.3 per cent in the first quarter of 2004, while overall input costs for China's manufacturing increased by 4.8 per cent. Other inflationary pressures facing China are its rapidly growing money supply and a new generation of hyperactive consumers whose spending drove up retail sales by 10.7 per cent in the first quarter of 2004.[27]

In response to these pressures, the government of China instituted policies to restrain demand in specific sectors that seemed to be overheating. The motor vehicle sector became one of the targets for this restraint, and the government imposed restrictions on loans made to finance the purchase of motor vehicles.

In other nations, inflationary pressures were often met with monetary and fiscal policies, but the government of China felt constrained in its ability to use these economy-wide measures. The government lacked experience in both fiscal and monetary policies and had not yet developed the many systems on which these policies relied. To raise taxes as a means of restraining aggregate demand, for example, would be a novel exercise with unclear results. It seemed to be an inappropriate time to reduce government expenditures, when the growth process had been so successful. China required new infrastructure expenditures, particularly for the rapidly growing cities along the coast, but also for huge inland projects like

the Three Gorges project that would be necessary to generate hydro-electric power. At the same time, tens of millions of people were drifting into unemployment, both with a shift of population from rural areas to the cities and also with extensive employee lay-offs as enterprises strove to increase efficiency—both publicly owned enterprises and the increasing number of privatized firms. The threat existed of both inflation and unemployment, creating a difficult choice in macroeconomic policy direction.

Monetary policy offered limited hope because of the fragile state of the banking system and because of the loss-making, state-owned enterprises. To restrain credit and raise interest rates on an economy-wide basis might cause a financial and business collapse. In October 2004, the government did experiment in monetary policy by raising interest rates 27 basis points (a basis point is one one-hundredth of a per cent). The world's media immediately erupted with concerns. The Financial Times ran a front-page headline that read, "China rate rise sends markets into a spin. Central Bank's first move in nine years hits commodity prices and stocks around the world."[28]

> The government's short-term priority is to slow the current rapid rates of GDP growth without triggering a damaging hard landing for the economy. To this end, tightening measures have been targeted rather than broad-based, aimed at cooling particular types of spending in individual industries—notably investment expenditure in the real-estate, steel, aluminum and cement sectors—rather than the economy as a whole. Specifically, the government has raised reserve requirements for banks, and imposed administrative limits on lending to and investment in the offending sectors.
>
> This focus on the ability of banks to supply funds is sensible. China's capital markets are still immature, so it is largely banks that are financing the current bout of overheating. Of course, the authorities could try to ease demand for funds by raising interest rates, but this would probably not just be ineffective but even counter-productive. The sharp rise in bank credit to particular sectors appears to be based not purely on the low cost of capital but on relationships at local levels between government officials, banks and companies. Arguably, a sharp rise in interest rates would end even some of this lending, but such a change would also discourage investment in sectors that are not currently overheated.[29]

Another force underlying the inflationary pressures was the decision of the government to peg the renminbi to the U.S. dollar. As Exhibit 2 indicates, China was experiencing a positive current account balance as well as huge capital inflows. In a freely floating foreign exchange market, the demand for the Chinese currency would have driven up the value of the renminbi. However, the government wished to maintain an undervalued currency in order to stimulate its exports and restrain imports. Here again, the basic motivation was a political need to create millions of jobs and to expand the economy. The government was able to keep the renminbi pegged to the U.S. dollar by selling the renminbi on the foreign exchange market in return for U.S. dollars and other currencies that it then accumulated as an increase in its reserves.

As Exhibit 2 indicates, China's foreign exchange reserves increased from US$158 billion in 1999 to US$408 billion in 2003. The government of China used these reserves to buy bonds, to a large degree in the United States, a process that enabled the United States to maintain low interest rates in spite of its large US$400 billion to US$500 billion fiscal deficit. This process also increased China's money supply and thereby created an additional inflation threat. Other nations that followed a policy of maintaining an undervalued currency could deal with the resultant inflationary threat through a tight money policy that would restrain aggregate demand. But, as noted above, there were political and economic reasons for being concerned about the impacts of such monetary restraint.

Some analysts felt that China's macroeconomic policies had painted the country into a precarious position in terms of impending inflation and the difficulties and dangers of fiscal and monetary restraint. An additional element in this situation was the concern of other governments

that China's policy in maintaining an undervalued currency was causing job losses in their countries. This was a widespread concern in the United States, where it seemed that China's macroeconomic policies were causing the "offshoring" of U.S. jobs at a time of relatively high U.S. unemployment. Some administration officials—particularly the U.S. Treasury Secretary, John Snow—publicly urged the government of China to allow its currency to rise in value. By the fall of 2004, the U.S. dollar had devalued substantially against the euro, and this meant that the Chinese renminbi had devalued by a similar percentage against the euro. Consequently, it was likely that European government leaders would soon add their voices to that of the United States in calling for an upward revaluation of the renminbi. Without such action, it was possible that governments in North America and Western Europe might impose new import restrictions on goods from China in order to protect their nations' jobs.

For GM and other foreign investors in China, the undervaluation of the renminbi had offered protection against competitive imports. In this sense, the undervaluation of the renminbi had acted as the tariff, supporting their initial business enterprises. By the fall of 2004, however, the threat of the revaluation of the renminbi and/or the threat of new protectionist measures on the part of foreign governments had created new concerns about the appropriate China strategy. The danger of a financial crisis and economy-wide depression, though remote, seemed a possibility.

> All this though, has raised a burning question. Is China's boom, like those in 19th century America, merely the precursor of an imminent bust? Or is it the harbinger of a more sustainable economic take-off? The lack of consensus is striking.
>
> Despite the optimism that attends China's foreseeable economic future, there are a couple of scenarios under which Beijing's best laid plans could be thrown off-course.
>
> The first concerns the possibility of shortages of coal, electricity, raw materials, port and rail capacity coalescing into an inflationary trend. If this happened, the central bank would have to raise interest rates and the renminbi would probably appreciate.
>
> Eventually, either an ill wind or a surfeit of domestic success will cause China's stellar phase of growth to abate or crumble—just as it has in every emerging economy in history. When that day comes, the fallout may be spectacular.[30]

China as an Export Base

Analysts were pointing to China's low labor costs and rapidly improving skill levels as the basis for motor vehicle exports. Many saw China as a new global player in the sector at a time when there was already a world glut of production facilities. China had the potential to disrupt existing global production and marketing patterns. Here as well, GM was quickly approaching a crossroads. Should it stand by while its partner SAIC and others created a vibrant export base, becoming GM competitors throughout the world? Or should GM take the initiative and use its China facilities to export to North America and Europe? How should China fit in GM's global strategy? It appeared that Honda had already made the strategic decision to use China as an export base:

> First, the home market. Next, the world. China is poised to become a significant car exporter as production standards rise and costs fall.
>
> With Honda's new plant, there's a difference: The cars rolling off its assembly lines by early next year are heading not for the Chinese market, but to Europe—the first big push by a foreign carmaker to produce in China for export.
>
> If successful, Honda's Guangzhou venture will be a significant demonstration of the ability of China-based manufacturing to climb the value chain. Specifically, it would signal China's debut as a car exporter, based on what Tim Dunne of Automotive Resources Asia, a car industry consultancy, describes

as the "marrying of Japanese manufacturing efficiency with cheap labor in China." Production costs at Honda's Guangzhou plant are expected to be 20% lower than those in Japan, say factory officials.[31]

The Way Ahead

The government of China had created a motor vehicle strategy that had attained outstanding initial success. Domestic firms lacked design capability, modern technologies and managerial capabilities. Allowing foreign investors to create joint ventures with domestic firms had quickly overcome these challenges. By 2004, the question had arisen as to whether this strategy should be modified. What should be China's next steps in its motor vehicle strategy?

For GM, predicting these next steps would be critical in determining its corporate strategy. In many respects, the business environment it faced was changing dramatically. New competitors from abroad and heightened competition from domestic firms were influencing the industry structure. Demand and supply projections seemed subject to great uncertainties. Its joint ventures with SAIC had been extremely profitable for both partners, but should GM trust this relationship to continue indefinitely? In Thailand, where GM had substantial assembly operations, there were no joint venture requirements. Meanwhile, India had a population nearly as large as China's, as well as low wages and optimistic growth forecasts. Should GM diversify its China risks by investing heavily in India and other Asian countries?

Notes

1. This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of General Motors or any of its employees.

2. General Motors Corporation Annual Report 2005.

3. J. Mackintosh and R. McGregor, "A Leap Over the Cliff," *Financial Times,* August 25, 2003, p. 13.

4. www.autointell-news.com/News-2002/November-2002/November-2002–1/November-06–02-p10.htm, accessed October 20, 2004.

5. www.gmchina.com/english/news/background/inchina.htm, accessed October 20, 2004.

6. www.gmchina.com/english/operations/shgm.htm, accessed October 20, 2004.

7. T. Walsh, "GM's China bonanza," *Detroit Free Press,* accessed March 30, 2004. http://www.freep.com/money/business/walsh30_20040330.

8. M. Forney, "Moving too Fast? *Time,* V. 163, I. 8, February 23, 2004, A6.

9. "Here be Dragons," *The Economist,* September 4, 2004, p. 10.

10. Richard McGregor, "GM to focus on growing China market," *Financial Times,* February 12, 2004, p. 20.

11. Mark Graham, "Paddy Fields to Full Production," *Industry Week,* November 6, 2000.

12. "Special Report on China's Environment: A Great Wall of Waste," *The Economist,* August 21, 2004, p. 56.

13. Peter Wonnacott, "Slower Growth Fuels Anxiety," *The Wall Street Journal,* October 21, 2004, B13.

14. Richard McGregor, "Carmakers Changing Plans as Chinese Sales Fall Off," *Financial Times,* October 16, 2004, p. 2.

15. "Significant Over-capacity to Hit Chinese Car Market within Two Years," www.kpmg.com/search/index.asp?cid=753, accessed August 27, 2004.

16. Richard McGregor, "Chinese Car Output falls by 20%," *Financial Times* August 25, 2004, p. 13.

17. David Drickhamer, "Balancing Act," *Industry Week,* February 2004 V. 253, I. 2, 49.

18. Allan Zhang, "China's WTO accession: Implications for the auto sector," www.pwc.com/servlet/printFormat?url=http://www.pwc.com/extweb/newcloth.nsf/docid/F117 826, accessed May 14, 2004.

19. Leslie P. Norton, "A Bumpy Road for Foreign Auto Makers in China," *Barron's,* June 23, 2003, V. 83, I. 23, MW12.

20. Alex Taylor III, "Shanghai auto wants to be the world's next great car company," *Fortune,* October 4, 2004, V. 150, I. 7, 103.

21. Ibid.

22. Peter Wonnacott, "Global Aims of China's Car Makers Put Existing Ties at Risk," *Wall Street Journal,* August 24, 2004, B1.

23. Richard McGregor, "Chinese Law Courts Make their Marque," *Financial Times,* November 28, 2003, 20.

24. www.kpmg.ca/en/news/pr20040608.html, accessed July 2, 2004.

25. "Consumer markets in China—the real deal?" KPMG international, 2004, *www.kpmg.com.cn/pub.htm?id=669.*

26. "Inflationary Pressures Rising Fast in China," *Taipei Times,* April 10, 2004, 12.

27. J. Kurtzman, "Is China Going the Way of Brazil?" European Business Forum, Summer 2004, I. 18, 95.

28. Alexandra Harney, "China Rate Rise Sends Markets into a Spin," *Financial Times,* October 29, 2004, 1.

29. "China Country Report," *EIU Report,* August 2004, www.eiu.com.

30. J. Kynge, "The Chinese boom is bound to end in tears. But it might not end for another 10 years . . . with Bumps Along the Way," *Financial Times,* March 24, 2004, 13.

