

Motorola in China, 1986-1996:

The Duties of the Global Economy

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Principal Interviews

U.S.A.

Bob Galvin, Chairman of the Executive Committee

Gary Tooker, Chief Executive Officer

Rick Younts, Executive Vice-President, Asia and the Americas

Carl Lindholm, Executive Vice-President for International Operations
(retired), and former Chairman of Asia-Pacific and China Task Forces

Chi-Sun Lai, President, Motorola China Electronics Limited (retired)

Travis Marshall, Director of the Office of Government Relations (retired)

Dan Szymanski, Corporate Vice-President, Cellular Infrastructure Group
(retired)

James Austgen, Corporate Vice President, and Director of HR, LMPS

Rick Chandler, Corporate Vice-President, Cellular Infrastructure Group
(retired)

Garth L. Milne, Senior Vice President and Treasurer

Motorola University

Bill Wiggenhorn, President

Leo Burke, Director, Center for Management and Organizational Learning

China

P.Y. Lai, President, Motorola China Electronics Limited (MCEL)

C.D. Tam, Senior Vice-President, Asia-Pacific Semiconductor Group

Jason Lum, Vice-President, Director of Human Resources, Asia-Pacific

Patrick Choy, Vice-President, Director of Corporate Finance, Asia-Pacific

C.A. Lim, Director, Corporate Supply Management, MCEL

Gilbert Lee, Vice-President and GM, Cellular Subscriber China, MCEL

C.P. Lee, Director of Human Resources, MCEL, Tianjin

C.K. Lin, Site Manager and General Manager, Semiconductors, MCEL

Tianjin

Motorola in China

1. Introduction: Financial Capital or Intellectual Capital?

By 1997, Motorola was first in every major market in which it competed in the People's Republic of China--especially cellular telephones and pagers--and maintained the largest presence of any global company operating in the country. Motorola's rate of growth here had been unprecedented: the company was under \$250 million in sales in 1992, and reached \$1.5 billion in 1994. It expected to be at \$10 billion by the year 2000, though it missed that target, as it missed its other global targets, owing to strategic decisions in its product development--decisions which have been widely debated and were hardly portended by the company's initial and spectacular growth in wireless markets. Motorola employed 3500 people in China in 1995, it employed 8500 in 1997, and expected to employ more than 10,000 by the year 2000. Motorola's sales, plant complexes and other construction projects accounted for about 25% of the gross annual product of Tianjin in 1997, a city of eight million. Motorola was leading the development of advanced wafer production in the PRC; the company expected that China would become a major point of entry to the supplier bases of global automobile companies, particularly for semiconductor products.

Motorola's growth in China was so impressive, in fact, that it is possible to miss what the numbers actually teach, not only about the company and China, but about the new terms of competition in emerging markets more generally. It is a deceptively simple lesson, and a familiar one in companies that have invested boldly in quality or in the new information technologies during the past generation--namely, that growing intellectual capital is a precondition for growing financial capital, not the other way around. A company that invests in the knowledge assets that support operations in emerging markets--in the competencies, know-how,

technologies, and renewable learning systems of employees and local suppliers--can lay the foundation for significant financial returns. But the same company would probably not even enter such markets if its investments had to clear conventional capital budgeting (that is, ROI) hurdles, or rely on conventional marketing projections. Needless to say, staying out would be tragic. Places like China (and India, and Vietnam, and Brazil) promise millions of trainable people, tens of millions of potential customers--and serious opportunities for profitable growth.

All great corporations must attend to both competencies and margins--they must be, in their way, both mentor and financial analyst. Carl Lindholm--who was Executive Vice President of International Operations, and who chaired Motorola's Asia-Pacific Task Force in mid-1980s--observes that there is a "productive tension" here that can never be made to go away. But the question is, which priority will be higher? Which will drive strategy? This is not an academic question. It has an impact both on investment choices and the way the corporation organizes itself to make them. The case of Motorola in China shows that a great company is forced to make choices between cultivating intellectual assets and protecting financial assets at every turn; choices between, on the one hand, investing in skills, people--the future--and, on the other, taking profits from short-term advantages. Motorola set about developing opportunities in mainland China with considerable human assets, in particular, senior managers (many of them ethnic Chinese) who had gained experience running company operations in Malaysia, Hong Kong and Singapore. Still, it was clear from the start that the development of human assets would be of critical importance in China. And the questions around which company choices worked out reflected this priority. Three stood out: they still pertain to entry strategies in virtually all emerging markets:

- Should Motorola enter into joint ventures with local enterprises in developing countries, thus assuring quick, privileged access to currently established markets and employees, or, should the company hold out for complete independence, for a wholly owned subsidiary that can set its own quality standards and teach its own employees?

- Should Motorola invest significantly in mentoring future employees, customers, and suppliers, in building infrastructure for teaching (and even housing) employees, or, restrict itself to selling from an array of existing communications products to clearly surfaced consumer segments? How, given the first alternative, does the company negotiate with the government? What, given the second, is the worth of conventional market research?

- Organizationally, should the Motorola corporation give free reign to its businesses to invest in (or refrain from investing in) emerging markets as they see fit--to sell only to identified consumers of their products worldwide--or, should the corporation try to coordinate investment and sales on a country-wide level, that is, present a "single face" to an emerging national market?

None of these questions have unambiguous answers. As Lindholm looks back at it, the corporation's present, enviable position in China is the mixed result of "planning, good performance, happy accidents, and even some positive failures." Still, it is already apparent from a first decade of work that it was important for Motorola top management to have decided early on what the company's main principle of action would be. "In retrospect," Lindholm says, "we are lucky that Bob Galvin, the corporation's Chairman, had a vision of providing the Chinese a whole new level of excellence--we

are lucky we stuck to *that*, not to the typical 'no-risk' way which was, arguably, Motorola's former approach to emerging markets."

Galvin's vision entailed a moral dimension, moreover. Very much like Motorola's investments in 'total quality' during the late 1970s and 1980s, the company's investments in China have been premised on a radical (and agreeable) assumption, that doing right would mean doing well. The company, Galvin believed, should be a part of a great social transformation. If managers would deliver the greatest possible value to customers, and, simultaneously, cultivate the greatest possible skills in employees--if, indeed, they communicated their commitments both to employees and to customers (in this case, including Chinese government officials)--then competitiveness would follow. But then it would be competitiveness in an improved world.

The ideal may sound vaguely romantic, but China proves how it was not. Galvin insisted that in Motorola facilities throughout the People's Republic, the new attitudes and skills entailed by a sense of duty to "the customer" would help spread a business culture of greater personal liberty and scientific doubt. Eventually, the mere presence of advanced technology businesses, doing what they do, would amount to both commercial progress and political good: people would learn, if at all, by example and one at a time. Nor is it hard to find ways Galvin's ideal is already being realized. The fact is, there could be no continual quality improvements in Motorola products and services without, in effect, a "democracy wall" in every factory and office; in Motorola's immaculate facility in Tianjin, employees encounter a huge banner that says (roughly translated), "Speak up. We need your ideas." P.Y. Lai, the President of Motorola China Electronics Limited, puts the matter colorfully, and in a way that is meant to provoke thought: "The company's strategy for China," he says, "is sincerity and love." Building intellectual capital really means investing in human beings.

2. *Beginnings: The 'Scouts'*

In improvising on Bob Galvin's vision, Motorola people have surfaced important and original ideas about the tasks of entry in difficult new markets. But before asking "how China," we ought to understand "why China"--why did the company decide to enter the PRC at all? That decision, in retrospect, was by no means an obvious one. Prior to the 1980s, virtually no foreign country permitted private sector competition in two-way radio communication, and Motorola had been understandably focused on U.S. markets. Even by 1984, only about a quarter of the company's sales were outside the U.S.--and this part was *shrinking*, owing to a strengthening dollar, inconsistent quality, and, in Carl Lindholm's words, "a misplaced arrogance" with respect to international markets in general. As for China, Lindholm recalls, the company had barely sold a few million dollars worth of equipment by 1984--"our share of a minuscule market was 'microscale.'" Besides, it was in the nature of Motorola's businesses, historically, to be a close supplier to government security forces. Bob Galvin was naturally very cautious about Motorola becoming a supplier to what had been an orthodox Communist regime.

During the late 1970s and early 1980s, however, a confluence of personal and business experiences, involving a number of veteran Motorolans, led to a change of view. Of these people--Galvin calls them the "scouts"--four were probably the most important: Dan Szymanski, who pioneered China's two-way radio market, and, crucially, brought in Rick Chandler to scope out Chinese manufacturing competencies; Patrick Choy, whose 'contract bridge diplomacy' led to early meetings with top Chinese officials; C.D. Tam, who formulated early on a semiconductor strategy in which the PRC would be essential; and Travis Marshall, who, in exploring the political preconditions for mobile communications around the world,

also helped prepare the ground for China. By 1984, their experiences (among others) encouraged the corporation's policy committee to investigate the China opportunity more rigorously, a process that culminated in Carl Lindholm's report of the Asia-Pacific Task Force in March of 1985. It was Lindholm who finally said: "Get in, don't just put a toe in the water." His report set the stage for Bob Galvin's decisive visit to China in the fall of 1986.

Pioneering sales, assessing manufacturing. Dan Szymanski first became intrigued with China during W.W.II, when he was stationed (prophetically enough) as a communications specialist in a town called Shanguan, in Yunan province, near a Chinese customs station. There, he befriended a dozen or so Chinese officials who could all speak English: "It was a wonderful exposure to this intelligent and communicative people, and they came from many different parts of the country. We would cook for each other and individuals would talk politics--if, that is, no other person was present. They were already sensitive to the Communists' heavy hand."

Szymanski returned to the U.S. in 1946. In 1964--after nearly fifteen years in Motorola, where he'd focused on several efforts to sell abroad and especially into Latin America--he was asked by Bill Weisz to collect information on how other companies developed their foreign activity. (Weisz was then Vice-President and Assistant General manager of the Communications Division; later, during the 1970s, he shared the duties of the chief executive with Bob Galvin, and John Mitchell joined both in the office of the CEO in 1980.) Szymanski worked on this question for nearly a year. His initiative, among others, led to Weisz's presentation to senior management arguing for a step which, in effect, was the company's first toward globalization: "Weisz argued for dissolving the Motorola Overseas Corporation, a separate sales division for foreign countries, and for forcing each of the businesses to take on their own international responsibility."

The idea carried. Szymanski was put into the Communications Division, and continued developing distribution channels in Latin America and Indonesia, then Singapore.

By the late 1970s, the time was ripe for a preliminary exploration of the Chinese market. The company had hired Robin Maule (from British Airways) to the Hong Kong office. Szymanski, now Vice-President of International Distribution in the Communications Division, recruited him to help develop and expand sales on the mainland. "The Communications Division was growing its business in more parts of the world more rapidly than the other operations--with the exception, perhaps of the Semiconductor Division which was much smaller, but growing at the speed of its technology," Szymanski recalls; "But that was fine, because someone had to generate the money with which to pursue the new businesses. This had been a successful pattern in Motorola for a long time."

People from the Hong Kong office weren't allowed into the PRC until 1979. When entry became possible, Motorola was fortunate to have secured the services of Kay Wai Cheung. "He was always apologizing for not having any technical know how," Szymanski warmly recalls, "but he was actually a super salesman, establishing many important relationships." Kay Wai Cheung approached civilian enterprises that had never thought about how radio might enhance production communication, and told them what Motorola had to offer. He found promising markets for paging systems and two way radio systems, mainly in various agricultural and industrial sectors.

Though sales never amounted to more than a few million dollars in the early 1980s, Kay Wai Cheung's relationships became very important later on when cellular was introduced. He kept a low profile, and got to know communications officials in Shanghai and Beijing. (The latter were cautious; they did not want to seem to be giving too much business to one

company.) At the same time, the success of the paging business in Hong Kong attracted official interest in the PRC, especially when pagers with Chinese characters became available. Szymanski and Kay Wai Cheung believed the market for all sorts of communications products would explode. They also found the PRC in a paroxysm of change: "In 1979, everyone was wearing the 'Mao suit,' it was all one color, all gray, all the same," Szymanski remembers. "By 1981, there were colors, men wearing western style suits. I became convinced that what the top people said didn't matter so much matter as what these ordinary people did, finding ways to make things happen without attracting too much attention."

Little of this enthusiasm was shared as yet by senior Motorola management, incidentally. Bob Galvin was very concerned with the kind of systems sold in China, and was absolutely determined not to help the military of a hostile power. "He insisted on knowing to whom we were planning to sell," Szymanski remembers, "and wanted personally to hear the nature of the operation that would be using radio." For their part, Chinese officials proved very interested in attracting companies like Motorola, though much more for their production know-how than for any of their products--another pattern that would repeat itself. Szymanski began to enter into discussions with the Ministry of Machine Building, which oversaw the production of capital equipment in the PRC; officials were eager to have Motorolans look at their factories. "They were interested in having our kind of company come and rescue their various factory operations, because they were not operating very effectively. They employed thousands of people, and were looking for us to come and provide jobs."

In 1983 and then again in 1984--with a view to exploring just such opportunities--Szymanski organized a trip by Motorola manufacturing expert, Rick Chandler. "This gave us two eyes and two ears," Chandler recalls; "the Chinese would have anywhere from eight to fifteen

negotiators, and Dan wanted someone to bounce ideas off, compare notes. I had also set up factories abroad, in Mexico and Puerto Rico, so I was expected to be fairly knowledgeable about the Chinese ability to manufacture, and more important, our own ability to transfer our ideas into their culture." Chandler made an intensive tour of approximately 30 Chinese facilities, with Kay Wai Cheung acting as translator. What Chandler found did not inspire confidence: "They thought they had joined the leading edge of manufacturing, because of a number of Japanese joint ventures. But what Japanese managers had done is simply set up lines and mechanize them--this was older generation technology, by the way, sold at exorbitant prices--and they told the Chinese workers what buttons to push, giving them virtually no knowledge. The Chinese thought they had technology. In reality they were acting like robots. When I asked them why a certain machine was selected, or how it worked, or what to do when it breaks down, they had almost no comprehension."

Things were even worse with respect to manufacturing strategy: "They had no inventory methodology, no inventory planning. The government told them to build 10,000 TV sets and they went out and bought the parts for 10,000. They had no concept of factory coordination, no idea of first-in, first-out, no routines for changeover, no paper trail to follow production trails, no tracking of inventory turns, no audit of work-in-progress. Wave soldering machines were virtually unused, because people had not mastered them. And they certainly had no concept of quality. They just kept 'fixing' any defective product until it worked. They had no statistical records of their machine output. In one factory in Shanghai, they were retouching about 75% of the soldering leads in order to make their radios work. In another TV factory, failure rates at the factory were in the 20% range, and failure rates in customer hands were the same--this in a country that had a terribly underdeveloped transportation system, so that if a

product did break down, it would be almost impossible to send it back to, say, Beijing for repair.”

Chandler continued: “Managers were mostly political appointees, often from the army. Younger managers, 25 to 30, people who had been through the cultural revolution, had virtually no technical training, and made a point of never being involved in manufacturing or industrial engineering. And yet, because of their national pride, most showed a real reluctance to listen to suggestions. They resisted my idea that they teach statistics to senior management. They wanted people to come in and do everything for them; if you told them they would have to *learn*, that was a real negative.” Chandler’s conclusion was unequivocal: “If we were going to produce any product Motorola could stand behind, we could not allow joint venture partners to control the process.”

In fact, at Szymanski’s urging, Motorola’s mobile communications business had already begun exploring the possibility of a joint venture with a Nanjing radio company called Panda (now, also a television and computer manufacturer with growing brand equity). Chandler was more impressed by what he saw there than at any of the other production facilities. “At least they had people who were of an older generation, who had experienced manufacturing and were willing to learn.” But on the whole Chandler’s tour of Chinese factories had the opposite effect of what the Chinese government had hoped and established an important principle of action for all later negotiations with it. “I made it very clear,” Chandler says, “that I would not participate in anything other than a wholly-owned subsidiary; otherwise, we could never produce a quality piece of equipment. The subscriber group had tried making handsets, and often found themselves with a rejection rate of 40%. How could we possibly manufacture infrastructure components?” Szymanski was just as adamant: “No way could Motorola use any of those factories for our operations,” he recalls; “It was just impossible to operate there. It became apparent that if

we were going to do anything there, we would have to have complete control over the kind of activity that was involved. I reported all of this to Bob Galvin.”

Bridge diplomacy. One of the earliest and highest level contacts with the PRC government came as a result of an unlikely passion, Deng Xiao Ping’s love of contract bridge. And the unlikely channel for this passion was Patrick Choy, of Taiwanese parents, who was born and raised in Hong Kong. Choy served from 1969 to 1981 in various senior financial positions for Motorola semiconductor operations in Asia. But more important, Choy was an avid bridge player and for many years harbored the hope that bridge might become more popular in China, a country with a high respect for intellectual games. Choy knew that senior Party officials in the PRC were keen on bridge, and were hoping to promote the sport on the mainland too.

Indeed, they were. By 1980, Deng had requested that the State Physical Culture and Sport Commission support the newly created Chinese Bridge Association. Wan Li, a Vice-Premier, became its president. Deng himself became Chairman Emeritus, which is the only official title he retains to this day. The PRC also began pressing for international competition and exposure--but the problem, Choy recalls, was Taiwan: “At that time, in 1980, there was no way you could have peaceful co-existence between China and Taiwan in any international organization. The World Bridge Federation and the Far East Bridge Federation only recognized Taiwan. China therefore could not participate in official international tournaments.” A solution to this impasse became possible when leading Hong Kong players, including Choy, organized an international tournament. They invited a strong team from China, but excluded Taiwan. When, in 1981, Choy organized a second tournament, he was given the impossible task of inviting participation from both China *and* Taiwan.

Thus began Choy's first experience with regional diplomacy, which would eventually carry over into business matters. "I became the messenger back and forth, for both sides, to try to come up with a compromise." Eventually, he advanced a plan of organizing a tournament by city--"so you represented Beijing or Taipei, not China or Taiwan." Choy recalls that he received "lots of attention for being the middleman and organizer." Indeed, the 1981 Hong Kong Inter Cities Bridge Tournament was the first official meeting of Chinese from Taiwan and the mainland since the inauguration of the PRC in 1949. The historic breakthrough made Choy "a lot of friends," including Deng Xiao Ping, Wan Li, Li Tie Ying, Ding Guan Gen, Li Lan Qing--and many other senior government officials. Such acquaintances helped Motorola establish important contacts in the early years, and also taught the company much more about the PRC. "Having this contact in the early 80's, I began to understand mainland China more and more," Choy says; "I saw a big opportunity, for everybody, for the whole world: China was really coming out from under this one hundred per cent communist style, and isolation from the rest of the world. Deng sought economic well being for China as a way of securing the power of the party."

By 1982, Choy had been promoted to serve as corporate finance manager for the whole of Asia-Pacific, a position from which he got to know Jack Hickey, the corporation's CFO. Choy saw, and reported on, a regime seriously devoted to an open door and modernization. Indeed, Chinese leaders had made clear to him in various contacts that foreign companies from capitalist countries would be a welcome part of the new "solution." ("It doesn't matter if the cat is black or white," Choy reported Deng's famous saying; "if it catches the rat, you've got a good cat.")

And Motorola, in its turn, was coming around to the need to investigate China more seriously. Szymanski's modest business with China in mobile communication was making an impression. In view of what Rick Chandler

and others were then concluding about Chinese manufacturing capabilities, the exploratory negotiation with Panda was not going to lead to any successful conclusion; but the negotiation itself was a chance to learn more and signal potential commitment. Choy was asked to become a part of the negotiating team. As if anticipating the growing opportunities on the mainland, he was just around this time completing a diploma degree program in Chinese law.

A new strategy for semiconductors. Until 1996, C.D. Tam was the Senior Vice-President and General Manager of Asia-Pacific's Semiconductor Group; his office overlooked "Silicon Harbor" in Hong Kong, and he held this position, with various title changes, since 1980, when he was the first Chinese national to be given a job of this importance in the Asia-Pacific theater; even today, though about 45% of Motorola's workforce is "international," more than 70% are "direct labor." So Tam, now General Manager of Transportation Systems Group, looks back at the company's entry into the PRC with enthusiasm and enormous personal satisfaction. He was there from the beginning.

"The Motorola Asia-Pacific Semiconductor Group has always been run locally, Tam says; "We had a different perspective on how to develop the region." What Tam understood was that the region would be driven by the "four tigers," or "four little dragons," as his Asian colleagues had called them: Hong Kong, Taiwan, Korea, and Singapore. That was where the macro-economic conditions were best for high growth; that was where Motorola's high technology and communications businesses would be most successful, and would require new infrastructure. "By the mid-1980s, operations in the 'four little dragons' grew to be twice the size of the Japanese operation," Tam smiles.

But how to sustain this growth, and how to sustain profitability? Tam's goal was 40% growth per year, every year; rates of profit in Asia-Pacific

were the highest in the world. Conventional markets were not promising. Many of Motorola's semiconductor competitors (though not Motorola) were bailing out of Europe and Japan, where markets were intensely competitive and labor other costs rising sharply. "And so when the corporation was learning the importance of the 'four little dragons,' we in the semiconductor division were already asking, What's next?," Tam recalls. The market could only grow so much in Singapore, with two and a half million people, and five and a half million in Hong Kong.

The key was to tap into a larger population, which would add significantly to company resources (markets, employees, etc.), but "which would not add significantly to social costs"--the costs of providing a social safety net for employees--and would allow the company to get comparatively low cost land for multiple production investments. China, with its huge market potential, its (albeit, limping) welfare state, and its relatively cheap real estate was an obvious place to look; in the early 1980s, social costs seemed satisfactorily covered by the PRC's Communist educational, housing, and medical system. And yet China was not just one opportunity, Tam insisted. When the Asia-Pacific region as a whole was seen as growing around the drivers of the "four little dragons," different parts of China had to be considered differently.

"Obviously, Hong Kong and Taiwan would try to get low cost land, and tap into 'low cost people,' in South China, just over the border from Hong Kong. I favored this, too. It was like combining Silicon Valley with Mexico--a zone that was politically different but economically unified. Average per capita GNP would be over \$3,000 U.S. per year." The northern zone, around Korea, was another matter, however, and required a different approach. The hinterland, here, was an area dominated by Beijing (and Tianjin), and required an even more direct engagement with the PRC government.

“China, we saw, would play a huge part in two of the three economic zones in which we hoped to be active in the production and marketing of semiconductors,” Tam reflects. “We saw that mainland Chinese would not have the purchasing power to buy much unless they got the ability to export, but we felt we could make a contribution here, help these zones develop, give China the ability to sell into world markets, which would, in turn, stimulate and strengthen their domestic markets.” Tam was certain Japanese and European companies would follow suit. He was also impressed by the tremendous number of investments in the PRC coming from “overseas” Chinese like himself: some 80% of foreign investment was coming from the Chinese Diaspora, investment which, say, India sorely lacked. No investment, no export, no export, no domestic growth.

To be sure, nobody saw the PRC as a place where levels of semiconductor consumption would be high for many years. But the PRC might at least be an important way to reduce the costs of manufacture for export into all Asia-Pacific markets. Labor and other factor costs in the North China/South Korean zone was much lower than in the south. And so long as the national government kept to its “free-zone concept,” the Chinese market, too, would be growing: “As long as they had a viable export market, that is, funded technology, financed by some outside players, China’s economic income would just keep accelerating,” Tam believed.

Besides, Tam insists, the company did not have the choice of growing in the northern tier by continuing investments in Korea, the way it grew in the south by increasing investments in Hong Kong. Koreans did not speak the same language as the Chinese; and there were also diplomatic problems between North and South Korea in which China was now playing a contradictory role, drawing closer to the South for economic reasons, without ever having abandoned its ideological commitment to the North. On the whole, it simply made more sense for Motorola to go into China directly, and without venture partners who might then become

competitors. This became Tam's position, which he began to advocate, though he tended to remain focused on expanding opportunities in the South, in Hong Kong's hinterland. He continued to do so, strongly, after he was appointed to the Asia-Pacific Task Force in 1984.

The politics of two-way radio. Through much of the 1970s and 1980s, Travis Marshall was the head of Motorola's Office of Government Relations in Washington, where, since his retirement, he is still a consultant. In 1989, he was appointed United States Ambassador for the International Telecommunications Union Functions by the Bush Administration; from that position he helped countries all over the developing world, including China, understand the significant benefits of liberalizing and even deregulating telecommunications.

Marshall's career spans a unique shift in technology and political economy. The world that he confronted in 1980 was significantly different from the one we know today. Prior to 1980, only a few countries allowed private mobile radio; bandwidth was generally reserved only for police and other public safety officials. Moreover, in most countries, a single communications ministry ran the telephone company, all broadcast and narrowcast radio, and the post office. Asking ministers to allow for competition in mobile communications meant, as Marshall reflects, "selling them on giving up their power." The result was that Motorola's market was very small outside of the U.S., and was largely limited to public safety sectors. Marshall saw his job largely as one of trying to increase Motorola's market potential in foreign countries, including developing countries.

In the late 1970s, Marshall began a program of selling the economic benefits of private, two-way radio for improving the productivity of industrial management. What he discovered was that spectrum management hardly existed in developing countries, and that even in more advanced countries there were few if any markets in two-way radio for

Motorola to enter. “We began to explore the productivity benefits of radio and found that, to open the market, we would have to get governments to change their rules. It is not that these people were protectionist. But for many countries there was a fear of private people having radios in their hands. So we began to talk to governments about the importance of spectrum management, about the importance of managing the resource. We found them more receptive to this approach.”

And along with spectrum management, Marshall began to speak to potential customers, usually high officials in the communications ministries of foreign governments, about collateral reforms--deregulation, competition, privatization. “The French thought deregulation meant ‘chaos,’ so we spoke instead of ‘liberalization.’ But the message was consistent. We encouraged privatization, which we said would prompt capital markets to support the new, competitive industry. This all proved especially true in cellular systems, though cellular didn’t really get going until 1985.”

Motorola was one of few companies in the world willing to tackle these subjects in all of their political complexity, and Marshall encouraged the FCC and the Departments of Commerce and State to “pick up the ball,” which they did. No other company had had so much opportunity to think through how communications policy should migrate away from state control. And though Marshall was tailoring his message to governments in industrial countries, it resonated with certain prescient officials in China, who had learned much from the Hong Kong model. Marshall had had experience speaking to the governments of industrial countries about deregulating a virtual monopoly they were loathe to relinquish. In effect, then, he had been rehearsing the specific arguments for Motorola’s entry into Communist China even before the Chinese government, or Motorola senior management, for that matter, were really receptive to them. As far as telecommunications policy was concerned, virtually every country in the

world had government owned and centrally managed telecommunications; they needed persuasion to see the benefits of competition from independent companies.

“It turns out that in what we were trying to overcome, China was very little different from many other countries in the world,” Marshall reflects. “At that time, out of 150 countries, probably 125 had tight government control. Today, it is still well over half. Of course, with most of them, we only broke through the outer wall of the forbidden city. I don’t think we got all the way to the courts.” The key, from the beginning, was to establish lasting and personal relationships at a senior level. And this, Marshall insists, meant gaining credibility as a company that could focus, not only on markets for communications products, but how to lay the ground for a market economy itself.

Accordingly, Marshall made several trips to China in the early 1980s, and came to know a number of key officials in the Ministry of Posts and Telecommunications. “You don’t go into a country and say, ‘Here’s what to do.’ You say, ‘Here’s what *we* do, and it works.’ This is pretty much what we did in China.” To be sure, Marshall’s early presentations on spectrum management did not interest a large number of Chinese officials in the Ministry. They agreed that, in Marshall’s words, “spectrum management was becoming ‘the thing to do,’” and came to respect Motorola for sharing their expertise on the subject. But, as Marshall remembers it, it was premature to speak to them of telecommunications competition and privatization, not so much because Chinese officials resisted the free-market theory behind it, but because of the potential effects on civil society. “Private mobile radio--who would be private?” Marshall asks rhetorically, thinking of those days? The whole subject would have to await a deepening commitment to the cultural preconditions for information sharing outside of rigid government and state company hierarchies as US Ambassador. As U.S. Ambassador,

Marshall particularly got to know his Chinese counterpart for the ITU functions, the Vice-Minister of Posts and Telecommunications, Zhi-Yuan Song, new his Chinese counterpart for the ITU functions, who would remain a close friend of Marshall's--and Motorola's.