31. David Murphy, "Driving Ambition," Far Eastern Economic Review, May 27, 2004, V. 167, I. 21, 28.

THUNDERBIRD
THE GARVIN SCHOOL OF INTERNATIONAL MANAGEMENT

INTEL'S SITE SELECTION DECISION IN LATIN AMERICA

Prepared by Professor Roy Nelson based on his interviews and field research in Costa Rica, Brazil, Chile, and Mexico in Fall 1998

Ted Telford faced a dilemma. As the only full-time member of Intel Corporation's worldwide site selection team, he had to make a recommendation about where Intel should locate its first manufacturing plant in Latin America.[1] After months of analysis, involving both desk research and numerous field trips to potential country locations, the site selection team had narrowed the choice to four countries: Brazil, Chile, Mexico, and Costa Rica. All were attractive in different ways, but now it was October 1996, and Ted had to write his final report for the headquarters office in Santa Clara. Headquarters would want his recommendation and evidence to support it. He shifted uneasily in his chair. At stake was a long-term investment decision involving $300-$500 million, a substantial amount of money even for a company like Intel, with over $20 billion in annual revenues. Ted hunched over his files, and began reviewing the data one more time.

INTEL AND THE SEMICONDUCTOR INDUSTRY

Microprocessors are the brains of personal computers. They are composed of millions of microscopically small transistors—essentially, tiny electronic switches—grouped and interconnected with each other on individual chips of silicon to store and manipulate data.2 This is why microprocessors are often referred to as chips, as in "the Pentium II chip." Computer software enables microprocessors to perform specific functions with

the stored data. As a result, microprocessors today are found not just in computers, but in virtually any inanimate object that can "think" (be programmed to perform certain tasks): traffic lights, cars, cellular telephones, airplanes, etc.

This enormous range of applications for microprocessors spawned a huge industry—the semiconductor industry—with well over $120 billion in sales in 1995, and a projected growth rate of over 20% per year.3 Intel, as the first company in the world to introduce microprocessors in 1971, quickly established a dominant position in this industry and, in 1996, remained the dominant player with over 85% of microprocessor sales worldwide.

Although Intel had a number of competitors, the company invested billions each year in Research and Development (R&D) in order to retain its lead in innovation and design of new chips. As a result, Intel was constantly introducing faster and more powerful microprocessors in order to stay ahead of the competition. Intel's former CEO, Andy Grove, noted that in a high-technology industry such as semiconductors, "only the paranoid survive."[4]

The contrast between Intel's first microprocessor, the 4004, with only 2,300 transistors, and the one it planned to assemble and test in the proposed Latin American plant, the Pentium II—with over 7.5 million transistors—illustrated this dramatic rate of growth in computing power. Gordon Moore, one of Intel's founders, highlighted the fast-paced nature of competition and innovation in the semiconductor industry when he devised his famous "Moore's Law": driven by competitive market forces, the power of microprocessors will double every 18 months. This law had been fairly consistent with developments in the industry, and Intel had been leading the way since the beginning.

Given the speed of developments and growth in the industry, Intel needed to open a new plant at a rate of almost one every nine months.[5] Doing this, as well as maintaining high levels of spending on R&D, was very expensive—a serious disadvantage when the company had to deal with competitors who could imitate its product designs, then offer similar products at lower cost. Clearly, if Intel wanted to remain competitive, it could not pass on these costs to consumers in the form of higher prices. Early on, then, Intel's management realized that the company would have to build at least some plants in countries where costs (especially labor costs, which in assembly and testing facilities amount to between 25–30% of total costs) would be lower than in the United States.[6]

Intel's first overseas plant was built in Malaysia in 1972. Later plants followed in Israel, the Philippines, Ireland, and mainland China. But now, in 1996, Ted knew that there was a sense among management that the next plant should be in Latin America. Excessive investment in one region could create risks. For example, although Intel's plant in Malaysia had been productive for many years, in 1996 the plant faced problems resulting from a shortage of qualified labor. As a result, turnover among employees was approaching 30–40%, training was becoming expensive and difficult, and salaries were rising. It made sense to diversify the geographic location of the plants. The company already had a number of plants in Asia, but absolutely none in Latin America. The region offered relatively low labor costs, as well as logistical advantages for exporting production to the U.S. or Europe.[7]

Intel's Proposed Latin American Plant: Characteristics

Ted knew that the plant Intel had in mind would be an assembly and testing facility, rather than a more sophisticated fabrication plant ("fab"). Still, when it came to making microprocessors, assembly and testing was an involved, complex process, requiring significant technical and engineering expertise, clean rooms, advanced knowledge of chemical processes, and considerable expense. The site selection committee already knew that the plant or plants would employ about 2,000 technicians and engineers initially; this number would eventually increase to 3,500. It would also require the participation of significant numbers of expatriate personnel for extended periods, at least during the startup phase.

While all of these considerations would influence the site selection process, the size of the selected country's market would be irrelevant. This was because Intel planned to export 100% of the product assembled and tested at the plant; almost all of that would be going to the United States.

The Site Selection Process, Phase 1: Desk Research—and Costa Rica Makes the Short List

As Ted reviewed the data before him, he reflected on the long, highly systematic site selection process. It had all started with several weeks of desk research. During that time, a group of Intel employees had gathered as much information as they could on a long list of countries in Latin America. The group gathered data on such issues as political and economic stability, labor unions and labor regulations (a particular concern of Intel's), infrastructure, and the availability of an educated workforce (after all, the plant would need trained technicians and engineers).

After this desk research, Ted had been able to eliminate some countries altogether. Venezuela, for example, seemed to be too unstable financially; the desk research phase quickly ruled it out as a serious candidate. But three countries stood out as seeming to have necessary conditions for Intel's planned investment: Mexico, Chile, and Brazil. Costa Rica was added later.

Ted recalled that Costa Rica had *not* been on the original short list. It was only after officials at *Coalición Costarricense de Iniciativas para el Desarrollo* (CINDE, Costa Rica's Investment Promotion Agency) had given presentations to Silicon Valley executives in late 1995 about Costa Rica's potential as a center for high technology investment that Intel executives in California had considered this possibility.

CINDE had been created in 1982 with financial assistance from the United States Agency for International Development (USAID). Its original purpose was to serve as a private, nonprofit export promotion center. Its Board of Directors was (and still is) composed almost entirely of businessmen from the Costa Rican private sector. CINDE was a collaborative effort between USAID and civic-minded businessmen in Costa Rica to promote nontraditional exports (in Costa Rica, this meant anything that was *not* bananas or coffee) and enhance economic development in Costa Rica.

At the time CINDE was created, the Reagan administration was hoping to strengthen the private sector in Central America and the Caribbean to prevent the spread of political instability in these regions. The Administration's Caribbean Basin Initiative (giving preferential access to the U.S. market for manufactured goods from Central America and the Caribbean) was one way to do this. USAID's creation of CINDE was a separate policy but was consistent with the overall strategy.[8]

Over the years, especially after the end of the Cold War in the early 1990s and the fall of the Sandinista regime in Nicaragua in 1990, USAID reduced its funding to Costa Rica and finally closed its offices in the country in 1996. CINDE, with new funding from the World Bank and a trust fund of its own to finance its activities, continued—but with a different emphasis.

Following advice from a consultant with the highly successful Irish Development Authority (IDA)—Ireland's investment promotion agency—as well as from the World Bank, CINDE's directors realized that they should focus on promoting investment from specific firms in specific industries.[9] Professors at the *Instituto Centroamericano de Administracíón de Empresas* (INCAE), Costa Rica's premier business school, gave CINDE similar advice. Founded by Harvard University, INCAE was influenced by Harvard professor Michael Porter, a frequent visitor to the school and a close adviser to Costa Rica's president, Jose Maria Figueres (himself a Harvard graduate). INCAE recommended that CINDE pursue Porter's idea of promoting clusters of firms in particular industries as a way to accelerate national economic development.[10]

In a detailed study, the World Bank recommended to CINDE that it should target the electronics industry.[11] The Bank argued that the level of technical education in Costa Rica, and the number of electronics firms already located there, made it a suitable location for attracting a

number of companies and creating clusters of firms in this industry. Others in CINDE had already made similar arguments, but the World Bank study confirmed these views.[12]

While not a government organization itself, CINDE was fortunate that it had support for its plans at the highest levels of government. Costa Rica's President, Jose Maria Figueres (1994–98), was very interested in promoting high-technology investment in Costa Rica.[13] Educated at West Point (with later graduate study at Harvard), Figueres had a vision of making Costa Rica a haven for high-technology investment. He believed very strongly that the country would be left behind in its quest for economic development if it remained principally an exporter of bananas and coffee, with only some manufacturing investment in low-tech, low-wage, low-value-added industries such as textiles. Costa Rica's gradual increase in Gross Domestic Product (GDP)/ capita, education levels, and living standards, combined with the end of political unrest in neighboring Central American countries, had already resulted in a migration of investment out of Costa Rica's textile sector. New investment in this industry was going to countries like Nicaragua, where wages were much lower.

Clearly, changes in the world economy meant that Costa Rica would have to change its strategy, as well. As Figueres explained his government's plan:

> We wanted to incorporate Costa Rica into the global economy in an intelligent way. Globalization was more than simply opening the country to foreign trade. We needed a national strategy not based on cheap labor or the exploitation of our natural resources. We wanted to compete based on productivity, efficiency and technology . . . many textile firms [had] left the country, and the government received severe criticism for not trying to sustain the maquila industry . . . [but] the foreign investment attraction strategy had changed. We wanted to attract industries with higher value-added, that would allow Costa Ricans to increase their standard of living.[14]

All of these factors, including the high level of support from the Figueres administration, made CINDE eager to approach Intel when they heard, in 1995, that the company was planning to put a plant somewhere in Latin America. CINDE officials paid a special visit to Intel's headquarters in Santa Clara and were able to persuade management there that Costa Rica should be on the list. During the actual country visits, the site selection team decided to visit Costa Rica on their way to Brazil.

The Site Selection Process, Phase 2: Initial Country Visits

Actually visiting the countries on the short list was crucial to get a sense, beyond all the data and statistics the team already had, of whether a plant would be a viable investment for a given country. For example, would the country's roads and airport facilities be adequate to transport the product quickly and efficiently to foreign markets? Did the country pose a security risk, to expatriate personnel or to the product? After all, silicon wafers containing hundreds of chips were very valuable—indeed, they were literally "worth more than their weight in gold." (Intel executives used this phrase often in interviews when referring to silicon wafers.) If trucks transporting hundreds or thousands of these on a daily basis were likely to be robbed, the site should be ruled out.

Other questions Intel wanted answered were even more difficult to glean from secondhand written reports. For example, would Intel executives be able to negotiate effectively with government offcials in the country in question? Could a good working relationship be established? Finally, would expat managers be happy living in the country?

Ted was in charge of making the initial contacts with the relevant government officials in each of the countries the site selection team planned to visit. In setting up the visits for the team, he wrote detailed letters explaining what the team hoped to learn during its visit. Central concerns, he stressed, included the following:

- availability of technical personnel and engineers to staff the proposed plant;
- labor unions and labor regulations;

- transportation infrastructure and costs (roads and airports only, since Intel would export all of its product via air);
- the availability and reliability of the electrical power supply;
- the government's corporate taxation rates—and, more specifically—whether the government offered any tax incentives for investments of the kind Intel proposed to make.

Ted had been confident in asking about incentives, for he knew that his requests for meeting with the relevant government officials would be well received. In the past, governments in Latin America had adhered to ideas of protectionism and economic nationalism, but by the late 1990s those ideas were a thing of the past. The proposed investment was something that would be attractive to almost any government in Latin America. After all, Intel's $300-$500 million investment would bring with it thousands of good jobs for technically trained workers and engineers.