Eventually, Marshall came to emphasize the narrow productivity benefits to be gained by applying two-way radio to business enterprise. "When we were in China, we concentrated on using Motorola radio products for transportation, manufacturing, etc. We had a slogan, 'Three trucks with mobile radio does the work of four trucks without.' We had our story down pat, and it was a good story to listen to." Marshall also worked with a U.S. government team to have Motorola's TACS standard for analog cellular adopted in China, which it eventually was (although, like the rest of the world, China is now also moving toward a new digital standard).

All of these people--Szymanski, Chandler, Choy, Tam, and Marshall--cut a path to China. Without fully understanding the implications of their actions, they were preparing the ground for others to follow, and much sooner than any of them had expected.

3. Lindholm's Asia-Pacific Task Force, 1984-5

Nobody played a more pivotal role in organizing Motorola's China entry than Carl Lindholm, the chairman and primary author of the report of, the Asia-Pacific Task Force of 1984-85, and the person who would oversee the company's relationship with relevant PRC ministries and with the government of Tianjin until his retirement in 1990-1. China was, he smiles, his "shot at making history." It was also an occasion to help reshape the governance of the company.

Lindholm had been well-positioned to try doing both. From 1971 to 1974 Lindholm had been Assistant General Manager of the Communications

Division, which included all current cellular, paging, and two-way radio divisions. ("It was a time we were staking out all the cellular ground.") He then, during 1975-6, served a two-year stint as Corporate Director of the corporate staff. Later in the 1970s, Lindholm took over as General Manager of the Automotive and Industrial Electronics Group. He was a man, in short, who knew the company, and had the confidence of its leadership: Bob Galvin, the Chairman, and Bill Weisz and John Mitchell--the "triumvirate" at the top of the corporation. He also shared their activist temperament.

What spurred Lindholm to action this time, in 1984, was a growing sense at the top of the company that Motorola was "ill-prepared and headed for trouble" in Asia-Pacific generally, and that half-measures would only make things worse. The problem of Asia had been aired in July of that year, at the company's inaugural Senior Executive Program. The subject was "Asia-Pacific: Its Market and its Challenge." A group of about 25 key vice-presidents, including the whole of the policy committee, had been addressed by experts, consultants, academics, and industrialists, about what was really happening in Japan, Korea, Singapore, and Hong Kong. "Interestingly enough," Lindholm recalls, "not a great deal of attention was paid to China and India other than to comment on their size and consequent potential." A consensus had emerged at SEP that senior management should follow up. So Galvin, Weisz and Mitchell took what was for Motorola the unusual step-- modeled on something Westinghouse had done--of appointing a task force to study opportunities in Asia.

The Asia Pacific Task Force was charged in November of 1984. The Group consisted of John Battin, Senior Vice-President and General Manager of Portable/Paging/Components Group, Communications Sector; Dick Heimlich, Vice-President and Director of Japanese Relations; Bill Howard, Senior Vice-President, and Director of Research and Development; Don Jones, Assistant CFO and Treasurer; Malik Kahn,

Director of Business Planning, Information Systems Group; and Jim Norling, Senior Vice-President and Assistant General Manager of the Semiconductor Group. Lindholm, an Executive Vice-President, was appointed its chairman.

And the charge went as follows: "Viewing the world from a global perspective, what additionally can we do to assure that we will be successful against existing Japanese based competitors and emerging ones from Korea, Taiwan, Hong Kong, and Singapore? How can we protect/increase market share in the U.S. and Europe, while increasing our penetration in the appropriate Asia Pacific countries?"

Clearly, China was not yet uppermost in the minds of APTF members when the work began. But things began to change as their deliberations continued. The APTF was empowered for three months, full-time--its members were given no other assignments, and they were co-located in Schaumburg to insure dedication to the task at hand. ("We couldn't even talk to our organizations which for the most part we headed," Lindholm recalls.) The work consisted of interviewing Motorolans, government officials, academics and industrialists in the U.S., Europe, and the Far East ("that's what we called it then") and to conclude with a report outlining recommendations.

The APTF reported to the Policy Committee of the corporation March of 1985. The committee included, among others, Gary Tooker, who was then General Manager of the Semiconductor Products Group, and Jack Hickey, Motorola's CFO. All in all, the APTF wound up making about one hundred recommendations, organized around a dozen or so major categories--"a number that were particularly prescient," Lindholm recalls with pride, "including considering getting back into some consumer electronics businesses." But most important, in this context, was the recommendation to "get much more heavily involved in several 'leveraging' markets, particularly China."

By “leveraging markets,” Lindholm meant markets in which Motorola could expect to get enormous leverage from its distinct technology. First, of course, was the sheer size of the China market. But, second, the market was such that Motorola’s particular expertise was going to be a particularly good fit. “We were just perfect for that world,” Lindholm recalls; “Communication for people on the move--cellular, digital, all of that--where land-line communication was terribly primitive. With cellular, they could have an excellent, if limited telephone system almost immediately. And we had manufacturing expertise, which they badly needed.”

The report of the APTF was unanimously endorsed by the Policy Committee almost immediately. In 1985, just after the Asia-Pacific task force reported, Jack Hickey visited China, and Choy was asked to accompany him. “I saw Jack as a sort of Henry Kissinger, investigating the possibilities for Bob Galvin the way Kissinger did for Nixon,” Choy recalls. “Obviously, Motorola had already planned to take a very serious look into China.” Choy showed Hickey around, and introduced him “to the right people.” The trip included Beijing and Shanghai.

Then, under Lindholm’s direction, the first step toward a full-fledged China initiative came in 1985 with the appointment of Harris Twanmoh to the new position of “country manager.” Twanmoh had worked as a national manager for ITT, and then left the company to set up his own business in Taiwan. He was the son of a prominent writer, and appeared to have excellent contacts, especially in Shanghai. Lindholm was pleased to hire him and had great hopes for him, though he found his bearing somewhat “patrician.” The corporation also established a China ‘country council,’ located in Hong Kong, which included C.D. Tam, Patrick Choy, Robin Maule, and others.

Lindholm, Twanmoh and the Council began to work assiduously, meeting officials Marshall had been in touch with, especially people in the

Ministry of Electronics Industries (MEI). The most important was Li Tie Ying, the Minister of MEI. Lindholm met with him in California, at a meeting of the Electronic Industries Association. Eventually, he and Travis Marshall hosted him in Washington, D.C. "Lee Tie Ying was a rising star in the 'new look' China hierarchy," Lindholm recalls. "It turns out that as an engineering student he had worked admiringly with Motorola semiconductor devices, though the fact that he had studied in the Soviet Union makes the question of their sourcing 'interesting'; anyway, he was now in love with the 6800 microprocessor."

Lindholm, Twanmoh, and the China council also began to take some predictable flack, as other senior executives in the company began sensing that something very new was afoot in what still seemed a rather exotic and forbidding place, an initiative that had been in the foreground of their interest, and which could not yet be coherently explained. The China team's most important task during this time was, in any case, not to answer skeptics, but to lay the foundation for Bob Galvin's trip in 1986. Until Galvin acted, no initiative in China could take on the force of a new strategic direction.

4. The Critical Milestone--Bob Galvin's 'Track B,' 1986

Having sent out his scouts, Bob Galvin prepared to see things for himself. He had reflected on the APTF report, and had heard much from Lindholm and Hickey. By the fall of 1985, he had become convinced that there was a particular promise in China--"and a few other places in the world."

It had taken some time for this conviction to sink in. The problem had been to separate the business opportunity from the political fashion. "I am a modest student of geopolitical affairs," Galvin remembers; "I watched China, as an amateur. I studied what I thought was discernible about the society's economist thrust, and I also tried to understand the historical

culture of the Chinese people. Other CEOs had toured China in late 70s and early 80s. But I had little interest in doing so. There was no particular intelligence associated with my reluctance, it was just a choice. I had no direct feel of China.”

As 1986 approached, however, Galvin’s associates’ reports persuaded him that the time had come to get a sense of things at first hand. Lindholm’s special enthusiasm for the fit between China’s needs and Motorola’s strengths had made an impression. “These good people said, ‘Bob, you really ought to get over there,’ so I planned a trip for the spring.” Accompanying Galvin would be his wife, Mary, Carl Lindholm and his wife, Louise, Harris Twanmoh (and a number of other’s from the China brains-trust, including Patrick Choy). Also going would be Galvin’s son, Chris Galvin, who had already assumed significant executive responsibilities in the company; and who often advised his father, representing a younger generation of leadership. The decision to ask Chris along was loaded with symbolic meaning, moreover, and it gives a clue to how high the father’s hopes were in spite of all determination to be governed by reasonable restraint. In inviting his son, Bob Galvin wanted to show Chinese officials that Motorola would be there for the long-haul, that he saw whatever commitment he made as passing from generation to generation.

Unexpectedly, however, the spring trip had to be postponed: Chinese cities were experiencing a rampant epidemic of hepatitis, and Galvin did not want to risk anyone becoming exposed to the disease. So Lindholm suggested a new time, the fall of 1986, which would be convenient all around; a new date was set, the last week in October. “It proved to be a lucky postponement,” Galvin insists, though luck may be not be the right word to capture what he did with the unanticipated opening produced by the postponement; for all along, in his various ruminations on China, was a question which he knew would be difficult to sort out with Chinese

officials--the same question, in a way, that Marshall had had to confront, and which had frustrated him, in making the case to various governments for open competition in two-way radio. Would Motorola, in China, ever have the freedom to do things the right way? The company might make some money, but could Chinese officials be brought around to the company's determination to make things excellently?

Galvin did not feel ready to meet these questions squarely in the spring of 1986. All major global companies to that time had negotiated entry into China through some joint venture or another with a local Chinese enterprise. Again, Motorola had itself been talking to Panda in Nanjing about a manufacturing relationship. But as Rick Chandler had made clear, there was no way Motorola could strive for rigorous production quality in an existing Chinese factory. Moreover, Chandler had done one more service when he had got back to U.S. from China in 1984. He made some telephone calls. "There was all this momentum among American companies to set up joint ventures," Chandler recalls, "or so we were told when we were over there. But when I called around to the companies whose names were dropped in various conversations, I discovered that negotiations were mostly surfacing issues that had not been resolved. Only Coca-Cola had actually moved forward with a JV, but this was there approach to bottling everywhere. Other than Coca-Cola, I counted fewer than ten. Dan reported this to Bob, too. The Chinese had *no* electronics joint ventures; the deals with the Japanese were 'kiss-and-tell, and allowed Japanese companies to sell parts. In fact, the Chinese really did not know what to negotiate; once when we trying to feel them out on the purchase of land, we discovered after several days that they thought we were going to actually dig up the earth we bought and move it somewhere. The cultural differences were enormous. How could we become minority partners with this kind of management? They were counting on the world coming to their door."

So Galvin was skeptical that Motorola management would be able to serve customers in the relentless way the company was now teaching its employees to do if it had to share responsibility with PRC managers who had no knowledge of advanced manufacturing. The joint venture route took shape in Galvin's mind as the sorry conventional wisdom-- a kind of "Track A." But given the nature of the Chinese regime, could one hope for a "Track B," a wholly owned subsidiary, for example, like the highly successful one developing in Israel? A subsidiary that would take advantage of China's famous brainpower, and be operated according to the same quality strictures as Motorola facilities everywhere else?

Incidentally, Marshall and Lindholm had, at times, raised the ideal of a "wholly-owned" approach with various Chinese officials. They had suggested that Motorola might be "different" than other global companies. Lindholm, who had spoken with Li Tie Ying in California, even suggested that Motorola would reject a joint venture relationship, and the Minister, sensing a new approach, actively sponsored Galvin's trip when he heard Motorola's CEO would be coming. Still, official conversations had always proven inconclusive. When Galvin and his associates prepared to set out for China in October of 1986, it was hardly clear that Motorola would be positioned to do anything more than, in Lindholm's words, "test the water." It certainly seemed certain that company would make no dramatic commitment.

All of this changed in the days before Galvin's party was set to depart for Hong Kong, the first stop on their journey to the mainland. Suddenly, we were reading the newspapers about a new policy," Galvin recalls with a continuing air of excitement, "the so-called, 'twenty two points of liberalization,' or some such thing, which had just been announced. It seemed to me a *Magna Carta* of free enterprise for China. It said, in effect, 'Come to our country and run your own business; be a big success and we won't interfere with it.' I decided that this represented a tremendous and

unique opportunity to do something radically different. We, Motorola, should respond with something that would be responsive to their radicalism." It was the prod Galvin had been waiting for.

Actually, the "22 points" that Galvin speaks of were the "New Provisions for Foreign Investors," who 22 articles were announced on October 11. This document stipulated many land use provisions and tax holidays for "export-oriented" and "technologically advanced" enterprises. Among favored enterprises would be not only net earners of foreign exchange, but "[local] production enterprises possessing advanced technology supplied by foreign investors which are engaged in developing new products, and upgrading and replacing products..." They may also "in accordance with their organizational structure and personnel system, employ or dismiss senior management personnel, increase or dismiss staff workers." Within the context of these provisions, a whole new style of management might be tried. (See the Appendix for a complete text of the "New Provisions for Foreign Investors").

The 22 articles, however significant, were only a part of a continuing series of economic decrees that signaled a deeper and even more significant political intention. During much of 1986, as the China scholar Merle Goldman points out, Deng had committed to unprecedented steps in advancing Chinese civil society: a professionalized civil service, new policy of political checks and balances, a new tolerance for debate. "It did not so much matter what specific economic points the government decreed, for officials would always ignore their own legalisms to achieve larger ends" Goldman says; "what mattered was the new political direction on which the Chinese leadership had embarked: one of greater liberalization and personal economic freedom."

Since 1986, Motorola managers have, again and again, learned the truth of Goldman's insight. The willingness of Chinese officials to overlook (or, at least, broadly interpret) the details of what has been negotiated in order,

say, to accommodate Motorola's goodwill in areas such as technology transfer has been a linchpin of the company's success here. But there has been, of course, a darker side to this pattern of putting good ends above good means. The regime's direction has, as Goldman says, regularly led to heightened demand for reform from Chinese intellectuals and liberals; its ambiguous attitude toward legal means would inevitably result in a crackdown. "This pattern emerged in December of 1986, then again, of course, with Tiananmen Square in 1989," Goldman recalls. Ironically, the very attitudes that have justified an economic pragmatism so welcome in the West have also prepared the ground for unwelcome political coercion.

But all of this is hindsight. The only thing that could be certain in Galvin's mind by the fall of 1986 was that a good end had come into relief; and that with a little audacity the scope of Motorola's activities might be appropriately focused. China, like all developing countries, usually insisted on joint ventures; Galvin was convinced that this would be a mistake. "But how do I convince them the first time that I see them not to do things that way? I only had sixteen days. On the spot I said, 'Well, I've got to induce these people to give attention to this.' We've got to throw some boldness at them, we've got to throw some surprise, some common sense."

What Galvin hoped to do was change the rules, something "we had developed the inclination for, and some talent for," he remembers, not without a hint of mischief. "The first step in the execution of any strategy is to rewrite the rules. We've been doing this for 25 years in other places."

The Galvin party was scheduled to visit Shenzhen, Shanghai, Nanjing, Beijing, and Xian, and meet with very high ministerial officials. Galvin's chance to try to rewrite the rules came on his first official day, when he met with representatives from the Ministry of Railroads (in effect, the Ministry of Transportation). Galvin was to spend an hour with the Minister, Ding

Guan Gen; they were to have a ceremonial discussion to speak about two-way radios for the Chinese railway system, and to consummate an order that pioneering sales people had sold. However, the ceremonial part of the hour took only forty-five minutes, and Galvin, sensing an opportunity, asked if he could take up the last fifteen to pursue a wholly different question:

“ ‘Sir,’ I asked him, ‘why is it that you are so hospitable to lots of companies including ourselves? Is it because you would hope--and this is perfectly honorable--that we would come and bring some new products and services and technologies that would bring your excellent country up to a new level of support? Do you want to have country a little better than you had before, a world of your own, with a billion people? Or do you really intend to be world-class?’ Well, what’s a guy going to say to *that* question? He’s not going to admit that he doesn’t want to be world-class! I said, ‘Well, thank you very much, I’m very pleased to hear that, I think that’s good for the world. But I respectfully suggest, sir, that you’re not going to make it.’ ”

Thinking back on this gambit, Galvin is more satisfied than ever that “delicacy” was not the way to get his hosts’ attention. “When you are dealing with a major issue, sometimes you’ve got to really challenge somebody, you’ve got to clip him a little, so he’ll know that he’s dealing with someone who’s going to be forthright.” Galvin went on to explain to the Minister that a policy of joint ventures was not the “world-class way of doing things”: “The country needed new role models. One cannot change a country overnight, but if people have examples to point to, then you can say ‘Look, it’s only a matter of time.’ ” Galvin then made a radical proposal. If the PRC government allowed Motorola to come into the country and run its business completely on its own--subject to state law, of course, but its own land, buildings, staff, policies, tools--everything--then Motorola would make a one hundred million dollar investment in China

immediately. The company would invest \$50 million in a semiconductor factory, and \$50 million in a two-way radio factory (i.e., one component factory and one equipment factory). "The minute that those two plants open they will be looked upon as the finest plants in their business anywhere in the world," he promised.

Galvin had not consulted with anyone before making this proposal, nor had he discussed it with his board. But he knew he had to give the minister "something to think about"; it seemed clear that if a CEO and major stock-holder had prerogatives, this was a time to exercise one. "If you're going to lead an institution like this, from time to time you must engage in acts of faith. The point is not to be cavalier: you are working with principles; you must be confident that you are the best. But you must be able to say that things are doable." As for the risk, what was this as compared to the history that was everywhere being made in the country? "If the Chinese were to back out, and the deal were to fall through, well, that would mean a hundred million dollar write-off. But the consequences would be much more serious for the Chinese. The point is, the *benefits* would be very positive."

The word spread quickly. Everywhere Galvin's party went for the rest of the trip, the story of his conversation with Minister Ding preceded them. Galvin remembers a subsequent dinner with Jiang Zemin, now the president of the county, then the mayor of Shanghai. Galvin wound up sitting next to him, and was pleased to discover that he spoke English quite well; the two men talked a good deal, especially about plans for developing the country. Finally, Galvin told him, "Your honor, you talk more like a capitalist than I do!" To which Jiang Zemin responded: "We Marxist-Leninists are very pragmatic; if it's the right thing to do we decide to support it and do it." The entourage also met with Zhu Rongji, who would be appointed mayor of Shanghai after Jiang Zemin (and who would go on to become the highest ranking vice-premier and economic czar during the

1990s), Li Tie Ying, and a score of other vice-premiers, ministers, and vice-ministers in highly visible settings. Daily newspaper accounts of the trip became more the rule than the exception. "Before Bob's visit, we were at the ministerial level," Patrick Choy recalls; "after Bob's visit, we were with the state leaders. If this were a horse-race, you'd have wanted to bet on us." In October 1987, Jiang Zemin, Li Rui Kau, Li Tie Ying and Ding Guan Gen were promoted to become members of the Politbureau of the Chinese Communist Party.

In consequence of these meetings, Galvin became convinced that Party officials would be receptive to Motorola's technologies and style of operation never before tried. This was a chance to "come in big," as Lindholm had suggested, yet remain true to the company's heritage. (Later, Lindholm would meet with Zhu Rongji in Scarsdale, New York, at a cocktail party sponsored by the Asia Society. Lindholm took out his cell phone and, on the spot, the two of them dialed up Zhu Rongji's brother, who was then the mayor of Shangdu. The point was sealed.)

"When we've done things differently from anybody else," Galvin reflects, "we've pivoted off a simple principle: Think about the customer. The government of any host country is thinking of joint ventures because people figure that's what's best for the country. They'll put workers to work; that good for the country. But they're putting the wrong thing first. In fact, what's best for the country is to have the right people running the company and doing the right things so that the product is superior. When you start to ask what's right for the customer, everything else becomes secondary. Deal for the customer--don't compromise. Motorola would probably not have done much in China had they not let us put customers first. Motorola has stayed out of countries for decades--most of South America, even Israel until they changed their rules--because they were making it impossible for us to serve our customers."

After two weeks, Galvin and his party returned home. By degrees, in early 1987, Galvin, Lindholm, and the others began to refer to Track B as a shorthand for both Galvin's logic and his spontaneous proposal. Specifically, Track B meant six central ideas:

- Motorola's investment in China would be wholly owned by Motorola;
- the investment would cover all of Motorola's businesses;
- Motorola would have total freedom to hire and fire, compensate, and set work rules;
- Motorola would have no interference from or be subject to the outside labor agitation of unions when it came to the internal running of businesses;
- Motorola would set up its own sales and service in all parts of China;
- Motorola's presence in China would be "forever."

Galvin had left the country feeling that there would be no real opposition on the Chinese side to trying out his approach. And, as things proceeded, there would be none, except perhaps with respect to the question of whether Motorola could buy land outright; Li Tie Ying provided Motorola allies at the Ministry of Electronics Industry, and the company would indeed be able to own its buildings and hire the people it wanted.

The more immediate skepticism came, ironically enough, from people in the company. "I was credited with a clever thesis," Galvin says, "but there were no real offers from the people running the businesses"--not to put up any of the money or devote much time. "Everyone was too busy; no one wanted to be the guinea pig for this kind of new venture." The most palpable foot-dragging came from the semiconductor group, which in spite of C.D. Tam's plans, could barely see a market in China. Senior managers were concerned about new capacity selling into already pressured markets in Asia and were, even more reasonably, skeptical about setting up a clean

manufacturing operation under such questionable conditions as the ones Chandler and others had reported.

The semiconductor group's response was particularly discouraging to Galvin and Lindholm, since conversations with the Chinese about Track B's promise often turned on semiconductor process technologies, which the Chinese were lagging in. The government was particularly eager to have Motorola help in developing the country's semiconductor sector. But then, were market conditions obviously attractive to any of the other businesses? Conventional market research, which focused on Chinese "consumers" as individuals, had disclosed that Chinese had virtually no disposable income. Could they be expected to buy pagers and cellular telephones the way Germans and Japanese did?

Galvin was adamant, and still is: "Among the principles I had to learn, studying the history of the telecommunications industry, was that everything that had ever been predetermined about the size of telecommunications was underestimated. It was always bigger and better than we thought it could be." What to do about understandable resistance? "When it comes to something new like this, the majority of the people in authority resist the major sea changes," Galvin recalls. "There had been a recession in 1985, even layoffs. By 1987 it seemed clear that the 'wall' would be coming down in Germany, everything was happening in Russia. So there was a lot of resistance to China. But Carl [Lindholm] was avid. You just have to overwhelm resistance."

And create new forms of coordination. Largely owing to Galvin's own architectural strategy, Motorola had for a generation governed itself on the basis of local autonomy, divisional autonomy. "In their own businesses, two-way radio people had world power, semiconductor people had world power," Galvin acknowledges; "Each product goes to market in separate ways." But how to put one face to the customer? "We had to proceed by letting each business run its affairs in China and cooperate as much as

they could stomach it," Galvin says; "but we did do one thing that I thought was significant--we employed an organizational approach in China something like what we had done in Japan, where Rick Younts insisted on coordination to break open the market and overcome trade barriers."

What Galvin was referring to was that China, like Japan, would have a country manager who would work closely with Lindholm in the U.S. China would become a critical test of matrix management, in which the line of reporting to the head of the business in the U.S. would be complicated by a new line to the head of the foreign country operation. "We could not let the divisions all run independently and wild," Galvin says; "we needed a Mr. Here and a Mr. There." Motorola would also have to commit Motorola's own people to the tasks of teaching and managing in China under extraordinary conditions. "Part of our success was that we knew we had human resources available that probably would fit some assignment at least for a short period of time--many Chinese who would want to help rebuild the mainland. We played our hand strong: our rules on their playing field. Our strategy was a timely and effective application of available resources. We optimized our resources to serve our customers."

Galvin advocated for one more thing, though it would not come to be realized under his watch. He thought it would be prudent to set up an emerging markets trust fund, which various businesses could draw from when, at the request of the corporation, they invested in China (and certain other emerging markets). Managers of businesses who could not make a clear business case for a China investment could then take the step without being overly anxious about the risk. Lindholm concurred: "The corporation said, 'Go out and cultivate emerging markets; this will be independent of the P&L of every operating division.' You see, it takes a special kind of person to manage in a matrix organization."

What now seems clear is that Galvin had seen a business opportunity alloyed with a noble cause and he could not resist the challenge; he also saw that the company would not come out of it the same company it was when it went in: “Our corporate objective is to someday earn the recognition of being the finest company in the world. What the hell does that mean? Well, it’s everything. Let everyone define it in his or her own way.” The great satisfaction is in teaching quality. “We write a report, yearly, for the Ministry of Electronics Industries. These reports go all the way to Jiang Zemin. And then we hear Chinese communist officials reiterating the very thing we’re saying. That we have to take Motorola’s concepts of excellence and introduce them all over China.” But there is also a healthy dose of self-interest here. Without such excellence, Chinese markets cannot advance, and without advance, Motorola products cannot be sold. “We would enhance the ability of customers to afford our product. We would create a larger opportunity for ourselves,” Galvin insists; “The history of Motorola is creating industries and creating markets.

C.D. Tam recalls looking out at the mainland from a balcony on Hong Kong harbor just before Galvin’s trip was about to begin: “ ‘See this place across the border?’ I said; ‘In the future it will be full of factories.’ Bob said, ‘You’re right. China is the country.’ Then he asked if I would have any objection to offering profit-sharing in any factory Motorola built. I suppose he was thinking about what he might offer the Chinese government the following week. I said, ‘Not a problem, I am a typical Chinese, profit and loss is important. Your problem is that you’re a spiritual person. You talk about culture. We talk about profit and loss.’ ”

5. Working The Foundation: Bright Hopes, Dark Days, 1987-1990

“Mr. Here,” Carl Lindholm, and “Mr. There,” Harris Twanmoh, began organizing to implement Track B in early 1987. The task was fraught with

difficulty both here and there. In the first place, the Lindholm appointment to the position of Executive Vice-President for International Operations was--aside from an earlier, special arrangement to manage Japan as a national market--the company's first serious effort at matrix management, with global business managers and a national coordinator each trying to drive the policy agenda. Individual members of Motorola's Policy Committee, many of whom ran worldwide businesses, could readily agree to an abstraction called the APTF report, or Track B; but once any plans for China threatened to constrain their businesses' freedom of action or span of control, agreement became inertia. Turf was turf. As for the Chinese, Lindholm recalls, "the operative levels of government bureaucracy weren't crazy about some new hare-brained approach dreamt up by some liberal minister run amok." Lindholm and Twanmoh would, under the best of circumstances, each have had their work cut out for them. But the best of circumstances did not materialize.

Lindholm began to address attitudes in Motorola early in late 1987, by organizing a new task force, made up largely of mid-level executive vice-presidents, whom he took to China in January 1988. Working with him were Patrick Choy and the human resources director for Asia-Pacific, Tim Niesc. The purpose of the trip was both to acquaint these managers with the territory, and to give them the chance to assess alternative sites that might be offered up as a place to start manufacturing and office operations; among the criteria for site selection were proximity of educational institutions, quality of the labor force, and so forth. The Chinese had recommended Shanghai, Xiamen, Beijing, and Tianjin, though the last possibility was clearly the one the government preferred. The executives were suitably impressed: they came home, in agreement, that it would be possible for Motorola to set up facilities in China that would produce at a world class quality standard, and at the good cost levels C.D. Tam had predicted.

After a period of reflection, Tianjin was indeed selected as the likeliest spot, and Lindholm began to negotiate with the Tianjin Economic Development Authority, or TEDA, over land and other preliminary matters. "The determining factor," Lindholm recalls, "was the enthusiasm and professionalism of the Tianjin officials. Their effort was actively supported by the mayor, Li Ki Yuan, who was subsequently elevated to a high position in the central government and remained a staunch friend." But another virtue of Tianjin was its location--close to Beijing, physically and intellectually--and in what might be called a community of interest that would tend to co-opt the central government. Besides, as C.D. Tam had observed, Motorola already had a major presence in the South--"and Taiwan is a sort of middle presence." The north had one more virtue, in Lindholm's view: the farther one got from Hong Kong and the south, the farther one got from a business environment in which various kinds of pay-offs and enticements to local officials were common. "It is my feeling that the potential for running into requests of a questionable nature diminishes in the area around the capital, at some distance from the southern border."