In addition, rather than displacing indigenous producers by selling in the domestic market, Intel's product would be 100% exported. This would also contribute to the country's balance of payments. Finally, there was the possibility that Intel would use at least some locally produced components or products, thus creating so-called "linkage effects" and contributing to local economic development. If anything, Ted knew, Intel's proposed plant was the kind of project that countries would compete with one another to attract.

As it had turned out, the site selection team's initial experiences in each of the four countries were very important in making their decision. The team's first visit was to Costa Rica, then Brazil, Chile, and Mexico. Ted opened the first file, and began reviewing what he had learned.

Costa Rica

At first, despite CINDE's lobbying, Costa Rica had seemed an unlikely prospect. The country was simply too small. With only 3.5 million people and a tiny (if reasonably healthy) economy, the Intel executives feared that their investment would overwhelm the small nation. As Bob Perlman said, they were concerned that if Intel did invest in Costa Rica, it would be like "putting a whale in a fish bowl."15 But the CINDE officials had been persistent, and the site selection team was willing to give the country a closer look.

When it came to luring foreign investors, Costa Rica had many advantages. One was its well-deserved reputation for political stability and democratic government. Surrounded by other countries that had been engulfed in political turmoil and war for much of the 1980s, Costa Rica, in contrast, had abolished its military in 1948 and had been stable, peaceful, and democratic ever since. Costa Rican President Oscar Arias (1986–90) won the Nobel Peace Prize for brokering a peace among the warring Central American nations, thus enhancing Costa Rica's reputation as a center of peace and stability in a chaotic region. Since 1948, the nation had devoted its main government activities toward providing social welfare for the populace and improving education and health care. The government had even set aside over 25% of its national territory as national parks in order to preserve its astonishingly rich biodiversity (and to promote ecotourism).

But for Intel, more important than any of this was the role CINDE played in attending to their concerns. CINDE, autonomous from the government and administered by private business people, was by the mid-1990s a streamlined, efficient, flexible organization. One factor in CINDE's success was that its private status allowed it to pay its employees far more than they could have made working for the government. As a result, CINDE had bright, highly competent employees who were able to pursue Intel aggressively and creatively.

During the visit to Costa Rica, the site selection team was deeply impressed with how prepared CINDE was to receive them and answer their questions quickly and efficiently. The CINDE officials had clearly done their homework. For the harried team, trying to get information as quickly

as possible so that a decision could be made and a plant could be built fast, this quality made a very favorable impression indeed.

Following specific advice from Michael Porter, and also from the World Bank's Foreign Investment Advisory Service (an agency at the World Bank that provides less-developed countries with advice on investment promotion), CINDE knew that for a high-tech company like Intel, quick, speedy responses to questions were essential. Therefore, Enrique Egloff, CINDE's General Director, assigned three investment promotion specialists to the task of working exclusively on the upcoming Intel visit. Rather than waiting for the site selection team to arrive and then responding to questions, each of these CINDE officials researched potential questions *in advance* to *anticipate* what Intel might ask. Then, if asked, they were exceptionally well prepared with facts, figures, etc. Also, together the three organized visits for the Intel executives with all of the key government officials that they knew the team would want to meet.[16]

When Ted and his colleagues arrived in Costa Rica, CINDE had a well-planned, extensive agenda already laid out for them. During this and later visits, the Intel team was able to have in-depth discussions on relevant issues with, among others, the head of the ICE (the Costa Rican Electric Utility Company, still state-owned); the Minister of Transport and Public Works; the Minister of Education; the Minister of Science and Technology; the Dean of the *Instituto Tecnológico de Costa Rica* (ITCR); two separate accounting and consulting firms; and a number of other high-technology companies already established in Costa Rica, including Motorola, DSC Communications, and Baxter Healthcare. (Although Baxter had nothing to do with microprocessors, Intel found that it was useful to consult with this company during site selection. Like Intel, Baxter had operations all over the world and had similarly high standards in its production processes, such as the use of clean rooms.)

During the site selection team's initial visit to the country, CINDE officials arranged a visit with Jose Rossi, Minister of Foreign Trade, and President Figueres himself. Figueres impressed the team with his level of personal interest in the company, and his willingness to get involved in details of the negotiating process. But Figueres' level of personal involvement really hit home when the team casually mentioned that they were interested in getting to know Costa Rica's central valley better, since that was where the proposed plant would be located. Figueres said that if they could show up at 7:00 am the next day, he could arrange a helicopter tour. When Ted and his colleagues showed up early the next morning, they were astonished to find Figueres himself at the controls.

Despite the high level attention and the apparent willingness the government had to work with Intel, the site selection team still had several very serious concerns about Costa Rica. The main issues were:

Education

Although Costa Rica appeared to have a sufficient number of engineers, it was lacking in mid-level technicians, crucial for staffing the assembly and testing plant. While the engineers needed to keep the plant operating might number in the several hundreds, the need for mid-level technicians would be in the thousands. Finding enough people with the right training was clearly going to be a problem in Costa Rica.

In discussing this problem with Figueres, the Minister of Education, and the Dean of the Costa Rican Technological Institute (ITCR), the virtues of Costa Rica's small size quickly became evident. All of these officials made clear that they could adapt to Intel's needs, modifying the curriculum of the ITCR and even creating a special certification program to produce the requisite numbers of technicians.

Adapting to Intel's need in this way raised a potential problem. The site selection team had emphasized from the beginning that Intel did not want special treatment, no matter how much Costa Rica wanted its investment project. A major concern was that any special deals or special incentives offered by the Figueres government,

and not done in a transparent, legal way, would create problems for Intel in the future, should the next president want to withdraw this special support. Intel was very explicit from the beginning, therefore, that the government not try to offer anything like this.

But the Costa Rican government took care to make sure that the agreement to modify the ITCR's curriculum did not fall into this category. Although the new curriculum would be created in direct response to Intel's concerns, adapting the ITCR's curriculum to Intel's rigorous standards would make the school's graduates better-trained overall, and thus better-equipped to work for *any* high technology firm. The modifications were not just for Intel—they were strengthening the ITCR generally.

In addition to investigating the technical preparedness of Costa Rica for the proposed plant, Ted and his colleagues also observed the level of English language proficiency in the general population, which they perceived to be much higher than it was in other Latin American countries. Ted and his colleagues observed that in Costa Rica, even cab drivers seemed to have a high degree of proficiency in English. Clearly, the general population was relatively well educated, and this was just one indication of that. In addition, the team noted that the current government had made English a required subject in the public school system. While a relatively minor point, English proficiency would be important when expatriates arrived to train local workers, especially since most technical manuals were in English.

Labor Issues

Labor unions were a major concern of Intel's. It did not want them in any of its plants, anywhere in the world, even if they were weak or labor unions in name only. In large part this had to do with the company's complex, highly technical production processes, which simply could not function properly with work stoppages or other kinds of union-related disruptions. These kinds of issues appeared to present few problems for Intel in Costa Rica. In fact, only about 7% of Costa Rica's private-sector workers belonged to labor unions.[17]

Labor unions had not had much power in Costa Rica since the end of the civil war in the late 1940s, when the new government banned the largest labor confederation in the country because of its affiliation with the Communist Party. Later, when the *Partido Liberación Nacional* (PLN) government was elected in the 1950s, it established *Solidaridad* (Solidarity), a government-sponsored movement to create special voluntary associations as an alternative to more confrontational, industry-wide unions.

Workers who belonged to these *solidarista* associations received numerous benefits, including participation in special savings plans (with contributions made by employers as well as employees), low-interest loans, and profit-sharing. (The profit-sharing was with the association, not the company.) *Solidarista* associations were quite different from labor unions in that they allowed management as well as workers to participate, and had no negotiating power of their own. Some believed that this system had contributed greatly to "labor peace" in the workplace.18 Over 19% of multinational corporations in Costa Rica, including Firestone, McDonalds, and Colgate-Palmolive, had *solidarista* associations.[19]

In addition to the Solidarity movement, other factors also prevented the development of more traditional, combative labor unions in Costa Rica. One was the government's establishment of a national collective bargaining system, using wage boards to establish wage levels—thereby eliminating an important role for such unions. Still another was the law stating that unions could call a strike only if 60% of affected members signed a petition in favor of doing so, and a judge decided that the reason for the strike was valid. While the judge was deciding, the employer could fire any workers who were involved.[20]

Clearly, labor unions in Costa Rica would not be a major concern for Intel. Moreover, wages in Costa Rica were low in comparison with those in the United States, even for technical workers or skilled technicians. However, this was also true

of the other countries on Intel's short list, with the exception of Chile (more on that below).

Transportation

While the roads from most potential sites for the plant to the airport were in excellent condition, and San Jose's international airport was acceptable, Intel's main concern was that the airport did not offer sufficient daily flights. This presented a very serious problem, because Intel would need to export all of its chips by air. After discussing the problem at length with Intel's executives, Costa Rica's Ministry of Transportation and Public Works was willing to be flexible in creating an "open skies" program. It began issuing more licenses and encouraging many other airlines to use the national airport. Again, while this might have seemed a special concession to Intel, it benefited other companies and other industries, especially the tourism industry, as well.

Electrical Energy

Because Costa Rica was not accustomed to industrial projects of the size Intel proposed, it did not have adjusted rates for heavy industrial users. The rate for industrial users varied only between $0.07 and $0.09 per kilowatt-hour—much more expensive, for example, than Mexico's rate of about $0.02 per kilowatt-hour.[21]

After discussion of this issue, ICE agreed to create a new rate for especially heavy users of electricity: $0.05 per kilowatt-hour. This rate would apply to any company using more than 12 megawatts of electricity (more than any other user of electricity in the country). Again, this was *not* a special concession to Intel—because *any* large industrial user that chose to invest in Costa Rica could also take advantage of this heavy use rate.

Investment Incentives

Costa Rica already offered generous incentives to companies located in its eight industrial parks with free trade zone status. Companies in the *Zona Franca* not only did not pay duties on imported parts or components, but were also completely exempt from income tax for eight years, and 50% exempt for four years after that. Intel wanted even more than this and the Costa Rican government was willing to negotiate. After all, other multinational corporations operating in the free trade zones, such as Baxter and Conair, had expressed concern about paying the higher tax rate at the end of their eight-year exemption, even if they planned to reinvest in the country.

Jose Rossi, the Minister of Foreign Trade, agreed to lobby the Costa Rican legislature for a change in the legislation. The new law would give a company a 75% exemption after eight years, provided that it reinvested more than 25% of its initial investment after the fourth year. Again, this would benefit not just Intel but other multinational corporations as well. Jose Rossi emphasized to Intel executives that he would do his best to push for the new policy to become law, but that he could promise no more than that.[22] Working its way through the slow but democratic legislative process, this law finally passed in 1998.

Clearly, there were reasons to be concerned about putting the plant in Costa Rica. But the government did seem willing to work with Intel without breaking any of its own laws by offering special deals. The prospects at least looked promising. But the next country the team planned to visit, Brazil, seemed potentially to offer a lot more.