But embarrassments along these lines are not easy to avoid at first, no matter how scrupulous the company's policy. As Lindholm worked his side of the Pacific, Harris Twanmoh found Motorola's embryonic operations caught up in a couple of misadventures related to China's cellular infrastructure markets, things that seem innocent enough in retrospect, but which at the time proved disconcerting. In the first case, Motorola was falsely suspected of improprieties. In the second, it was Motorola that accused others of improprieties, a charge that could not be proven, and which finally cost Twanmoh his job.

To understand the context of the first episode, it is important to know that the cellular market was then becoming very active--"it began to

explode,” as Szymanski recalls it--but in a particular way. Cellular had been booming in the U.S., but in China, Motorola was still selling something under \$20 million in two-way radio. And though prospects for China in cellular were improving dramatically, customers were mainly provincial officials awarding cellular system contracts on a provincial basis. Szymanski explains: “Market studies were of little value--what ‘consumers’ would you talk to?” The key was in hands of government officials--they awarded infrastructure contracts, and government owned enterprises would be buying the phones. “And if you governed your plans by what the people running the government were saying, you wouldn’t have started anything. You had to believe there would be changes in their thinking. It was an extremely negative environment.”

Things came to a head early in the province of Guanzhou. The government had invited bids for a cellular system. Motorola’s main competitor was Ericsson. But how to approach the Guanzhou government committee that would be making the decision? This proved a delicate matter, which the Motorola people who moved in to make the deal proved too inexperienced to handle.

The story, as Szymanski tells it, is a complicated one, and is best appreciated against the backdrop of the submerged rivalry that had evolved back in the U.S. between people selling the new cellular telephone systems and equipment and the mobile communications (i.e., two-way radio) sales force, out of which Szymanski himself had come. The radio business had incubated cellular’s research and development over many years; and mobile communications had developed a large and highly competent sales organization that pursued various specialized markets--agriculture, trucking, and so forth--by applying specialists to the various market areas. “But cellular ‘infrastructure’ was selling a *telephone* system,” Szymanski continues, “and its sales people had recently split off from the mobile communications division sales force; the people who ran cellular

infrastructure sales had decided that people from mobile radio did not know enough about telephones to sell business--which the radio people considered a heresy. There was hard feeling."

In due course, the sales force responsible for cellular subscribers also split off from mobile communications. The people leading this new force did not know much about government diplomacy. "The guy in charge was the kind of person who, when he wanted something, bulldozed it in--and he wanted to move into the China market," Szymanski laments; "He decided he didn't need salesmen, but would rely solely on development engineers. He hired a Chinese consultant out of New York and took him to Guanzhou; the consultant went to see one of the Guanzhou committee members at his compound, which was carefully watched. The poor fellow on the Guanzhou committee was not offered anything under the table, of course, but he was compromised just by having someone visit him from a supplier organization. It was a dumb thing to do."

The sad result was that Guanzhou committee couldn't vote for Motorola just to prove that no bribe *had* been paid. Ericsson got the contract; and Motorola, which had hoped to brandish its reputation for absolute integrity, was spoken about as the cause of a minor scandal--all of which was communicated back to the Ministry of Posts and Telecommunications in Beijing. "They essentially put us on the black list," Szymanski winces; "I told the guy who hired that consultant, 'We've spent ten years developing personal relationships here, and you people have come in and you've destroyed them.' "

Robin Maule, who had been running the Hong Kong office, and was meticulous about any hint of impropriety, felt so embarrassed by this turn of events that he subsequently left the company. "We had gone through many years presenting Motorola as a company that refused to pay under the table, that would not condone any kind of activity in which someone in the government could benefit as a result of sales. In this area we were the

abnormal ones. Ericsson had no inhibitions along these lines. But they got the contract, and we got the reputation. It was heartbreaking.”

There would be another serious embarrassment along these lines, only this time it was Motorola that raised the specter of pay-offs--rashly, as things turned out. The problem was the Shanghai cellular market. Motorola had done an earlier experimental system, and Twanmoh was certain that a major contract would be in the offing. “He thought his influence here was unassailable,” Lindholm recalls. But, alas, no contract was awarded to Motorola. In a pique, Twanmoh endorsed a letter written by one of his subordinates accusing officials in Shanghai of being “on the take” of Ericsson, one of Motorola’s competitors.

“The letter directed accusations against people who were responsible for making judgments on who the supplier would be,” Szymanski remembers; “It accused people of taking money under the table, of not giving Motorola a fair deal.” Nothing could be proved, though. And as if making a reckless charge was not serious enough, the Shanghai officials who were the target of the charge proved to be close associates of the Minister of Posts and Telecommunications, Yang Tai Fung. Fung, Patrick Choy explains, was in turn a close factional supporter of Premier Li Peng, who was then, and until the chaos of Tiananmen Square, the target for mounting accusations of corruption. Charges were flying everywhere, Choy recalls, and the attack on Shanghai officials was, indirectly but surely, perceived to be an attack on Li Peng himself. “We were lucky we were not kicked out of the country.”

Twanmoh had assumed that his personal contacts would be very valuable to Motorola, and they were--“though never as valuable as he perceived them,” Szymanski says. Lindholm recalls the affair sadly: “The Chinese people generally--and in this regard, they are a little like Germans--like to see the rules of battle, the order of engagement, who’s responsible for what, and so on, and if *you’re* responsible, then *I’m* not. The country

manager could not help stepping on others feet, and Twanmoh's rather aloof bearing did not go down well with many Motorolans." In any case, senior management agreed that Twanmoh's intervention in this crucial matter was lead-footed, and that Lindholm would had to step in himself before things got further out of hand. Submerged disagreements about how and in what way it was appropriate to deploy contacts in the Chinese bureaucracy also came to a head. Lindholm offered profuse apologies to the Minister of Posts and Telecommunications. Twanmoh left Motorola. C.D. Tam for one, considered this an important step in the right direction. "He (Twanmoh) thought that 'anything goes' to get results. He didn't realize that he was working for Motorola, that it had a unique culture of its own. He thought he could make things easier by leveling the playing field. But he didn't see the big picture."

Lindholm determined to make the best of a difficult situation. It was clear to him that the country manager's position would be critical, but that the person filling it would need to have not only a sense of mission with regard to China, but also have deep appreciation for Motorola's *modus operandi*. Nor did Lindholm have far to look. Chi-Sun Lai, a person Lindholm had known and admired from various common business assignments--indeed, who had worked for Lindholm for ten years in the automotive products sector--had already begun to work on the China Task Force, and had always seemed to Lindholm the ideal candidate for the country manager's job. Lai was then Group Manufacturing Director of Automotive and Industrial Electronics. The question was, could he be persuaded to take the job in Beijing?

Lai had been born in China, and had been raised in Taiwan during the Second World War. By the time Lindholm approached him, he had lived in the U.S. for over 30 years, eighteen of which he had spent with Motorola in various capacities: business director, general manager, a Corporate

Vice-President in the Automotive Division. He had been eager to go to China because he felt the automotive market there was becoming “mature,” while cracking the Japanese market seemed a forlorn hope. So late in 1985, he went to China to do a license agreement with an enterprise in Shanghai: “We wanted a door opener for our electronics product: ignitions, regulators, fuel injection, and so on.”

Around this time, Lai and Lindholm (whom he had known at the automotive division) began discussing emerging markets, and both agreed that China would be one of the countries to key on; and in late 1987, Lindholm asked Lai to be one of the people to join his team on several Chinese trips to evaluate the investment environment and identify potential sites that we were going to establish operations in China. So by the time Lindholm approached Lai to take the country manager’s job, Lai knew the lay of the land, and had already signaled a strong interest in making the China operations a success.

“The offer was interesting,” Lai reflects; “I believed in China’s market, and if I were to be successful, I could do a lot to help the Chinese people--that meant a lot to me.” Still, Lai had serious reservations. He knew this would be work under the most frustrating conditions, his wife was uncertain, and he also knew that few people in company shared his enthusiasm--“no structure and little corporate support.” Lai talked with many people and came away even more discouraged. “Most everybody’s attitude was, ‘How can you guarantee that the political environment isn’t going to change?’ They wanted to guarantee a return on their investment if they made one. But how could I give them a guarantee.”

Apprehensive, Lai went to talk with the father of the project, Bob Galvin, who was just in the midst of handing management of the company to a new team to be headed by George Fisher and Gary Tooker. Galvin assured Lai that he was himself the one who was really behind the ‘going into China’ project. And then he said something more: “Bob told me he would

be investing \$50 million," Lai recalls warmly, "but that he himself would probably not see China become a big market in his lifetime; that his own father had started things he did not live to complete; that he had taken his son Chris to China because he wanted to let the Chinese know that Motorola was starting something the next generation can enjoy. Bob argued that semiconductors, communications--all of these technologies--were just really starting up. He asked me to looking to the next generation: what can we do that we can be proud of? What has potential to help both Motorola *and* China, benefit both sides, which is the way it must be if there are to be long term benefits?"

Lai continues: "I said to him, 'That's fine, the job is meaningful to me, but what if I go there and we try like hell and work like hell and in the end I cannot get any money back to you. I lose the \$50 million--not because we do a poor job, but because of the political environment or the regulations maybe, what not.' I told him that's what everyone was asking me--'How can I be sure to get the investment back?' I didn't know how to answer that question. So Bob says, 'If that happens, then Motorola will have lost \$50 million. Next quarter Motorola will have to write off 50 cents, so that we will be earning 25 cents instead of 75 cents a quarter. The stock will drop a lot, but it's not going to kill the company. And, if in the process of doing so, you are able to get both sides, China and the U.S., thinking closer together, then \$50 million will not have been wasted.' " Lai took the job.

Lindholm believes that Lai's decision to become country manager was so crucial to Motorola's ultimate success here, that he considers the various embarrassments that served as prelude to Lai's coming to Beijing as a blessing in disguise. "His acceptance by Chinese officialdom was absolute," Lindholm recalls; "They greatly admired his honesty, trust, understanding of their problems, and his tenacity and ability to cope with

the hydra-headed behemoth they discovered Motorola to be in the process of our filing an application to do business.”

But there were other positive developments resulting from the difficulties with Shanghai officials. Events gave Lindholm a chance to draw on the help of many powerful friends who had viewed Motorola with favor over the years. In interceding with the Minister of Posts and Telecommunications, they, in effect, proved the company’s latent power with the senior bureaucracy. “Also, the problems with the Minister gave us a slight aura of being the ‘prodigal son,’ and gave them the chance to display great generosity and largeness of spirit, something that, in a way, increased personal affections.”

At the same time, the apprehensions Lai had expressed before taking the job--apprehensions that were widely shared among all China enthusiasts--helped bring to climax a corporate initiative that would prove vital to the success of the China entry. This was the “Emerging Markets Program,” the first important initiative taken by Fisher and Tooker regarding China. It put \$100 million behind investments in China, India, and Brazil, though China was the clearest target for the money. “They were smart psychologists,” Lindholm insists, “because they realized they weren’t risking anything like \$100 million. The major baronies would shrink from accepting ‘corporate heroin.’ But lower level troops, now, couldn’t put off initiatives in emerging markets protesting that ‘the sector can’t afford it.’ “

Nevertheless, Lai found the beginning of the road as rocky as he had expected. The company had to start putting together a sales force, a service center, a college relations system, and manufacturing facilities. It would have to start hiring employees, but under what ground-rules? Many government officials would still have to be persuaded of the merits of Track B. Under the leadership of Patrick Choy, Motorola began to negotiate its financial conditions, which were stringent: Motorola wanted to finance a lower percentage of its investment from equity than the

regulation stipulated, and to enjoy different tax holidays for different operations. Motorola wanted to have guaranteed access to foreign currency at a fixed rate of exchange. However, the biggest stumbling block, even for officials from Tianjin, was a provision in the PRC constitution to the effect that every enterprise must have union representation. In May of 1988, before Harris Twanmoh had departed, James Austgen had replaced Tim Niesc as HR director, and had been tasked with engaging the Labor Ministry to try to come to an agreement over the issue. It seemed at first to be mission impossible. "There were other issues," Austgen explains, "foreign exchange issues, whether we would be manufacturing for the Chinese market or for export, whether we would be permitted to hire people directly or be forced to hire through a government agency--but all of these seemed resolvable with persistent negotiation. The problem of the union seemed intractable, especially to people from America with a certain attitude toward constitutional life, because we had what seemed a direct conflict between a long-established, and world-wide Motorola policy--a policy whose logic sprung directly from the best of company culture--and the written constitution of the PRC."

The first compromise Austgen proposed was that Motorola be given a twelve to twenty-four month opening to hire directly, pay directly, and establish training programs--generally foster Motorola culture--and then poll Chinese employees regarding whether or not they wanted future union representation. Tianjin officials were "more than willing" to give this a try, Austgen says. But the Labor Ministry in Beijing would not go along. Not that the ministry was constrained by articulated labor law comparable to what familiar in the West: a clear body of court precedent, clearly drafted legislation, catalogued volumes of researchable opinion, and so forth. On the contrary, as in most emerging markets, the Chinese law was sketchily written and subject to change and reinterpretation day to

day, region to region, “meeting to meeting.” But the question of unionization nevertheless seemed so intimately connected to the spirit and mandate of socialist political economy that it would be impossible to concede on any basic condition, and that is precisely what Motorola needed latitude on. Tension was exacerbated by the fact that Motorola was the first “wholly-owned” company to try to work out something new.

In spite of these setbacks, Motorola did get a preliminary green light for an operation by the end of 1988. By the beginning of 1989, Lindholm and Lai settled on 50 acres in Tianjin, which they in effect bought through the legal instrument of a 70-year lease. They simultaneously prepared a full business plan to submit to the Chinese government. A new entity, Motorola Tianjin Electronic Experimental Limited, was formed, which opened offices in Beijing. “You know,” Chi-Sun Lai recalls, “China had the belief that if they were not part owner, then you are just coming in to make money off of them. Changing that culture, that concept, was sometimes tremendously difficult.” Lindholm, Lai, and Austgen had to imply, tactfully, that Motorola was the best at what it did and wanted to do things our own way. “Perhaps this was arrogant to some extent,” Lai says. “We did tell the government that if were wholly-owned, we could respond to the market and change much faster than if we had to go through a partner. Also, since we could control the security of technology, we could put in more up to date technology, and really transform this into a world class operation.”

The most critical task for Lindholm and Lai, then, was to sketch out a promise that would make Track B fully plausible to the government later on--the promise of technology transfer and localization of management. Motorola, Lai insisted, would trouble to invest in the development of its employees--intellectual assets, which would be enormously valuable to whatever community the company set up operations in. The company was not simply making a tactical investment in some identified market:

“Marketing strategies that worked in the U.S. could not work in China,” Lai says; “There is a different culture. Chinese talk about relations, about trust. It is not like in our country, in the U.S., where we talk about what’s written down—even though it might prove wrong, we do what’s written down. In China, the connection to the market is through the government. Sales are usually to government enterprises. So we took special pains to make sure that we weren’t viewed just as a bully company going in just to make money and take advantage of the Chinese.”

In his initial proposal, Lai showed the government a schedule in which certain products would be almost completely localized--have 80% to 90% local components--in eight years. There would also be a preponderance of Chinese managers, which Motorola would train. These undertakings were critical, Lai knew, since the Chinese currency was then subsidized, as part of a classical policy of import-substitution; China kept its exchange rate somewhat higher than it would be in an open capital market, to facilitate the importing of capital equipment (and cheapen certain key consumer goods). If Motorola would be selling mainly into the local market, and be assembling mainly components brought in from outside the country, then it would have to ask the government to convert a great deal of local currency earned from sales into, in effect, subsidized foreign currency, and then use that money to import even more components. This would seem to the government something like an overall subsidy paid to Motorola operations.

Lai continues: “So we talked about localization, and doing everything we could to keep our foreign exchange account in balance, though this could not be done right away. We told them, again and again, a wholly-owned operation may not bring you large financial returns immediately but we will bring know-how and our connection to the world market. We will be good corporate citizens, we will bring in technology, train people, localize operations, work with component suppliers to improve quality.

We'll make the local government of Tianjin our partner. We'll make the Ministry of Electronics Industries our partner. We want to modernize the country."

Little by little, Chinese officials became surprisingly open to this logic. Indeed, in spring of 1989, Austgen finally got the breakthrough he was looking for regarding unions in his negotiations with a deputy minister at the Labor Ministry: "She and I were determined to spend a couple of hours working things out, interpreters at the ready," Austgen recalls. "I began with the old familiar arguments about how Motorola would treat its employees with dignity, she reiterated that the highest levels of law required a union, and that she had no right to make an exception. But having come to understand that English translations did not always do justice to what Chinese symbols and characters intended, I began to probe her regarding what the word 'union' really meant, given the nuances of Mandarin and communist tradition. And sure enough, when you peel back the onion, the word 'union' actually refers to the organization or individual in the company that ensures that employees are trained to do their job, that they get welfare benefits, housing, etc., that they get recreational benefits, and are not abused or unfairly treated. It never was, and is not, a collective bargaining unit to establish wage levels, as in the West. Wages got set elsewhere in the government bureaucracy."

"So I said to her: 'Gee that sounds very familiar to me,' " Austgen continues, his voice still betraying relief, " 'We have an employee relations department, and a training department--that sounds like what you are talking about.' And the warmest smile broke out on her face, and she said, 'Yes, that *is* what I mean.' And I said, 'Would you mind if I called the union functions specified by the constitution by these names?' And she said, 'That would be fine.' Suddenly, it was clear to both of us that the great problem we had been struggling with had pretty much gone away. Later, back in Tianjin, we were given to understand that we would have to

hire into our employee relations department someone they designated, likely a Party member, to serve as a conduit of information to and from the ministry. We said, 'Fine.' But when I reconnected to the deputy minister, she said that we could hire the person of our choice, after all. I suggested that this person report to the ministry once a month. Again she smiled, and said that a couple of times a year would be satisfactory. The key," Austgen concludes, "was to build a relationship and show ourselves willing to accommodate official interests. They were willing to accommodate us as much they possibly could once we managed to put our relations on a foundation of trust."

Motorola Tianjin Electronic Experimental Limited hired its first seven employees, and late in the spring, sent them to Phoenix for preliminary training in the semiconductor business. The operation was off and running, with the blessing of the PRC government. Choy's hard-headedness had paid off in excellent financial arrangements. The government agreed that only 20% of Motorola's investment would be financed from equity, where the regulation called for 33%. MCEL would be able to net all transactions with Motorola group companies on a global basis, eliminating the requirement of settling foreign currency exchanges one transaction at a time. For its part, the Municipality of Tianjin guaranteed MCEL both the availability of and a fixed rate of foreign currency--a guarantee that would become very important when, during 1993, the RMB dropped in value from 6.5 to over 10 to the dollar. Finally, although MCEL was permitted to consolidate management of all sectors and groups, different tax holidays (and different formal times of commencing operations) were permitted for different operations. Thus, MCEL could continue to implement Motorola's principle of decentralization, and phase in sector and group investments when they

were appropriate--without implicit tax penalties for coming on stream later than the time MCEL itself commenced operations.

Where Lai had virtually no success, ironically, was in persuading Motorola businesses to come into the new operation. Day after day, he would sit in his office confessing to Austgen that he would rather retire than continue to beat his head against the walls of matrix management. Lai became so discouraged, in fact, that he persuaded Lindholm to purchase only half the land allotted by TEDA: "People speak of the problems of dealing with the Chinese bureaucracy," Lai recalls; "but 90% of my problem was in Motorola.

"I started working on a comprehensive marketing and manufacturing plan that would include a range of obvious products. I would be negotiating with the Chinese government, making promises, and then I would have to negotiate with as many as 45 Motorola executives and business functions to get the consensus I needed to close the deal with the government. No way can you get this many people to agree all the time. I would go to the CEO to make the call. The CEO would say, 'Work it out.' I would say, 'If I could work it out, I wouldn't be here.' The CEO would say, 'Work it out.' I know this freedom is part of what makes the company strong. But the lack of empowerment of the people working overseas caused many delays. You can't send a person overseas and then turn him into a messenger boy. We had already seen that if one person from a business screws up, then the whole company gets put on the black-list."

Things went from bad to disastrous in the spring of 1989, when politics turned tragic, and tragedy became every company's business.

As protesters streamed into Tiananmen Square, Lai--like most everyone else in the country--was blind-sided. Ferocious student demonstrations, building since early in the spring, were met by an equally ferocious government defense. Lai had a meeting with the Minister of Electronics Industry in late May: "I had to walk to get there for 3 o'clock. I was 45

minutes late. The city was in total chaos. By the time I left Beijing, on May 30, I would estimate maybe 300,000-400,000 people were there in Tiananmen Square. They had been there for 45 days. The weather was so hot, and there were so many people jammed together. The stink was terrible. I knew something was going to happen. Disease was bound to break out any day. And many of the students were from Beijing University, the sons and daughters of high officials. This was a very personal confrontation within families, whose older members remembered how students had run amok during the cultural revolution. In fact, I got to know some of the demonstrators, and I talked to students who had been put in jail. They gave a much different story than government newspapers; but they also spoke differently than the foreign press, which is drawn to sensationalism; some jailed students later concluded that they had been used by the student leadership. Still, though the government behaved with tragic force, its biggest failure ironically was not acting soon enough, perhaps because of its collective decision-making. If it had acted when there were fewer people, if it had not proven indecisive and split on how to manage the situation, there might not have been loss of life. Anyway, no country in the world would have tolerated what was happening in the square. The government had to act."

The Chinese army finally did act on June 4, 1989. Had the hope of political liberalization been misplaced all along? Lai, though shocked by events, worked hard to help other Motorola executives see things from a more sober point of view. And then political crisis merged with personal crisis when, on August 2, Carl Lindholm suffered a heart attack at his summer home in Nova Scotia. He watched events through a filter of alarm and private anxiety. It was a dreadful time. The Motorola Beijing office, too, was in gloom. The seven employees who had been sent to Phoenix could not be brought back into the country--and as things turned out, would not be brought back for almost two years, serving stints instead in

Malaysia, the Philippines, and Hong Kong. (“We had to keep them on planes for two years,” Austgen says, “but six out of the seven are still with us.”) Everything came to a stop; many in the company-at-large began to doubt the whole enterprise. “Former boosters of our involvement, in their first reaction, wanted to turn China’s picture to the wall,” Lindholm remembers, “while those who had been luke-warm were ready to spend their efforts elsewhere. And those who had been negative to begin with, well, they made liberal use of the ‘I told you so’ they had been saving up.” Travis Marshall, as it happens, was having dinner with his old friend Vice-Minister Song in Nice on the evening of June 4. The television was turned on, showing scenes of Tiananmen. “Song was so shocked he couldn’t speak. I did not know what to say.”

Lai recalls an officers meeting as late as spring 1991: “My wife says to me, ‘Everybody is afraid that I would go talk to them,’ and I noticed that many of my colleagues were shunning me. I represented such a diseased case, people were avoiding me. They were afraid I would ask them to support my activity. People in Schaumburg and even in the Asia-Pacific region would clip newspaper articles about what’s wrong in China and send them to Bob Galvin.” Reflecting on this period, Bill Wiggenhorn speaks for many: “The Beijing group simply pretended the corporation was still supportive and marched forward. When we talk about the characteristics of being bold, acting according to one’s convictions, taking risks, sticking to strategy, well, it is hard not to admire what Lai and his team did--and try to learn from it. The Chinese government was embattled. They responded positively to the continuing interaction with our team there.”

Indeed, as Lai recalls, these awful events proved a kind of turning point. They clearly amounted to the worst moment of a difficult time. But having come to pass, the worst moment proved manageable, and surviving it in a way dissipated the fear of going ahead. Lindholm remembers that after a

period of initial revulsion over the deaths and arrests, Motorola leadership--Galvin, Fisher and Tooker--soberly reassessed Track B's business logic and moral purposes, and found both too resilient to consider abandoning. Lai explained to the CEO, top management, and any members of the Board who would listen that though Tiananmen Square was a disaster, it was also a tremendous opportunity. "For Ericsson and Siemens had been far ahead; every year Siemens held a conference--one year in Beijing, one year in Berlin--in which they told their story, built relationships. But our competitors pulled back after 1989. We had the insight to see the hard times would pass. We used this time to catch up. We informed the Chinese government that we were putting our plans on hold. But there would be no burning bridges."

"A 'wait and see' attitude prevailed," Lindholm recalls; "I got Bob to agree that we wouldn't jump off the cliff. Chi-Sun Lai was very important during that time, keeping relationships alive. He kept finessing payments over land, and so forth, but made it clear the we would not abandon China." In order simply to maintain the company's land options, and also keep up the Chinese government's interest in an unusual project like Track B, there was "a lot of hand-holding and visiting." Szymanski, who had worked with Lai to repair the damage done under Twanmoh, was similarly determined to keep going. "We were waiting to see what would happen; we had been forced to shut down in South Africa, we didn't want that to happen here."

Simultaneously, Motorola worked hard lobbying in Washington to help keep the question of human rights separate from China's trading status. Marshall was now an ambassador-at-large in James Baker's State Department. Lindholm saw to it that his Chinese contacts came to know of Motorola's efforts.

Then, as now, various human rights groups--Amnesty International and Human Rights Watch spring to mind--have characterized this lobbying skeptically, suggesting that this is a case of U.S. businesses putting moral scruples aside for the sake of profit. Lindholm insists it is *they* who are missing the point--and in much the same way, ironically, as the old-guard Chinese officials who had failed to understand the virtue of Track B. "Training was one of the first things we put on the table as part of our balance of payments," Lindholm recalls; "At the very beginning we said, 'We're going to create whole a cadre of people the likes of which we don't have; and those people are going to go out, like paramecium, and create more.'" But this was not just going to be training in the nuts and bolts: Motorola was going to give its employees "a way of life, a whole culture that's different, which allows everyone to contribute according to his or her ability because it is not too hierarchical." Lindholm continues: "We are living up to the most fundamental, most important part of our promise, and that is that we are bringing Motorola culture to that place which is a very important addition to that world. We are bringing them a frame of mind. We are also bringing them the world."

In the new economy, Lindholm continues, doing advanced technology business cannot mean profiting from the misery of human beings; it means cultivating the talents of people. That was Bob Galvin's logic from the first. There is no sense in Congress discouraging American investment in China, for the sake of human rights, when investment means the very education in Western technologies and values we would want young Chinese to learn over the long haul. How, without those technologies and values, will they ever be able to sustain a culture of human rights? "When advanced global companies like Motorola hire Chinese nationals, they are looking for thousands of educated people who can be trained to perform middle management and technical functions, and ultimately top management

functions. The training such companies undertake is actually a kind of introduction to the political skills of civil society.”

Rick Younts, Executive Vice-President for Asia and Latin America, puts it even more categorically: “If you look at the long term. If you look at China as a market of people and the transition that they were going through, if you look at the evolution of the power base between the military and the non-military leaders--at all of these things--then the time of Tiananmen will probably be remembered in history as the turning point in the opening of China--the *real* opening of China. It made the world conscious of China. It made China conscious of the outside world in a way they never had before. Even though there were tragic losses of life, I think probably the people got what they were sitting in Tiananmen for.”

6. *Turnaround, 1989-1991*

Whatever the effect of the Tiananmen Square disturbances on the prospect for a Chinese civil society, their effect on Motorola’s China initiative was, ironically, immediately positive, just as Chi-Sun Lai predicted. The 15-18 month lull created by the crisis turned into an unexpected chance for all companies that had come to China a little late in the game to catch up. Motorola, for one, used the time to consolidate its position in a way that would probably have been unlikely had all of its competitors been moving ahead at full steam.

A part of this positioning was simply personal, particularly with officials of the Tianjin Economic Development Authority, TEDA, which was becoming a crucial advocate for the company inside the national government. Lai, Lindholm, and others who worked at coordinating government relations kept up an unrelenting schedule of meetings and presentations. TEDA officials became allies. “I remember once sitting with the vice-mayor,” Lindholm reminisces, “and some of my visiting associates

from home were spewing questions at him. He got tired of them. 'Look, I want you here, you're going to be here, I'm going to make it work for you,' he said. How's that for a Yankee peddler! Some months later, unfortunately, he had a heart attack. I explained that I had one of my own. I felt genuine empathy for him, and he could tell. Later, when I was in the U.S., I sent him a book on diet, "Eater's Choice," it was called. The next time he saw me, he *cried*. Chinese people are very, very emotional. And particularly for things like that. You reach a status in China which is called 'old friend'--it's a status to be cherished. When an old friend says 'trust me' or 'I give you my word,' you take it seriously."