Brazil

The site selection team's experience in Brazil was in marked contrast to what had happened in Costa Rica. Brazil's size alone was an enormous contrast: 160 million people in contrast to Costa Rica's relatively puny 3.5 million. Also, unlike Costa Rica's simple, unitary political system, where power was centered in the national legislature and the president, Brazil offered another layer of complexity: it had a federal system. This meant that Intel could pick and choose among Brazil's 26 states for just the right investment

deal. Under Brazil's decentralized system, states and even municipalities had some control over taxation policy and could offer individual incentives in order to lure investment. This practice had grown to such an extent that in Brazil it had come to be known as the *guerra fiscal* or "taxation war." Some states had actually driven themselves to the point of bankruptcy in their efforts to compete with other states in offering the most generous exemptions from the state value-added tax, the ICMS.[23]

At the federal level, Brazil provided a tax incentive specifically directed toward the computer industry through the *Processo Produtivo Básico* (PPB), or Basic Productive Process law. In order to receive this incentive (which included a reduction of up to 50% of corporate income tax, as well as reductions in some other taxes), companies had to invest 5% of total revenue in research and development. At least 2% of this had to be invested in universities or other government-approved institutions; the rest could be invested internally.[24]

While the PPB potentially seemed interesting, the fiscal incentives at the state level turned out not to be very relevant. The site selection team had already decided that the best location for a plant would be in the state of São Paulo—where the governor, Mario Covas, had explicitly rejected offering any special tax incentives.[25] In any case, the ICMS tax itself would not apply to Intel, since this tax was not levied on exported products.[26]

Covas's reason for not being generous about incentives was that São Paulo did not need to do much to lure investment. For after Brazil had finally stabilized its economy with the implementation of the *Plano Real* in 1994, billions of dollars of foreign investment were flowing into the country every year. And the lion's share of this investment went to São Paulo, the most heavily populated and economically developed state in the entire country.

What intrigued Intel about São Paulo was that the state had already succeeded in attracting numerous high technology firms. In fact, within a couple hours' drive from the capital, the megacity of São Paulo (population: 16 million people), were the much smaller cities of São Jose dos Campos and Campinas. In these cities, hundreds of high-technology firms had already established themselves. São Jose dos Campos was the home of EMBRAER and many other high-technology firms. Campinas, of particular interest to Intel, had managed to attract IBM, Compaq, Hewlett Packard, DEC, and Texas Instruments, to name just a few. Significantly, while São Paulo state did not offer any special tax incentives, Campinas's municipal government did provide them. Specifically, it granted exemption from city property and service taxes for any high-technology companies that established manufacturing plants in either of two industrial parks in the city, both specifically oriented toward high-technology firms.[27]

Clearly, Brazil had a lot to offer. In terms of *adequate numbers of technical personnel,* there was no question that the numbers in Campinas (home of the famed technological university, the *Universidade Estadual de Campinas,* or UNICAMP) would be far superior to what Intel could find in Costa Rica. *Infrastructure* was more than adequate; electrical power was readily available at reasonable costs, and the airports were already capable of meeting Intel's needs.

But other issues worried Intel's site selection team. *Security* was of some concern; according to some reports, hijacking of trucks in the São Paulo area was on the rise.28 Another concern was *labor unions,* which, while not as powerful as they were in some Latin American countries, could be more militant than those in Costa Rica. In Brazil, all workers paid union dues, whether they were formal union members or not (of Brazil's total workforce, about 20–25% was unionized). A single union represented all workers in a particular industry in a given geographic area. These unions were organized at the federal level into labor federations. The *Central Única dos Trabalhadores* (Central Workers' Union, or CUT), the more combative of Brazil's two principal labor federations, was linked to the *Partido dos Trabalhadores* (Workers' Party, or PT), which controlled some state and municipal

governments in Brazil. While workers' base wages were relatively low, overall labor costs in Brazil tended to be higher than in other Latin American countries because mandatory benefits for full-time employees, such as paid vacations, lengthy maternity (also paternity!) leaves, and social security taxes, added 50–80% to the total cost.[29]

But perhaps the biggest problem that the site selection team encountered in their visit to Brazil was that, after their highly favorable experience with CINDE, and all the personal attention to their concerns lavished upon them from Figueres, Brazilian government officials seemed indifferent to their concerns. Foreign firms were so eager to get into Brazil to get access to its huge internal market that state and national government officials did not need to concern themselves with addressing special concerns of individual corporations—even of an industry giant like Intel. Moreover, on balance, the federal government's policies did not seem all that favorable. While the federal government did offer the specific PPB incentive for firms investing in R&D, it offered no general exemption from corporate income tax—and it had a high rate of taxation.

After the Costa Rica experience, all of this left a negative impression. Certainly Brazil did have a huge and very attractive domestic market. But for this particular project, Intel had no interest whatsoever in the domestic market of the country where its plant would be located. 100% of the product manufactured in the plant would be exported.

In addition to the lack of special incentives in São Paulo state, and the required income tax at the federal level, there were still more additional costs associated with doing business in Brazil. There seemed to be numerous other taxes, such as the infamous tax on financial transactions, and other expenses that all added up to what expatriate executives referred to as "the Brazil cost"—the extra cost of doing business in Brazil. Extra costs might be worth enduring if the tradeoff was access to a huge local market. But when a company intended to produce exclusively for export, as in Intel's case, these costs could be prohibitive. After all, aside from the (at the time) overvalued exchange rate, the "Brazil cost" was one of the chief reasons Brazilian firms themselves had difficulty exporting and why Brazil's current account deficit was so large.

Chile

After Brazil, the site selection team visited Chile. The team was very impressed with Chile's modern infrastructure and the country's technical training programs. But they immediately encountered four problems: distance, labor costs, capital controls, and lack of government incentives.

Distance

The site selection team was struck by the sheer amount of travel time to get from the United States to Santiago, Chile (almost 12 hours, given the scarcity of direct flights). Aware of the number of expatriate executives who would have to be traveling to the plant, at least in the startup phase, the team saw that this could present a problem. Costa Rica, in contrast, was only a three-hour flight from Texas or California.

Labor Costs

One legacy of the dictatorship of General Augusto Pinochet in Chile (1973–89) was a labor code that inhibited the development of powerful, confrontational labor unions. Only about 12% of the workforce was unionized. Unions that included members from more than one company were allowed to engage in collective bargaining only if the company in question agreed to this arrangement—which few companies ever did.[30]

Partly as a result of these rules, labor costs for unskilled workers were low in Chile, even though the country had one of the highest GDPs/capita in all of Latin America. However, salaries for technically trained personnel, which Intel needed most, were relatively high. The starting salary for an engineer in Chile was between $30,000-$40,000—not very different from what it would be in the U.S. Intel could hire engineers in Costa Rica or Mexico for almost half that amount.

Capital Controls

At the time of Intel's visit in 1996, Chile's Central Bank had a policy designed to control capital flight during times of market volatility. This policy stated that for portfolio capital investments (*not* for direct foreign investments, such as what Intel planned), investors would be restricted from withdrawing their investment from Chile for one full year. In addition, investors would be required to deposit an amount, called the *encaje,* equivalent to 30% of their overall investment in a special account at Chile's Central Bank during that time period.[31]

This policy was a legacy of an earlier era, when capital controls were common throughout Latin America. Most Latin American countries had already eliminated this kind of policy, considering it to be counterproductive, in line with the overall "Latin American consensus" in favor of market-oriented policies. Even though Intel presumably would not be affected, since the proposed plant would be a *direct* foreign investment (as opposed to portfolio investment, e.g., investment in the Chilean capital markets), Intel executives were spooked by this policy. One government official was struck with how often the Intel executives brought up this issue, in meeting after meeting.[32]

Government Incentives

Beyond these other concerns, the Chilean government simply was not able to offer any significant investment incentives to Intel. Government officials at *Corporación de Fomento de la Producción* (CORFO), Chile's government development agency, explained to the site selection team that the market-oriented "Chilean model" was designed not to interfere with market forces, i.e., *not* to give special incentives for investment in selected industries.[33]

CORFO *was* authorized to offer incentives if the investment were to be located in an especially poor region of the country in need of economic development. CORFO officials went so far as to suggest a location for Intel's plant that would meet these criteria, a poor region of Chile not far from Valparaiso. But the site selection team made very clear to CORFO that they did not want to be outside of the general vicinity of Santiago.[34]

Mexico

The final country on the team's itinerary, Mexico, offered an especially promising location for Intel's plant: the Silicon Valley of Mexico, Guadalajara. The second-largest city in the country, Guadalajara had by the mid-1990s established itself as a center for high technology firms, particularly in the electronics sector. Beginning with Motorola and IBM in the 1960s, hundreds of electronics firms had established plants in and around Guadalajara, the capital of the relatively prosperous Mexican state of Jalisco.

The site selection team was highly impressed with Guadalajara. They talked to a number of executives in high-technology firms, including Motorola and Lucent, which were already there. The *Secretaría de Promoción Económica* (SEPROE), or Jalisco State Economic Development Agency, was extremely well prepared with eye-catching brochures and detailed information that rivaled what the Intel executives had encountered at CINDE. SEPROE, too, prepared a detailed agenda, just as CINDE had done; and the site selection team had plenty of opportunities to speak to several expatriate executives on their own, just as they had done in Costa Rica.

The response from all of the site selection team's interviews was highly favorable about Guadalajara.35 As part of Mexico's fabled "Golden Triangle," infrastructure in the city and surrounding area was more than adequate. The airport's number of flights and capacity was sufficient. Labor costs were low, yet there appeared to be a relatively large supply of skilled engineers and technicians. Finally, energy in Mexico, produced from abundant supplies of natural gas, was relatively inexpensive. As mentioned before, electrical power in Mexico was only about $0.02 per kilowatt-hour—significantly cheaper than Costa Rica's rate, even after implementation of

the ICE's new policy granting special rates to heavy industrial users.

Unlike the indifference the site selection team had encountered in São Paulo, the Jalisco state government was eager to work with Intel. SEPROE officials explained that, in collaboration with the governor of Jalisco (renowned for his honesty and effectiveness), the agency was actively pursuing a strategy of encouraging high-technology investment. It was doing this indirectly by subsidizing numerous technical training schools so that there would be an adequate supply of skilled labor in the region. Also, like CINDE in Costa Rica, SEPROE officials traveled frequently (sometimes accompanied by the governor) to spread the word about Guadalajara overseas and encourage foreign investment by high-technology firms, particularly in the electronics sector. The governor, Alberto Cardenas, was a member of the *Partido de Acción Nacional* (PAN), a business-friendly political party with market-oriented economic views.

SEPROE had a complex formula that it used to determine the number of jobs a company's investment project would be likely to produce, and the capital that the project would bring to the state. On the basis of this formula, SEPROE was prepared to offer Intel free land for the plant's site, and subsidized training for Intel employees for an extended period. But despite all of these positive factors, Intel had two serious concerns.

Lack of Government Incentives at the Federal Level

For all of the incentives the Jalisco state government was prepared to offer at the state level, the federal government of Mexico refused to budge on giving income tax exemptions at the federal level. Also, the extreme centralization of the budget process in Mexico meant that, while the states could provide incentives such as free land and subsidized training for employees, state officials had no ability to offer fiscal incentives of their own, even if the federal government had allowed them to do so. As one top SEPROE official remarked in frustration, "The federal government receives 100% of the tax revenues, but then only redistributes about 20% of that revenue to the states."[36]

Labor Unions

Mexican federal law also contained certain rules about unions that worried the site selection team. Intel had a policy about not having unions anywhere in the world. But Mexico's federal law stated that if a minimum of 20 employees in a given company decided to form a union, the company would be required to recognize it. If only two employees chose to affiliate with a union from outside the company, the company would be required to recognize and work with that union, provided that it was already recognized by the Mexican labor authorities. However, the workers would have to decide which form of representation they wanted, because only one union was allowed to represent the workers in a specific company. Most workers belonged to unions that were members of Mexico's nine largest national labor confederations, which had close ties to the dominant *Partido Revolucionário Institucional* (PRI) party.[37]

Although companies were not required to have unions, in practice union organizers from outside the company would often work with company employees to organize a union or recruit them to affiliate with outside unions. This meant that most large companies in Mexico had to deal with unions, and that the country had a high rate of unionization. Of Mexico's total workforce, nearly 40% was unionized; of industrial workers in companies with more than 20 employees, the figure was closer to 80%.[38]

Many companies in Mexico ensured harmonious labor relations by working with company unions referred to as *sindicatos blancos* ("white unions"). In some cases, these unions were not really representative of the workers, but served only to comply technically with Mexico's legal requirements. Outside organizers would not be able to come in and form a more combative union (unless a majority of the workers voted for this), because the company would technically

already have union representation. Other white unions were more genuinely representative of the workers, but worked in a collaborative way with management. In any case, white unions were much easier to work with than the more combative, confrontational unions that existed in many industries in Mexico.

But even if Intel were able to negotiate an agreement with a white union, this would still go against Intel's worldwide policy not to have unions in its plants. Intel would no longer be able to tell its employees elsewhere that the company had no unions whatsoever, at any plant in the world.

IBM managed to get around this problem at its own plant in Guadalajara by contracting out the majority of its workforce. Although 10,000 people worked at the IBM plant in Guadalajara, only about 500, all nonunionized management-level personnel (engineers and executives), were actually IBM employees. The rest worked *at* the IBM plant but were actually employed by other companies that were contact manufacturers, doing specific projects on a temporary basis for IBM. (Of course, all of these companies had unions.) This arrangement gave IBM flexibility in terms of its payroll, because during times of slack demand it could simply hire fewer contract manufacturers without having to worry about dismissing its own personnel and dealing directly with Mexican labor law issues.

Knowing about these different ways of working around Mexico's labor laws, SEPROE officials told Intel's site selection team not to worry. The company would not need to have a labor union. Intel could very easily be an exception to the general norm in Mexico.

But this very willingness on the part of government officials in Mexico even potentially to make an exception in Intel's case alarmed the site selection team even more. If the rules were not clear-cut, objective, and adhered to in a straightforward manner, then this created an unpredictable, nontransparent environment. This potential for lack of predictability and transparency in the rules of the game was of grave concern to Intel. It smacked of the "special deals" that the company had tried so much to avoid in Costa Rica.

Ted closed the last file and rubbed his eyes. He really had to finish that report.

NOTES

1. The principal members of the site selection team were Ted Telford, International Site Selection Analyst; Chuck Pawlak, Director, New Site Development; and Bob Perlman, Vice President for Tax, Customs, and Licensing. Telford and Pawlak worked out of Intel's Chandler, Arizona, office; Perlman was based at the headquarters office in Santa Clara, California. Beyond these three members, there was an extended group of about 15 Intel employees all over the world who participated in detailed assessment of countries on issues such as energy availability, construction, operations, security, etc. Frank Alvarez, Vice President of the Technology and Management Group, was also based in Santa Clara and ultimately had final say over the site selection decision, along with Mike Splinter, Vice President of Worldwide Manufacturing and, of course, Craig Barrett, Intel's CEO.

2. Silicon is used because it is a semiconductor. Semiconductors are materials that can be altered either to be conductors of electricity or insulators—a useful quality in a material used for constructing the complex electronic circuitry of microprocessors. "Silicon Valley" is a nickname for the region around Stanford University, which includes many towns that serve as a home to important high-technology companies (including Santa Clara, where Intel headquarters were located).

Using sophisticated chemical processes and engineering techniques, microprocessors are manufactured by the hundreds on extremely thin layers of silicon known as wafers. Each wafer is about 6–8 inches in diameter. The microprocessors are tested while they are still on the silicon wafer. Later, these wafers are cut into individual pieces or chips, each containing one microprocessor. The microprocessors are then tested again, packaged, and sent to customers for installation in many different kinds of automated devices.

3. World Bank, Foreign Investment Advisory Service, *FDI News,* December 1996, p. 5.

4. Grove later wrote a book with this title.

5. Debora Spar, "Attracting High Technology Investment," Foreign Investment Advisory Service, World Bank, Occasional Paper #11, April 1998, p. 4.

6. Ibid., p. 8.

7. Interview with Ted Telford, Site Selection Analyst, Intel, Glendale, Arizona, September 10, 1998.

8. Mary A. Clark, "Transnational Alliances and Development Policy in Latin America: Non Traditional Export Promotion in Costa Rica," *Latin American Research Review,* Vol. 32, No. 2, 1997, p. 91.

9. Interviews with CINDE officials, San Jose, Costa Rica, October-November 1998.

10. Thomas T. Vogel, "Costa Rica's Sales Pitch Lures High-Tech Giants Like Intel and Microsoft," *Wall Street Journal,* April 2, 1998, p. A-18; interviews with CINDE officials, San Jose, Costa Rica, October-November 1998.

11. The World Bank, "Costa Rica: A Strategy for Foreign Investment in Costa Rica's Electronics Industry" (Washington, D.C.: The World Bank), 1996.

12. Interview with Rodrigo Zapata, former Vice President of CINDE (now General Manager for GE-Costa Rica), San Jose, Costa Rica, October 1998. The study was conducted by the World Bank's Foreign Investment Advisory Service. Although the final version was published in 1996, CINDE was well aware of its main points long before that time.

13. Jose Maria Figueres was the son of Jose (Pepe) Figueres Ferrer, who led a civil war in 1948 when the Costa Rican legislature had nullified the outcome of a presidential election for a candidate who had won a legitimate election victory. During a brief period as interim president immediately following the war, Pepe Figueres succeeded in writing a new constitution and abolishing Costa Rica's military entirely, an unprecedented feat in Latin America (or virtually anywhere else, for that matter). He then turned power over to the rightful victor in the 1948 presidential election. He was elected president of Costa Rica himself several years later (1953–57).

14. Excerpt from interview with Jose Maria Figueres, quoted in Nils Ketelhohn, "The Costa Rican Electronics and Information Technology Cluster," unpublished manuscript, 1998, p. 6.

15. Telephone Interview with Bob Perlman, Intel's Vice President for Tax, Customs, and Licensing, August 1998.

16. Interviews with all three individuals in San Jose, Costa Rica, October-November 1998.

17. Bruce M. Wilson, *Costa Rica: Politics, Economics, and Democracy* (Boulder, CO.: Lynne Rienner Publishers, 1998), p. 70.

18. CINDE Web site, www.cinde.or.cr.

19. Ibid.

20. Wilson, *Costa Rica,* pp. 69–70.

21. Interview with Danilo Arias, former CINDE investment promotion specialist, San Jose, Costa Rica, October 1998.

22. Interview with Jose Rossi, former Minister of Foreign Trade, San Jose, Costa Rica, November 1998.

23. I use only the acronym for the state value-added tax here because the full name is quite a mouthful. ICMS stands for *Imposto sobre as operações relativas a Circulação de Mercadorias e sobre a prestação de Serviços de transporte intermunicipal e de comunicação.*

24. Renato Bastos, U.S. Department of Commerce, "Computer Hardware and Peripherals," Industry Sector Analysis for Brazil, São Paulo, Brazil, October 1998, p. 15.

25. Although São Paulo did allow an exception for the computer industry by reducing its relatively high ICMS from 18% to 12% for computer products only, this was still a high rate. See Bastos, p. 15.

26. American Chamber of Commerce-São Paulo, "How to Undertstand Corporate Taxation in Brazil" (informational pamphlet), São Paulo, 1999, p. 17.

27. Município de Campinas, Lei N. 8003 de agosto de 1994, in "Incentivos Fiscais do Município de Campinas–SP," provided by Prefeitura Municipal de Campinas, November 1998.

28. Interview with Intel executive, Glendale, Arizona, October 1998.

29. "Brazil: Investing, Licensing, and Trading," The Economist Intelligence Unit (London: The Economist Intelligence Unit), January 1999.

30. Matt Moffett, "Pinochet's Legacy: Chile's Labor Law Hobbles Its Workers and Troubles the U.S.," *Wall Street Journal,* October 15, 1997, p. A-10.

31. Technically, the policy still exists. However, currently, the rate is set at 0%—so portfolio investors do not have to put any money in this special account. Some in Chile, and all foreign investors, would like to see the end of this policy once and for all. The fact that the policy still remains, even if the rate is set at 0%, means that a higher percentage could be re-imposed at any time.

32. Interview with Francisco Troncoso, Director, International Relations Division, CORFO, Santiago, Chile, December 1998.

33. Interview with Mario Castillo, Deputy Director, Strategic Planning Division, CORFO, Santiago, Chile, December 1998.

34. Ibid.

35. Interview with Ted Telford, Phoenix, September 1998. Information from this section is also based on my interviews with officials at SEPROE, with executives at Lucent, Motorola, SCI, and IBM, and with others in Guadalajara, Mexico, December 1998, and August 1999.

36. Comments by SEPROE official, Guadalajara, Mexico, August 1999.

37. Edward G. Hinkelman (ed.), *Mexico Business: The Portable Encyclopedia for Doing Business with Mexico* (San Rafael, CA: World Trade Press), 1994, p. 15.

38. "Mexico: Investing, Licensing and Trading," The Economist Intelligence Unit (London: The Economist Intelligence Unit Limited), September 1998.

THE ACER GROUP'S CHINA MANUFACTURING DECISION

Prepared by Donna Everatt under the supervision of Professors Terence Tsai and Borshiuan Cheng

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In the late summer of 1998, M.Y. Lin, the vice-president of the Acer's Global Operations Centre for manufacturing operations, was reviewing the brief he had prepared for a meeting with senior management. Specifically, the brief provided background information on which to base the decision of whether the time was right to commence full-scale manufacturing operations on the Chinese mainland, and if so, where and how should he recommend that Acer begin?

THE ACER GROUP

The Acer Group was one of the world's largest PC and computer component manufacturers. Associated Acer companies included the world's third-largest PC manufacturer, and Acer's mobile computers, network servers and personal computers were ranked in the world's top 10 most popular brands in their respective product categories. Acer was the market leader in 13 countries around the world, and was ranked in the top five in more than 30 nations globally. Sales of the six million PCs and almost four million monitors Acer produced in 1997 topped US$6.5 billion with earnings of US$89 million due to the strength of its core businesses (see Exhibit 1). Besides being a top PC supplier in Africa, the Middle East and Southeast Asia, Acer had a lucrative US$500 million operation in OEM manufacturing. With more than 23,000 employees, half of whom were located outside of Taiwan, and 120 enterprises in 44 countries supporting dealers and distributors in over 100 countries throughout the world, Acer was a truly global organization.