But the greatest opportunities to improve the company's position came in selling cellular infrastructure. The main protagonist of that story was Gilbert Lee, a young engineer whom Lindholm and Chi-Sun Lai had recruited from the Automotive Industry Electronics Group in 1988. Lee came to China to head up the cellular infrastructure operation. He quickly got up to speed on switching equipment, base station equipment, and so on, and set about trying to secure contracts from the PTTs of the various provinces. A bilingual Chinese-American who had lived in the U.S. for the previous ten years, Lee felt he understood the Chinese culture and was eager for the challenge. "I wanted to prove to all my friends that a good engineer can be a good manager," he recalls. "Besides, I had the advantage of selling cellular, which was a growing business. Some people laughed at the idea of China getting into cellular. But I wanted to take the risk."

Motorola had two very small pilot programs in cellular going in Beijing and Shanghai since 1986. But the company still had no provincial contract in 1988; and in the absence of a contract, its technical standard had never been established country-wide. The company sold, altogether, 3200 subscribers in China during this year. Motorola's senior management had been put into a kind of limbo in the Ministry of Posts and Telecommunications owing to the Twanmoh affair--not the best of

situations for Lee to step into. On the other hand, China had secured a substantial Japanese loan, which was targeted on allowing various provinces to buy cellular systems; and all contracts were to be subject to a process of more or less open bidding. Motorola, the world technology leader, had reason to be optimistic.

The company had tendered low bids in various places, but never came out a winner. "We had two weak points," Lee remembers; "We didn't have a strong technical marketing guy to explain our switches, which were perceived as less powerful than Ericsson's. We couldn't do a proper presentation. We also didn't know how to do PR. We were facing both a centralization and decentralization of power in China. We had to learn how to deal with both. You can't just sit back and wait if you are getting nowhere with the central government. The central government may qualify you as a supplier, but you must fight it out at the local level."

And this is precisely what Lee proceeded to do, making the case for Motorola systems in endless meetings with local government bureaucrats. "These guys know that their signatures mean that companies make a lot of money. 'My signature is my power,' they think; 'just because you have the best product doesn't mean you get that signature'; if the buyer doesn't like you they will find any reason to disqualify you. You have to build up friendship, build up the customer's confidence. That's why Harris Twanmoh's action was so bad. Between '88 and '89 I ran around the whole country, I made presentations, I got into technical information, but every city I went to, I was blocked, even if I offered the best price. On the other hand, every sales meeting was a part of raising our profile--the opportunity to meet was just as important as a successful sale."

Things began to turn around, ironically, in the wake of a move by a competitor to try to drive Motorola out of Beijing entirely. In January of 1989, Ericsson decided to donate a huge system to Beijing, in the hope that this would force Motorola to close up its trial system. But Lee had spent

the year building relations with the Beijing Telecommunication Administration, who sympathized with the vulnerable position of the company and understood that Motorola really had technological leadership, which would ultimately yield a better system. A majority on the BTA opposed the central government's blacklist; they offered to spend a million dollars to help Motorola expand its trial system. The contract was going to be done by May.

Then came Tiananmen. Lee was called out of the country because of the instability, but he returned to Hong Kong just around June 4th. He then determined to return to China that very summer. Chi-Sun Lai was wary of Lee's going, but Lee was confident: "I told him this would be the safest time. They wouldn't hurt any foreigner while they were being so embarrassed in the international press. They would protect me." In early July, Motorola lifted its restrictions and let employees back into China. "I jump on a plane, I fly back, and I am the first person in Beijing to sign a foreign contract at that time. They had a big banquet for me. Our BTA system survives."

For the rest of 1989, Lee was "a one-man show," going to unfamiliar cities, making technical presentations, translating, preparing contract offers, trying to cut deals. He surfaced no new contract. Then he tried a slightly different tack, playing on customer anxieties that real competition in cellular would soon be impossible. "I combined with everyone to fight against Ericsson. If I could not win at least--so I said--'I don't want any single company to dominate the market.' "

In 1990, his luck changed. Early in the year, Lee bid on two significant systems, the second in Shandong Province, next to Beijing, and the first in Fujian Province, in the South, across the straits from Taiwan. He also entered into early stage contact with the Hangzhou Communication Equipment Factory--a still quite backward factory, which hoped to buy Motorola technology to learn how to make handsets for the Motorola

system. Lee encouraged them to help secure the Shandong contract and prove Motorola's good faith. In February, Lee "jumped" to the cellular subscriber group, after a management dispute. But he continued to press these bids.

"So I'm involved in all these things together," Lee recalls; "Hangzhou is knocking at the door, daily; in the meantime, internally, I've gone to CSG; but I'm still helping CIG in cutting the deal, and still working on the Ministry." In the end, Hangzhou proved as helpful as Lee had hoped; they convinced Shandong of Motorola's excellence. Meanwhile, Lee encouraged his colleagues to go to Fujian, and he began to shuttle back and forth. On May 23, 1990, a deal was cut in Fujian--Motorola's first major success since the blacklist. On May 26, the Shandong deal was closed as well. The PTAs of Fujian, Shandong, and the Hangzhou factory then petitioned the Ministry of Posts and Telecommunications to lift restriction on Motorola. "From that point on, we had our market."

And then it came time to pay the bill. "We negotiated with Hangzhou about how to assemble the phones, down to the component level. We would give them the materials, they would assemble the phones. We would sell them components. But we wouldn't give them the latest technology--actually, it was two generations older, which was approved by our Technology Transfer Review Board." On December 24, 1990, Motorola signed its first China technology transfer contract with the Hangzhou Communication Equipment Factory. Lee was exhausted: "The next day I flew back to Chicago--with hepatitis, and too late for Christmas."

With officials relations warming, and new business developing, Motorola's senior management began to reconsider establishing a full-fledged Chinese company early in the new year. "We decided to go ahead

and negotiate,” Rick Younts recounts; “We started in August, and by the end of 1991, we had an agreement.”

In retrospect, both the scope of the agreement and the attitudes of Motorola people to it seem almost amusingly cautious. “Negotiations on the manufacturing plan and the business plan were internally difficult,” Younts recalls, “because these were conducted as if they were a part of the normal corporate overview. We were asking the businesses what they thought the market would be, and what products they would build, and so forth. True, we--the corporation--were buying the land and building the buildings; we were going to own that and give space to businesses when they submitted a manufacturing plan. But the vision of the businesses tended to be short-sighted, which is natural, I suppose, since they had to perform quarterly.”

Chi-Sun Lai thought the main opportunity would be in paging and cellular. Younts figured “the guy on the ground” had it right: “We intended to make a fairly low investment in plant and equipment, perhaps \$125 million, all in all,” Younts says; “There was to be some land mobile stuff--two-way radios for transport, and so forth. We rented some 40,000 square feet. The cellular phone guys expected to sell perhaps 150,000 units. Paging gave us an estimate of 27,000 pagers. The Chinese kept trying to talk even those estimates down. They thought it was a really ‘capitalist’ thing to be walking around with a very expensive portable telephone or a pager on your belt.” As for semiconductors, the market seemed even more unclear. “We focused on producing ‘gate functions’ or logic chips for consumer electronic products. We make them by the zillions. But, by agreement, we weren’t allowed to go into TV market, even though we wanted to. So semiconductor people were reluctant.”

Actually, this reluctance developed into something more serious as plans for the Tianjin facility took shape. During the summer of 1991, Jim Norling and Tommy George, the general managers of Semiconductor Products

Sector, decided their businesses had better not participate at all. C.D. Tam understood this attitude, much as he opposed it; there was a case to be made that a new production facility might after all be best located in Hong Kong: "We organize and work by product, so anytime we want to get together with a unified purpose in a country, how do you champion that unified purpose? Bonuses are paid for sector performance. These people are concerned to do justice to their employees. After all, it was cellular and paging that stood to make money, not semiconductors. We were being brought in to help them make their sales. Also, there were already half-executed plans to build a chip fab just like this in the Philippines. If the Philippines plant got finished too, there was fear of a market glut in the semiconductor products contemplated for export. SPS management were not sure about the Chinese labor force, and would have to bear all the consequences of start-up inefficiencies. The Harvard Business School strategists would have told you to pass on it."

Of course from a *truly* strategic point of view, Tam adds, that would have been a debacle. Motorola's Track B would have seemed something of a broken promise without any kind of a semiconductor facility. Bob Galvin had strongly implied as early as 1986 that Motorola would be a force for technology transfer and manufacturing know-how, and it wasn't telephone assembly that interested his Chinese counterparts. If SPS would not come along, the entire plan might be jeopardized.

When Lindholm's and Lai's entreaties were to no avail, Gary Tooker stepped in. The matrix, this time, was going to have to give way to the control of command: "Those discussions probably lasted five or six months," Tooker recalls; "There was a lot of tension around the logic of the investment, but as always there were also matters of personality. In a decentralized organization, where you give pretty good autonomy to the various businesses, some are more aggressive than others. The equipment side wanted the semiconductor people to make the investment, so we

could sell cellular phones and pagers. The semiconductor side was nervous because the market was much more for the communications guys. Meanwhile, the Chinese had their minds set on semiconductors originally, though not exclusively. In my view, if you were successful here it would be a model that you could replicate around the world, in places that would come after.

“I finally called Jim Norling and said, ‘Okay we’ve discussed this enough, now go build a plant.’ And they did a damn fine job! Normally you don’t have to do that. You can’t just make someone do something they don’t want to--the performance would be bad. But here we were looking out on the potential good it would have for the entire company. It also represented a model for cross-business cooperation.”

Lindholm, Younts, and Tam all agree that Tooker’s intervention was the ice-breaker that made everything that followed possible. “Gary’s call precluded wavering around to make a decision,” Tam reflects; “it made them decide.” It was also the clearest possible indication to the Chinese government and the rest of the company that Motorola would, indeed, make integrated investments in knowledge assets to keep up its commitments under Track B. Shortly thereafter, Motorola submitted an application to the Ministry of Electronics Industries to found Motorola China Electronics Limited, or MCEL, with primary facilities in Tianjin, and headquarters in Beijing. “We were,” Lindholm says, “off and running.”

7. The Challenges of Take-off, 1992-95

The charter for MCEL was approved early in March of 1992. MCEL would be a wholly owned subsidiary of Motorola Inc., and would have authority to staff, compensate, and build according to its own business needs. Motorola’s charter also contained provisions much like the ones the businesses had suggested, selling pagers and cellular phones into Chinese

domestic markets; some of the equipment would be imported and sold by the businesses, some would be manufactured through MCEL. Chandler, who was now head of manufacturing in the Cellular Infrastructure Group, developed a three year manufacturing plan for assembly and test. ("We kept them only in assembly of transceivers, but we manufactured the boards abroad, at least until the Chinese got up the learning curve.") If, as expected, 70% of production would be for export, MCEL would earn certain financial benefits, but in any case, 50% would be targeted for export. By law, moreover, the company would be (and on a periodic basis qualify as) a producer of "high technology." Its trade in components--how much it imported vs. how much it exported--should be in rough balance, so as not to cause any depletion of China's foreign currency reserves.

Carl Lindholm, who had retired in 1991, was elated. He had continued to advise the China team through to the time of the charter; now his work was done. For his part, Chi-Sun Lai had told Bob Galvin that he would himself retire when his dream came true, a China operating company with one billion dollars in sales. Lai hoped this would happen by the year 2000. In fact, MCEL reached \$1.2 billion in 1993. In the fall of 1993, the Motorola Board met in Beijing for a dramatic meeting. Sales in China promised to outstrip every other emerging market. Now everybody wanted to talk to me," Chi-Sun Lai recalls.

The first explosion was in cellular systems, much as Lindholm had anticipated. By the fall of 1993, there were 162 cellular system operators in China. Of these, 107 contracted with Motorola's Cellular Infrastructure Group, while 44 went with Ericsson, six with AT&T, and five with NEC. Motorola also had a respectable share of the cellular subscriber market by the end of 1993. There was still for all intents and purposes no "consumer" market for CSG. But there were an untold number of enterprises that were either government owned or controlled; and each had a managerial group

that was frustrated by an inadequate land-line network. Motorola leveraged its excellent relations with the national government into many enterprise-wide sales. And what nobody had understood about pagers was that an innovative use of them could completely change their prospects. "Pagers, it turned, could be used as a half of a telephone," Rick Younts explains; "The Chinese don't have that many phones, or opportunities to use telephones during the day. So they began using pagers to communicate: People from an office or business were given code books in which various numerical codes, which could be displayed on pagers, were assigned to corresponding messages--messages like 'call the office,' or 'the appointment has been canceled.' The market took off."

By August of 1992, Motorola's pager assembly factory was up and running. Its quality proved excellent and its yield virtually on a par with Motorola facilities elsewhere. Cellular telephone production followed suit, and again, quality and yield also proved to be on a Motorola standard. "For things like this, Motorola efficiency is really amazing," Patrick Choy recalls; "We set out to build a facility and six months later we were already going. If business is a roller-coaster, we certainly caught the upside. You are supposed to lose money during the first year." Early in the following year, Tianjin began producing semiconductors from an "assembly and test" facility. The Chinese had stipulated that 80% of production would be for export, so C.D. Tam was concerned to bring quality levels up to exportable standards as quickly as possible. By the end of 1994, MCEL's semiconductor's business was selling at a rate of \$500 million in chips--90% to export markets, though China's burgeoning automotive market seemed to have virtually unlimited potential for semiconductor products in the future. Sales hit \$1.6 billion in 1994, and as the company headed into 1995, it projected revenues of at least \$2.5 billion.