Acer's global mission statement was "fresh technology enjoyed by everyone, everywhere." This was the philosophy on which Acer had grown, and the firm was widely regarded as a worldwide pioneer in delivering high-performance PCs at accessible prices. Based on this principle, in 1997 Acer introduced the low-cost multimedia PC, the Acer Basic II, for just under US$1,000, the much-talked-about price point in the U.S. Media and observers in the PC industry had been widely expecting that a PC at this price would initiate the next generation of PCs to be introduced into the marketplace. This focus on

Acer Group financial highlights
Combined
Excluding TI-Acer*

Unit: US $ Million

For the year	1993		1994		1995		1996		1997	
	Combined	Excl. TI-Acer	Combined	Excl. TI-Acer	Combined	Excl. TI-Acer	Combined	Excl. TI-Acer	Combined	Excl. TI-Acer
Total Revenue	1,883	1,651	3,220	2,901	5,825	5,262	5,893	5,346	6,509	6,132
Revenue Growth %	49.4%	38.4%	71.0%	75.7%	80.9%	81.4%	1.2%	1.6%	10.5%	14.7%
Net Earning	86	22	205	103	413	163	188	150	89	262
Net Earning %	4.6%	1.3%	6.4%	3.6%	7.1%	3.1%	3.2%	2.8%	1.4%	4.3%
Total Equity	497	316	703	420	1,450	939	2,008	1,321	2,065	1,638
ROE	18.5%	7.0%	34.2%	28.1%	38.4%	23.9%	10.9%	13.3%	4.4%	17.7%
Total Assets	1,584	1,143	2,082	1,520	3,645	2,340	4,192	3,156	4,758	3,608
ROA	5.7%	2.0%	11.2%	7.8%	14.4%	8.4%	4.8%	5.5%	2.0%	7.7%
Net Investment in Property, plant and Equipment	497	181	538	197	963	284	1,347	418	1,470	616
Working Capital	173	149	288	280	767	758	996	995	875	974
No. of Stockholders	70,000	44,000	70,000	69,000	90,000	89,000	123,000	122,000	155,000	154,000
No. of Employees	7,200	6,348	9,700	8,612	15,352	13,947	16,778	15,272	22,948	21,307

Exhibit 1 Sales Chart

*Due to the drastic drop in the market price of DRAM during 1996–97, the Acer Group's financial results excluding T1-Acer operations are provided to more accurately reflect the economic status of non-DRAM Acer Group operations.

price competition was restructuring the PC industry, and PC firms worldwide were struggling for ways to manage eroding margins by lowering costs. The Acer Basic II was initially to be introduced in Acer's domestic market, followed by Greater Asia, mainland China, India, Russia and the U.S. Features varied from country to country; however, the standard configuration was equipped with an Intel Pentium processor, at least 16 MB of RAM and Microsoft Windows 95. In countries further along the technology adoption curve, the Acer Basic II would also include an 8x CD-ROM drive and 33.6 k fax/modem for express connection to the Internet.

Leading Acer to the Next Millennium

Stan Shih, the founder and chairman of the Acer group and widely regarded as a high-tech visionary, had a long-term vision for Acer to transform the Group into a global high-tech corporation. Though fully committed to aggressively pursuing ever-growing segments of the PC market, Acer began to shift a sizable portion of its attention and resources to the '3E' market—education, entertainment, and e-commerce. Newly created ventures in the realm of semiconductors, communications and consumer electronics were expected to play an integral role in Acer's strategic growth. In keeping with Acer's style of growth to date, these interests capitalized on prior technological competencies, while complementing the development of the existing PC business.

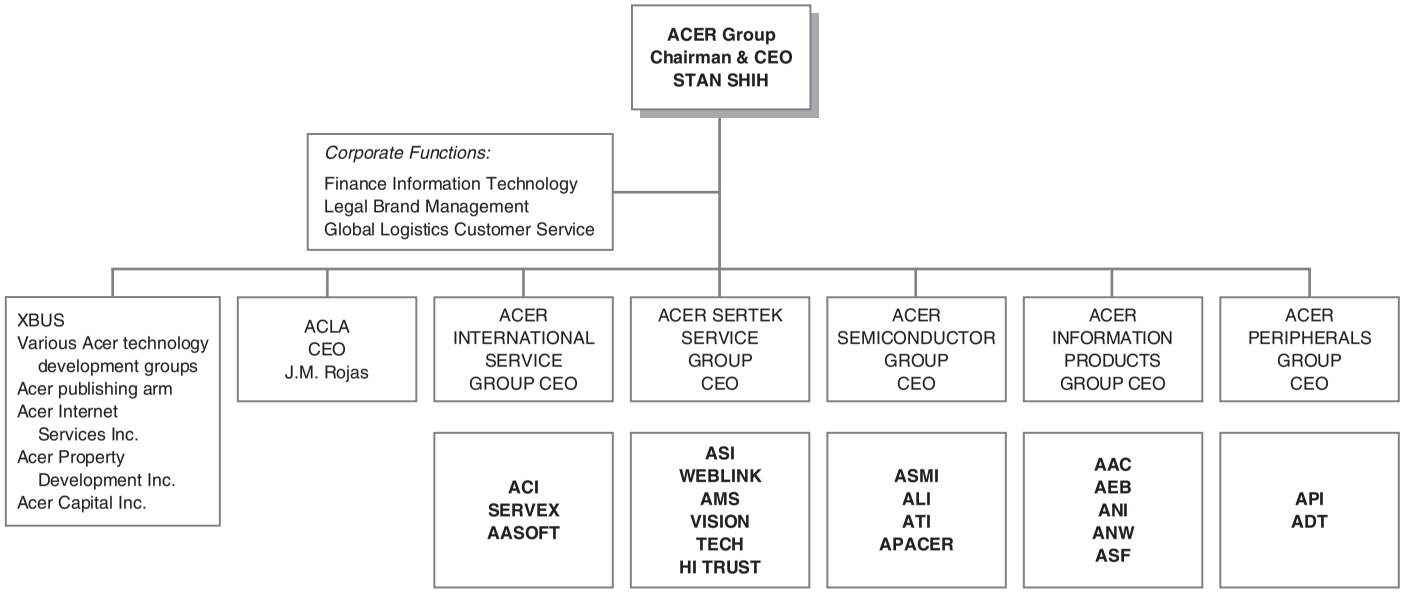
With a view to creating an organizational structure that would support this new vision and enhance global competitiveness, in 1998, the Acer group was re-engineered (see Exhibit 2). The modified organizational structure resulted in the creation of several new corporate functions and business development teams.

This reorganization was adopted to fortify Acer's overall competitiveness in light of what industry analysts saw as a disintegration of the PC industry in 1998, meaning that almost every product was based on an 'open standard,' resulting in competition in market niches where companies were fighting for market segment leadership. Whereas PCs had historically been Acer's core business, and continued to be in 1998, the disintegration of the entire IT industry forced Acer into developing strategic new business divisions. In 1998, Acer continued to develop its technological expertise in components for mainstream PC systems as well as peripheral markets, while seriously exploring dynamic new opportunities in the consumer electronics, communication and semiconductor industries.

Decentralization—with a Centralized Core

Each Acer Group member company operated independently, while at the same time working together to take full advantage of the resources available from a global US$8 billion multinational. The glue that bound the associated Acer Group of companies together was the Acer brand name and the technological development brought about by Acer's R&D activities. Over the last several years, however, it became clear that centralization of some common corporate functions would be a more effective method of managing the Acer Group. To that end, in January 1998, the Acer Group centralized four functions, which were consequently controlled by Acer Group's global operations: Brand Management, Global Logistics, Customer Service and Information Technology Infrastructure. These divisions provided the strategic direction, planning, integration and implementation of all related Acer businesses throughout the world.

Acer's decentralized organizational structure delegated responsibility to management to involve employees in the decision-making process. This was considered their strategic advantage in the fast-moving, ever-changing world of computers. It was expected that this approach would occasionally involve conflicts that would be assuaged through open discussion and persuasion. Head office management recognized that it was unreasonable to ask their managers to follow various



ACLA- Amerciamarketing, Sales and Assembly of ACER Brand Products in Latin America

ACI-ACER Computer International Marketing, Sales and Assembly of ACER Brand Products in Asia, Africa, Middle East, Australia, New Zealand and CIS Countries

SERVEX- Specializes in Software Content Development

AASOFT- Specializes in Software Content Development

ASI-ACER Sertek Marketing, Sales and Assembly of ACER Brand Products in Taiwan and Mainland China

WEBLINK-Weblink International Inc. Specializes in Channel Management for Computer Peripherals and Software Products

AMS-ACER Marketing Services Marketing, Sales and Assembly of ACER Brand Products in Mainland China

VISION TECH-Vision Tech Information Technology, Inc. Distributor for Computer Associates Software

HI TRUST-Specializes in E-Commerce Security

ASMI-ACER Semiconductor Manufacturing, Inc. Design and Manufacture of IC Logic Chips and Dram

ALI-ACER Laboratories Inc. Design and Manufacture of Core Logic Chips, Multimedia Chips and I/O Controllers

ATI-ACER Testing Inc. Specializes in Value-Added IC Testing Services

APACER-APACER Technology Inc. Design and Manufacture of Memory Modules

AAC-ACER America Corp. Marketing, Sales and Assembly of ACER Brand Products in North America

AEB-ACER Europe B.V. Marketing, Sales and Assembly of ACER Brand Products in Europe

ANI-ACER Netxus, Inc. Design and Manufacture of Lan Cards and Communication Products

ANW-ACER Neweb Design and Manufacture of Wireless Communication Equipment

ASF-ACER Softech Specializes in Software Design

API-ACER Peripherals, Inc. Design and Manufacture of Computer Peripherals and Communication Products

ADT-ACER Display Technology Design and Manufacture of Plasma Display Panels and LCD Modules

Exhibit 2 Organization Chart

courses of action without reason. According to the associate vice-president of the Acer Institute of Education, Alan Chang, management at corporate headquarters were willing to explain and justify policies to local managers, and were willing to "take the time to convince the manager, and importantly, were willing to be convinced."

Although there were several advantages in the autonomy of individual business units, senior management's biggest challenge at Acer was to consolidate the strength of the decentralized structure—to find the balance between Acer's core concept of 'symbiotic common interest,' which fostered personal commitment toward Acer's goals, and another core concept of adopting a highly decentralized, delegated management system that encouraged the head of each business unit to interpret and implement the corporate culture according to their own ideas and to achieve their specific mandates in the way they considered most effective. In this way, it was Shih's belief that Acer would achieve a 'global vision with a local touch.'

'Local Touch'

A 'local touch' was achieved in several ways. For example, Acer's foreign market entry strategy involved forming joint ventures to establish distribution systems and marketing and promotional activities in the local market. This 'local touch' involved partners, who had intimate knowledge of the market, well-established relationships with local businesses and local distribution networks. Advertising and brand name support (marketing communications and promotion) costs were shared equally.

Acer's 'local touch' was also achieved through product adaptation to suit local market language, tastes, trends, conditions and technological innovation. Also, Acer took an active attitude toward its local social responsibilities, left to the judgment of regional managers, which helped Acer integrate into foreign cultures with a long-term view. Workers were hired locally and, over a period of several years, Acer gradually replaced Taiwanese managers with local managers. Local managers were encouraged to be entrepreneurial and to feel like owners, and as such were invited to participate in stock options, purchasing stock in their SBUs at book value.

In the future, another way that 'local touch' would be attained was in the creation of a global coalition of highly autonomous Acer companies that would be owned predominantly by local investors and managed by local employees. Acer's strategy of floating various SBUs on stock exchanges throughout the world would allow not only institutional and retail investors to buy into Acer's success in a less intimidating way than purchasing shares in Taiwan (where most investors did not follow the market) but also allowed participation from local distributors who would have a built-in incentive to promote Acer computers to local buyers.

This 'borderless network of companies' would be achieved with listings of a total of 21 Acer SBUs on stock exchanges throughout the world before the end of the 21st century. In Acer parlance, this program was referred to as '21 in 21.' The program began in the summer of 1998, with the public listing of five Acer companies. The first listing outside of Taiwan where Acer Inc. was listed was in 1995 when Acer Computer International (which oversaw the distribution of Acer products throughout Asia, Africa, the Middle-East and Russia) was floated on the Singapore stock exchange. Other companies in the Acer Group that were listed on international stock exchanges included Acer Peripherals, which manufactured color monitors and keyboards, as well as Acer Sertek, a distributor of a full range of Acer products in Taiwan. Acer was intent on becoming a global player not only through international stock market listings, but also through the global expansion of its manufacturing operations.

Acer's Global Manufacturing Strategy

The Acer Group had 17 production sites and 30 assembly plants located in 24 countries

around the world that manufactured computers, peripherals and related high-tech components. In addition to the company's home base in Hsinchu Science-Based Industrial Park, Acer had established production facilities in: Penang, Malaysia; El Paso, Texas; Tilburg, Netherlands; Subic Bay, Philippines; Mexicali and Juarez, Mexico; and Cardiff, South Wales. Additional production facilities were planned in North America, Europe and Latin America. Acer was one of the few IT companies in the world that had the manufacturing capabilities to produce complete product lines.

Acer's global manufacturing strategy involved not only expanding manufacturing plants throughout the world, but also shifting the assembly of computers from Taiwanese plants to areas where the computers would be distributed. These so-called 'uniload' plants assembled Acer-brand computers as well as computers for Acer's OEM customers. This 'fast food' business model ensured reduced inventory plus a faster time to market and was more responsive to changes in local market conditions (see Exhibit 3). Moreover, being closer to the market meant that distribution logistics were more manageable and highly flexible.

Acer's 'Fast Food' Model

This approach involved moving the assembly of PCs to local sites, using components supplied by

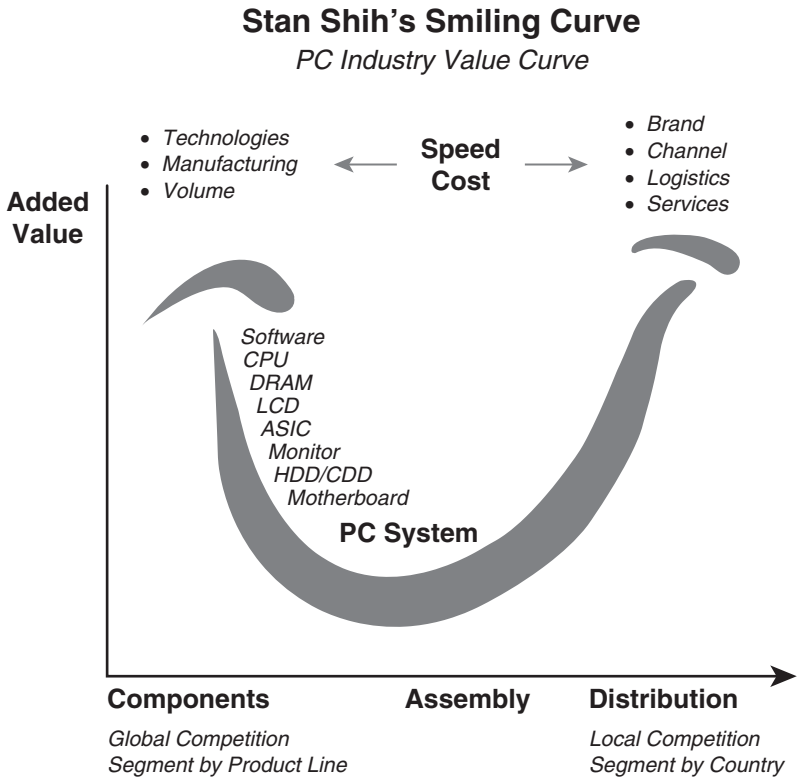


Exhibit 3 Acer's Fast Food Model

SBUs. Components themselves were referred to as 'perishable,' determined by how much was at risk if the part was kept in inventory or not available. Perishability was also used to describe how sensitive the component was to either changing technology or fluctuations in market price. These components were shipped via air freight to manufacturing sites worldwide to keep them 'fresh,' and the most 'perishable' components (such as CPUs) were sourced locally. Non-perishable components, such as PC housings and power supplies, were shipped via sea transport because their 'freshness' was not as much of an issue.

The analogy could also be used to describe Acer's 'central kitchens,' which were located in Asia and produced components such as motherboards, housings and monitors. This included Acer factories in Hsinchu, Taiwan and Subic Bay in the Philippines. A major thrust of Acer's globalization strategy involved setting up 'central kitchens' closer to the world's fastest-growing markets. In response to this, Acer was in the process of building manufacturing sites in Juarez, Mexico, to expand market share in NAFTA markets, which were slated for opening before the end of 1998. These strategically located facilities were designed to help shorten the time from component production to final product delivery.

Success on a global scale in the manufacturing realm was due in part to the customized systems Acer had established that transferred knowledge from R&D to manufacturing. For example, Acer's manufacturing management had developed fully documented procedures for project management, similar to a project flow of critical events from the conception stage through development on to the marketing of the final product. Acer had also developed a fully documented system to facilitate the phasing out of various products in the marketplace. This system provided a step-by-step guide for such procedures as how to phase out inventory of parts and product in question, how many spare parts were required for servicing, and so on.

Pursuant to Acer's fundamental principle of decentralization, the autonomy of overseas manufacturing operations was evidenced through local control of many functions such as human resource recruitment and management (under a set of general guidelines set out by head office) as well as all operational decisions, and ensuring compliance with local legal and administrative matters. Although vendor contracts were centrally negotiated, quantities and timing were decided by local managers to ensure their specific needs were met while capitalizing on head office's purchasing power.

Vendor contracts were secured at head office also so that Acer could guard its ISO 9000 Certification, which was partially dependent on the quality of inputs. ISO 9000 series certifications ensured the highest standards of quality and were recognized throughout the world. In July 1997, Acer plants were also awarded ISO 14000 Certification, which ensured that plants adhered to local environmental standards. Different countries applied the ISO regulations independently. For example, in Australia, Acer could not ship using wooden pallets, and deliveries to European companies could not be packed in polyform. Although logistics to ensure global ISO compliance was a formidable task, Acer faced many other more daunting challenges in the management of its global operations, such as multinational inventory management.

Global Inventory Management

One of the most significant challenges associated with being a global manufacturing company was inventory management. Inventory levels were predicated on market forecasts, which in the rapidly changing computer industry were difficult enough to predict accurately domestically, and were far more complicated in international markets. Inventory levels that were too high created cash flow problems, downward pressure on prices, and delayed the launch of leading-edge products when older and obsolete products piled up in inventory; this could create a chain reaction of further difficulties, including a loss of market share and brand erosion. In 1997, inventory

miscues contributed strongly to Acer's loss in the U.S. market of US$75 million on sales of US$1 billion.

In his book, *Me-Too is not My Style,* Shih used the following analogy to illustrate the challenges in multinational inventory management:

> This is like adjusting the water temperature when taking a shower. If the distance between the water faucet and the water heater is very long, it is more difficult to adjust the water temperature to a perfect level. Increasing the temperature may need 20 seconds, but one is already impatient after 10 seconds so you adjust it further again. Twenty seconds later the water will be too hot, and one has to make the adjustment again. When the product supply is far away from the market, there will always be the problem of a time lag.

Despite varying levels of efficiency in logistics and forecasting between locations, being close to the market allowed significantly greater opportunity to adjust supply to market conditions. Significantly, inventory turnover levels lowered from 100 days to 50 days after Acer implemented the 'fast food' model.

The Strategy Behind the Decision to Explore Mainland China

Traditional thinking with regard to seeking economies of scale dictated that concentrating on large markets supported volume production and, therefore, reduced operating costs. Acer's thinking to date had been that securing a firm footing in niche markets was invaluable in gaining a footing in large markets. This was Acer's 'surrounding the cities from the countryside' strategy, extracted from Sun Tzu's *The Art of War.* This war strategy involved winning large cities by overtaking numerous surrounding villages, much like the popular Chinese board game '*GO,*' where players with the most markers in the smaller cities surrounding large cities won the battle for the region by besieging the larger city. The impetus behind Acer's adoption of '*GO*' game strategy was predominantly due to the size of Acer's 'home base.' Taiwan's domestic market size and country strengths were no match for the enormous resources and size of other global players, such as the U.S.

'*GO*' Game Strategy

The '*GO'* game analogy as applied to Acer's corporate philosophy was that Third World markets represented the villages, and markets such as the U.S. and Japan were major 'cities' to be besieged through the storming of smaller villages. Acer's logic was that taking hold of these 'villages' or smaller territories would create a strong foundation on which to base Acer's assault into larger markets. Thus, development of Third World markets would actually act as a catalyst to Acer's capabilities to compete in the developed markets rather than diverting its efforts.

'*GO*' game strategy included another concept that would be considered in Acer's decision whether or not to enter the mainland Chinese market—the concept of 'long breath,' a Chinese term referring to stamina and perseverance. For a company to maintain 'long breath,' certain factors such as operational efficiency and high morale contributed; however, it was also contingent on giving up other activities to conserve energy for 'catching the big dragon.' Though highly diversified, Acer was careful to pursue only those businesses that were inter-related and developed competencies transferable to other operations.

Acer's competitive strategy was based on the development of various core competencies as a necessary prerequisite to tackling its largest competitors on their home turf for a share of the largest market in the world, accounting for over a third of the sales of PCs globally—the U.S. Acer suffered heavy losses with its foray into the U.S. market where Acer's major competitors held a distinct competitive advantage—the playing field was their home turf. Acer was more familiar with marketing in Third World countries and had a more developed understanding of both the Chinese culture and the Chinese market. This

was a prime consideration for Acer in its decision whether to pursue a higher profile in China. However, Acer management was particularly concerned with the history of strained political relations between Taiwan and China and the risks Taiwan faced in investing in the mainland.

Taiwan's Political Structure and its Relationship with China

Shortly after the Second World War, civil war in China between the Nationalists and the Communists resulted in the rise of the Communists to power in 1949. The Nationalists fled to Taiwan and, protected by the U.S. navy, developed the region based on a more democratic form of government. Over the years, Taiwan's governments became increasingly more democratic and by 1998, Taiwan's political system, business ideology and culture more closely resembled western principles than those of traditional Chinese origin.

In 1998, Beijing continued to emphatically assert that the small island was not an independent state as Taiwan had declared, but rather a province of China. This point of view was tacitly accepted by many other nations and world governing bodies as China's economic might had the power to sway countries in the West who, despite an ideology closer to Taiwan than China, saw immense opportunity in the Chinese market. And with China incrementally opening its economy, compared to the tiny island of Taiwan, lucrative opportunities appeared to be closer at hand than they ever had in the past.

In Taiwan, however, the Economic Affairs Ministry advocated a slow and patient policy toward economic ties with China. Their official policy restricted direct investment on the mainland, and strongly discouraged large, high-profile investments by Taiwanese businesses on the mainland. One of the most publicized cases exemplifying the seriousness of the Taiwanese government was their efforts to enforce their mainland investment policy on Formosa Plastics, a Taiwanese firm which, despite restrictions placed upon it by the government and the risks associated with a large capital investment in China, went ahead and constructed a US$3.2 billion power plant in China's Fujian province, only to have the Taiwanese government force it to sell the plant. Despite the risks, the mainland market remained so attractive that Taiwanese firms had invested US$35 billion indirectly in China by 1998 (see also Exhibit 4).

Commercial ties with China were not only limited by Taiwanese government policy, which discouraged investment in China, but also by restrictions on transport links across the East China Sea. It was only during the summer of 1998 that shipping links were re-established directly between Taiwan and the mainland after a 48-year history of diverting shipments south to Hong Kong before having them enter the mainland. Although by mid-1998, Taiwanese regulations allowed Chinese ships to enter Taiwan's harbor for the first time in 48 years, they still prohibited goods shipped directly from China to pass through their customs and prohibited Taiwanese goods from being shipped directly to China. This meant that while the shipping link was permitted, Taiwan could only use it for goods that were destined for international ports other than China. With regard to air traffic, all flights from Taiwan to any city on the mainland were diverted through Hong Kong, thus adding several hundred kilometres for travel between the two regions.

However, there was some reason for optimism among Acer and other Taiwanese companies planning to increase their profile on the mainland that these restrictions would be eased in the coming years. Unlike the United Nations and the World Bank, the World Trade Organization did not require statehood for membership; thus Taiwan was seeking WTO membership.

Despite a somewhat encouraging outlook, Lin could not be certain of the risks his people or the capital investments faced in China in the event that relations between China and Taiwan deteriorated further. Deciding on the recommendation to put forward to senior management was made more complicated in this environment of political uncertainty. Lin considered other factors that

Taiwan's decentralized economic model was considered an integral contributing factor in its success. While Japan and Korea were dominated by giant firms, Taiwan's businesses were characterized by their manufacturing focus and resultant agility. Whereas Hitachi manufactured everything from nuclear reactors to electric razors, and Samsung everything from semiconductors to automobiles, the majority of the thousands of entrepreneurial Taiwanese firms focused on one or two products.

Other factors had contributed to the success of the Taiwanese technological industry. Taiwan had benefited greatly from the trend in the PC industry of outsourcing. The growing market for a sub-$1,000 PC had contributed to the trend in outsourcing. For example, IBM had purchased $300 million in computer hardware from Taiwan in 1994, and that figure was expected to reach $1.8 billion in 1998. It was anticipated that Compaq would surpass this amount. Moreover, Dell Computer was expected to source all of its notebook computers from Taiwan manufacturers in 1998.

However, over the past several years, Taiwanese firms had emerged as more than simply manufacturing agents. Increasingly, Taiwanese partners were becoming involved higher up in the value chain, contributing to design, engineering, production, inventory management and worldwide logistics, making Taiwanese firms ideal partners for Silicon Valley firms.

This evolution helped protect Taiwan's economy during the Asian financial crisis. Moreover, the high-tech industry, which had so firmly established itself during the PC boom over the last four to five years was thought to have buoyed the economy. During the Asian financial crisis, Taiwan's economic growth was forecast to top five per cent. However, in other parts of Asia, companies were struggling to manage the fallout of the economic crisis: more volatile foreign exchange rates, higher interest rates, a more close-fisted lending environment, and falling input costs. For example, labor costs on the mainland were one-tenth of those in Taiwan.

Exhibit 4 Taiwan's Manufacturing Base

would determine the success of an R&D lab in China, some of which he was aware of through his experiences with co-ordinating projects between the Taipei and the Silicon Valley R&D labs.

Although Acer did not face such high profile political issues at other global manufacturing sites, there were many other issues that Acer would face in the mainland manufacturing site that it had experienced previously in the implementation of its global manufacturing strategy. An example of how Acer faced another significant challenge, that of sourcing inputs regionally, could be found in Acer's experience at its Juarez, Mexico facility.

The Juarez Manufacturing Site

The site in Juarez was chosen because of its proximity to the huge U.S. market as well as the fact that it was a twin city with El Paso, Texas. Moreover, Juarez was located in a maquiladora, a special economic zone (SEZ) created by the Mexican government, which offered tax incentives, favorable business conditions and the infrastructure to attract multinationals to the region.

Originally, Acer had been planning to import inputs from Taiwan for the Juarez plant; however, it quickly became clear that this strategy did not allow the necessary degree of responsiveness and would make inventory management more complicated, and less flexible. It would also add precariously to lead times in ordering parts. Instead, Acer, who in many cases was its suppliers' biggest customer, was able to persuade many of its vendors to join it in Mexico. This arrangement was attractive to Acer's suppliers due to the volume of business Acer could guarantee and the fact that the arrangement allowed the suppliers to manufacture for other customers. Acer's well-managed long-term vendor relationships meant that suppliers were considered family and were willing to partner with Acer throughout the world, contributing to Acer's, and in turn their own, success. Whether or not this practice could be applied in China was still unclear.

Human Resource Management at Acer's Manufacturing Sites

Another major resource that would be sourced locally at the China plant was the workforce of several hundred people. It was expected that the human resource management (HRM) policy for workers at a mainland China manufacturing facility would most closely resemble the profile of workers at Acer's Hsinchu factory in Taiwan, where almost a third of the workers were from another region (in this case, the Philippines), predominantly female, with an average age of 21 years. In China, workers migrated from urban communities in China to seek factory work in industrialized regions. They would most likely sign two-year contracts as the Filippino workers had at the Hsinchu plant; there were government restrictions with regard to mobility in China just as there were Taiwanese-enforced immigration laws with regard to foreign workers at Hsinchu. Motivation for working in the plant would be based on the financial rewards such work offered. For example, working in Taiwan was an attractive proposition for Filipino workers. At NT$20,0001 per month in Taiwan, a factory worker's salary was approximately four times that in the Philippines.

The common practice in many large-scale Taiwanese factory operations of providing dormitory-style housing and meals as well as transportation and basic medical care to workers from other regions would be implemented in China as well, where it was also common practice. Lin expected that Acer could leverage its favorable reputation to attract the best workers, as employees from other regions could be assured of fair treatment and were guaranteed a reasonable standard of living and a competitive wage working with Acer. However, it was expected that training the workforce to standard efficiency levels in a timely manner could generate significant challenges.

A highly disciplined and flexible workforce was critical for success at any of Acer's manufacturing locations. This meant that during peak production periods workers would be asked to work diligently and commit to overtime. Conversely, during periods when orders slowed, such as the summer months, workers would work light shifts. In western manufacturing plants, such as El Paso, this was fairly easy to arrange with incentives such as overtime pay for workers, because they were familiar with adjusting for capacity in manufacturing environments. In Taiwan, workers also would adjust their schedules, but for a slightly different reason. In Taiwan, workers at all levels were considered family by their employers. This meant that they were treated well and found a higher degree of job security than in North America. This relationship was reciprocal in that personal time would be sacrificed to a degree for the sake of the company. Of course, workers were given overtime pay as well; however, their motivation was partly financial and partly to aid the 'family' when their services were required. However, in China this degree of flexibility could not reasonably be assured, despite overtime pay, due to the ideology of many Chinese workers.

The communist doctrine and the environment of the state-owned enterprise (SOE) had a strong influence on the attitudes of Chinese workers. For example, a worker's pay in an SOE was guaranteed, regardless of the performance of the company or of the individual employee. The SOE system had inherently discouraged creativity and initiative, and indeed, showing these traits could create resentment and hostility among one's peers. Thus, the underlying concept behind incentives or reward programs was not fully understood by Chinese workers. Therefore, Lin felt that creating a disciplined workforce who were willing to 'go the extra mile' for Acer when required would be a significant challenge awaiting any management team in mainland China.

Beyond these training and cross-cultural issues, Acer had experienced other significant challenges at some of its overseas manufacturing plants. For instance, the Subic Bay site posed many challenges. Local authorities there were strongly recommending the hiring of local

workers, despite their unsuitability in some cases. Also, transportation logistics proved challenging. Although there were regular cargo flights right into Subic Bay, they were operated by Purolator who did not have the expertise or capacity to handle the type and volume of shipping Acer required, forcing managers to arrange ground transportation from Subic Bay to the Manila airport. Other challenges at Subic Bay included managing in an environment of political uncertainty. Finally, Acer's usual management succession plan, replacing expatriate managers with local hires, was not feasible at the Subic Bay manufacturing facility. In the Philippines, well-educated, highly experienced local managers were particularly scarce. However, at least one manager was local (the personnel manager) and there was a succession plan in place that involved the training and development of line supervisors to eventually assume a managerial capacity, which was expected to take several years. A similar, though less pronounced, succession pattern was anticipated in China, but it meant that expatriate managers could be required to relocate to the mainland for at least five years.

A critical success factor for the mainland China factory in the realm of human resources would be Acer's ability to persuade highly skilled managerial and technical Taiwanese expatriates and their families to relocate to the site for such a prolonged period of time. This was expected to be a great challenge because many Taiwanese were hesitant to relocate themselves and their families to mainland China.

First, the ideology that was taught in the schools in China was fundamentally different from that which the students learned in Taiwan. Moreover, many families did not wish to take their children out of the school system in Taiwan, where the education the children would receive would be of a higher caliber. Once children left the Taiwanese school system, it was impossible to integrate them back into the system without being set back a year or two. Providing their children with a good education, from the very beginning, was important to parents in Taiwanese culture, so much so that it was not unusual for professionals in Taiwan to move their families to the West for schooling, while they remained in Taiwan to make the money to support the family abroad.

Second, a repatriated manager often found that upon his return to Taiwan, positions of equal opportunity and status were difficult to find, and being away reduced a manager's profile. Thus, other executives quickly perceived that an international posting was, more often than not, a career-limiting move. Consequently, repatriated executives often were recruited by competing companies to serve as their overseas business heads. Combined, these two factors resulted in not only a loss of valuable talent to Acer, but also a void in experienced overseas executives. Several years ago, Acer had extended the term of its management postings overseas to five years or more, but it was difficult to persuade skilled executives to move themselves and their families abroad for that period of time, especially to countries where Taiwanese and their families were less than eager to relocate.

Other difficulties, such as cultural differences, were expected to affect long-term relocation to mainland China, and it would prove challenging to recruit experienced, highly-skilled Taiwanese management. Despite the fact that Mandarin was spoken by both Taiwanese and Chinese, the two cultures were very different. Indeed, many Taiwanese considered their culture, background and experience to be more similar to the West than to that of China. This would mean great adjustment on the part of both the manager and his family.

Another adjustment to life on the mainland would be the fact that many amenities freely available in Taiwan were scarce in China; consequently, in addition to adapting to a new and diverse culture away from their extended families and network of friends, employees and their families would also have to adjust to a lower standard of living. Thus, many employees did not have the desire to move anywhere that took them away from their parents and other family members because family ties were strong

in the Taiwanese culture. Finally, the security of the Taiwanese was not fully guaranteed in China due to the political and regional social unrest.

A critical part of the location strategy for Lin was to pick a location that would be safe for expatriate workers and their families who would be required to relocate there for a period of several years:

> Though input costs, distribution logistics and tax incentives are, of course, fundamental factors in my decision, the most important factor is the safety of my employees. For example, during my tour of Shenzhen, I noticed that all the taxi cabs had bullet-proof shields to protect the drivers.

The safety of the Taiwanese in China had received much media attention in recent weeks. The kidnapping and murder of a city councilwoman from Taiwan in a northeastern coastal city in China, and the mainland's subsequent handling of the event, caused Taiwanese businessmen to take extra precautions in their business dealings in China. The quasi-official Straits Exchange Foundation (SEF), which had tracked almost 200 cases involving Taiwanese businesspeople's personal safety in China over the last several years, discovered attacks, robberies and extortion as well as kidnapping and occasionally even murder. The most recent case had involved a Taiwanese investor in Shenzhen who had been beaten to death on July 27, 1998. This prompted calls from the Taiwanese public for the Mainland Affairs Council (MAC), which charted Chinese policy, to establish a warning system for Chinese-bound businesspeople and travellers, as well as a rating system that gauged the extent of the risk in various cities and regions within China based on the general crime rate and the proportion of incidents that involved Taiwanese expatriates.

The Briefing To Senior Management

Lin had prepared an analysis of these factors, but exactly how China would fit into Acer's global manufacturing strategy would require further exploration. Lin saw validity in both sides of the argument. On the one hand, the economies of a move to the mainland were apparent. Moreover, a manufacturing operation could be a platform on which to expand Acer's presence in the huge China market for either existing or new product lines. On the other hand, there were serious issues that could adversely affect Acer's economic return on any investment on the mainland. For example, uncertainty regarding cross-strait political relations created a risky business environment for Taiwanese companies investing heavily on China. Was the infrastructure sufficient to ensure effective logistics? And what about the opportunity costs associated with such a large investment-was Acer missing out on more lucrative opportunities or were there alternative locations that would better suit its manufacturing needs? Other critical factors on which the decision would be based involved the safety and difficulties involved in the transfer of the expatriate workforce, the disparity between the two cultures, as well as environmental certification concerns.

For Lin, this dilemma could be distilled into one principal question-had Acer secured enough 'villages' to enter China, or was it too soon and would Acer risk being surrounded by opponents and falling to its competitors in battle?

Note

1. US$1 was equivalent to 33.2 New Taiwan dollars.