All of this was good news, of course, and that is the way it was received. As Garth Milne, Motorola's Treasurer reflects on it, sales in China,

particularly of pagers and cellular phones, created significant value for the corporation: “Chinese sales contributed significantly to world volume in key products, which allowed for additional economies of scale in the production of major components, and helped build an export platform for the future. We have never taken a dividend from MCEL sales, but used revenue to pay down capital investments and pay back loans which had been offered on a preferential basis from Motorola Singapore. At the same time, every year the proportion of sales in China showing on the statutory P&L of MCEL--products manufactured or assembled in China--grew in relation to Motorola imports sold through the global business sectors. The trend line has been clear. By 1995, perhaps 25% of Motorola sales were through MCEL; by 1997, on about \$3 billion in sales, the figure is more like 70%.”

All of this is clear in retrospect. However, the early success of MCEL gave rise to two unanticipated challenges. The first was a political difficulty which came up in the fall of 1993, when a number of senior Chinese officials began to raise concerns about how, and at what pace, Motorola would match greater than expected levels of revenue with appropriately greater levels of new investment.. The second challenge had to do with manpower, which the company addressed with an innovative program it called CAMP--the China Accelerated Management Program: MCEL had been gotten off the ground largely owing to the extraordinary work of more than a hundred ex-patriot managers who had joined the effort under Chi-Sun Lai; CAMP was designed to train Chinese managers to replace a significant number of them. These two challenges might seem quite different. But, interestingly enough, it was precisely initiatives like CAMP, focused on redoubled Motorola investments in human capital, that helped to preclude any political crisis.

Motorola University initiated CAMP in the fall of 1994. The logic for it was simple enough. By 1994, MCEL employed about 3500 Chinese nationals, and given its rate of growth was expecting to employ as many as 10,000 by the year 2000. These were mainly not factory laborers--how much direct labor does a computer integrated pager line need?--but "middle management," people to work in sales, finance, logistics, personnel. Yet MCEL management knew that the men and women who would present themselves for work will not be qualified. They would be college educated and deeply literate; they would have exacting math skills and study habits; a great many would have advanced scientific degrees, and would have used, say, personal computers. But none, no matter how intuitive, would have any confident understanding of such elementary notions as the time value of money, customer service, profit and loss, or, indeed, the moral claims that justify profit.

Jason Lum, whom Chi-Sun Lai had tapped to run human resources for MCEL back in 1992, knew this was not simply a problem of employees learning some new arguments. Chinese who were born and raised in the People's Republic lacked what might be called entrepreneurial poise. Over thirty-five years old, and they were likely to have terrifying memories of the Cultural Revolution and be disinclined to take risks of any kind; under thirty-five, and they were the products of a despotic school which, while approving of individual ambition, would have regarded individual curiosity and conscience to be vaguely impudent. MCEL had learned that employees wanted you to tell them the rules; they did not ask embarrassing questions. China, to put it in the delicate language of an internal Motorola University document, had "a shortage of management talent in the labor supply."

MCEL had plugged holes with American and other Asian expatriates, mainly in Beijing and at the plant complex in Tianjin to the north. But every one of these ex-pats cost the company between \$250-500,000 a year,

after salaries, bonuses, rents (\$10,000 or more a month for a Western standard apartment in Beijing), family travel, and so forth, were reckoned-- a financial burden that would be unsustainable if MCEL were to grow to anything like what was projected, and the ex-pat community grew proportionately. In contrast, training and salaries for Chinese employees would amount to between 10-20% of that sum.

Besides, Chi-Sun Lai had promised the Chinese government that management of production facilities would be "90% localized in ten years." And there were problems on the other side: almost every ex-pat who cycled through China became a challenge for corporate Motorola when the assignment is up. "They return to jobs with nothing like the 'on-the-edge' feeling they've had in China, nothing like the span of control, " explains Leo Burke, the man who led the Motorola University task force to address MCEL's problem. "They come back to company headquarters where almost nobody can grasp what they've achieved--the exhilarating, exhausting hours, the size of the deals they've brought off, the negotiations with government ministries, the absence of secure communications channels, the problem of getting a child to the dentist--all of these things make life seem rather dull back in the states."

And so under Jason Lum, a new idea emerged, and Burke was called in to help make it happen. Their team's brainchild was CAMP, six full weeks of classroom work, spliced into twelve months of on-the-job training-- "action learning," project management, ex-pat coaching, and rotation through Motorola facilities abroad. Each cycle trained no more than fifteen people, and up to three cycles are going at any given time. The curriculum included modules on Motorola history and ethics, value creation, project management skills business process design and improvement, benchmarking, and so forth. It also taught presentation style, team facilitation and leadership. The latter proved particularly challenging in China, where improvisation of any kind was generally frowned upon.

Lum and Burke instituted a grueling selection process, meant to identify the very few who might succeed--and stay. In a way, the challenge of choosing has been even more daunting than the challenge of teaching. There were, first, nominations and supporting documentation from managers, individual interviews, English test scores. Promising candidates would be interviewed by a panel of senior managers, who asked probing questions about how to handle difficult situations: do you think that you make decisions quickly?, or, if a co-worker asked to discuss a personal problem with you, what would you do? The screening was meant to explore cognitive and administrative skills, but also such 'soft' skills as motivation, a capacity for empathy, a talent for self-organization. The goal was to identify "high potential." Few made it.

The rigor of the process almost immediately made CAMP very prestigious--"people thought promotions would follow," Burke recalls, and indeed they have in several cases. According to Jason Lum's original vision, any special training of Chinese employees for middle management should begin the process of qualifying them to become MCEL's general management later on.

CAMP, then, became the first natural test for Bob Galvin's moral vision. Through it, Motorola University aimed to deliver a general management education in a way consistent with the company's "culture," its attention to individual dignity, to tolerance in relationship building, to "quality" in the nuanced sense--the basics of Galvin's legacy, and the touchstone of Motorola's success in the new economy. A management curriculum of this kind would inevitably be an experiment in fostering the practices and values of civil society, just when, and in the only way, the Chinese government could sanction it. If the curriculum worked, it would spread, first to Motorola's other China programs, then to suppliers--and beyond, who knows?

“China is the great story of the next century,” Burke says, himself a trained political historian, “and we have had the chance to contribute a part of the DNA of a future business culture. This has been humbling.” But then, the moral prestige of the program--the very space it created for self-realization, openness, teamwork--has proven to be an important advantage in the current business culture, too. “Every Chinese employee trained in management has become an attractive potential recruit to every other foreign company operating in the country,” Burke explains; “the program’s atmosphere has had to inspire a deep sense of identification with Motorola.” In fact, the company has had to inspire something like fidelity.

There was, however, another problem which the company could not address quite so directly. Motorola’s and MCEL’s sales levels in domestic Chinese markets were greater, and the pace of their growth was faster, than anything Lindholm and Chi-Sun Lai had anticipated. This raised natural questions about the size and pace of Motorola investments. An implicit rationale for Motorola’s independent status, after all, was that it would be *exporting* products from world-class facilities--what the semiconductor operation was, indeed, already doing. MCEL had certainly kept its bargain on the quality side; and CAMP was a significant pilot training program. But, surprisingly, virtually all of the pagers, cell phones, batteries and other communications products Motorola assembled in Tianjin--close to \$2 billion worth--had wound up being sold *domestically*, into an unexpectedly robust Chinese market. This meant that Motorola imported substantially more components from abroad than it had bargained for and, correspondingly, had to change substantially more Chinese currency for dollars.

MCEL was expected to export 70% of its products to qualify for certain government financial incentives, and 50% to be in compliance with the law;

it would be exempted from the requirement to apply for the right to import components if it produced (or acquired) 60% of its components locally. These had become difficult targets to meet initially, though the company was, from the start, plowing back its earnings into the development of what Bob Galvin had called “world-class” facilities. “1994 was a very critical year,” Patrick Choy recalls. “The Chinese found out that we have a lion’s share of the market in cellular subscriber and paging. There was a very bad perception of Motorola because we were wholly-owned. Some thought we were raking in a lot of money--and what do the Chinese get? The common Chinese perception was, how did it benefit the country to have a company like Motorola dominate? We didn’t realize what danger we were in.”

It was a danger compounded by a critical transition in MCEL leadership. Chi-Sun Lai was leaving, and his replacement was not yet fully in control. Lai had promised Bob Galvin that he would retire when MCEL reached one billion dollars in sales. His dream was realized in 1993, well in advance of the year 2000. Exhausted by the work, and by navigating Motorola’s internal relations, he announced that he would leave as soon as a suitable replacement could be found. In the fall of 1993, George Fisher had begun the process of recruiting a new president for MCEL, and he had found an exciting candidate in P.Y. Lai; a native of Malaysia, P.Y. had headed Intel’s marketing and sales operation in China and his wife was a veteran Motorolan, steeped in the company culture (“I got it by osmosis,” he likes to say). But then, unexpectedly, Fisher himself resigned from Motorola to become the CEO of Eastman-Kodak. So P.Y. continued conversations about MCEL with Gary Tooker, Rick Younts and others--conversations which continued well into 1994. By the fall of that year, P.Y. had only just fully assumed his responsibilities.

And, coincidentally, Chi-Sun Lai’s departure proved to be the very occasion at which the Chinese government brought matters to a head: “In

October 1994, Chi-Sun Lai was leaving China, so I organized a private bridge party to commemorate his work," Patrick Choy recalls; "I invited eight ministers and various state leaders. Vice Premier Li Lan Qing came and this was a very pleasant surprise. He was very gracious, but delivered a strong message: 'You are a wholly-owned, dominating venture; tell me what you have contributed.' Choy said in defense that we were developing local managers--the CAMP program was getting off the ground--and that we had a suppliers program to develop the quality of local supply sources. The point hit home, but it was obvious that we had not been able to do a really good PR job. Li Lan Qing had come a long way to deliver this message, so we needed to act quickly. Since he was going to be visiting the U.S. in ten days, we invited him to a meeting with the CEO of the company."

The agenda for a U.S. meeting would be clear enough. There was no question, really, that Motorola should continue to thrive, but the company was in need of a yearly waiver to allow it to exceed the very small sales limit contained in MCEL's 1992 charter. Perhaps an amendment, an update, to the charter would be in order. In any case, the unresolved question was, what would the company be offering the government in an ongoing way to justify its continuing cooperation? Would this not be a continuing challenge, which would have to be managed as creatively as the formulation of Track B itself?

Gary Tooker met with Li Lan Qing and other top officials on November 6, 1994, in Schaumburg. Tooker laid the ground for how Motorola would manage this central problem going forward, and he did so by expanding the scope of Motorola's fundamental commitment to China's intellectual capital. He and the Vice-Premier reached an understanding based on what P.Y. Lai has come to call his "four principles": investment (and reinvestment), including technology transfer; localization and training of management; sourcing from and training local suppliers; and good

corporate citizenship, especially in the area of education. Tooker and P.Y. Lai promised that these principles would serve as the foundation for Motorola behavior into the future. Tooker recalls: "I said, 'The reason I asked for this time is that I don't think you understand what Motorola is trying to do here. You ought to come and see the tools, see the training, see the attitude of the people.' Li Lan Qing said, 'Then why don't you come and tell the ministers what you're going to do and then come back every year and report on how you've done?' I agreed. The private meeting was supposed to last 30 minutes. It lasted for closer to an hour. Then Bill Wiggernhorn took some time to review Motorola University's plans. Li Lan Qing then went back and told the People's Congress, 'Look, I want you all to go down there. If we are going to succeed in the global economy, this is how we must do it.' " Tooker then took up his guest's invitation, and went to China in February 1995, where he met with among others, Chinese President Jiang Zemin; at Li Lan Qing's urging, President Jiang had already visited the Tianjin facility for three hours in December of 1994. P.Y. gave his first presentation on the four principles before 40 top-ranking officials.

"P.Y. has a vision," Tooker explains; "If the whole quality issue was central to Japan, was there not a way to enhance Motorola's position in its relationship with China by making the company central to education? He explained to the Chinese that they were not just going to take the money and run; he found a way to explain our investing procedure. I affirmed that once you come into this country you never leave. You build a history. You build new levels of trust, of relationships. I decided that I would myself go back every year. In fact, I went back also in 1996 and we met this time with over 100 officials, and at much higher levels."

Choy recalls that the meeting with Li Lan Qing produced a new determination to work more closely with the Chinese government to make what Choy called "unmandatory contributions." The company would

hold annual conferences with key ministries, and present a white paper on its progress from year to year. It would also accelerate its investment schedule to help off-set its imports. In China, Choy explains, a company's investment schedule is also the legal ceiling under which that can import capital equipment and components on a duty-free basis; without an off-setting exemption, duty and VAT may be as high as 60% of the items cost. In late 1994, Motorola had an additional \$160 million dollar investment approved, so that its total to date was \$280 million.

Then, in August of 1995, the company announced its greatest commitment, a plan to invest another \$720 million, which included construction of China's first sub-micron, 8-inch wafer fabrication facility--a product aimed at supporting China's critical automotive market--in 300,000 square meters of space in a new development zone in Tianjin. In all--so P.Y. Lai announced with considerable fanfare in the fall of 1995--Motorola would be investing \$1.2 billion by the year 2000, a sum roughly equal to MCEL's total revenue to date.

Rick Younts announced in November that Beijing, not Hong Kong, would become Motorola headquarters for Greater China, unveiling plans for an ultra-modern, 19 story, \$85 million building in the Chaoyang District: 32,000 square meters to house management, marketing and engineering, Motorola University, and a multi-functional customer service center. Jason Lum initiated a housing project for Motorola employees in Tianjin, a residential development for 3000 employees and their families called "Water Park," with services, schools, and recreational facilities. "We decided on the Singapore model," says Lum; "We adopted an EHOP, and employee home ownership program. Employees buy the house at our cost--a beautiful flat, at the best price of the market. If the employees leave, he or she must sell it back to Motorola, without taking a capital gain. Any gain the company makes by reselling the property, comes back to the EHOP fund." In December, MCEL announced that it would be making an

additional investment of \$99 million in the production of GSM and CDMA standard products.

There would, finally, be a new series of joint ventures, in addition to the venture with Hangzhou Communications devoted to cellular phone production: a venture with the Leshan Radio company to fabricate semiconductors; a venture with the Shanghai Radio Equipment Manufacturing Company to produce the latest "Flex" pagers; a venture with Nanjing Panda Electronics Company to produce personal computers.

8. Post-1995 Strategy: "Sincerity and Love"

What is so interesting about the timing and character of these investments is what they were meant to achieve. In a way, the decision to build a wafer fab in Tianjin is the most illuminating of them all; the key to that investment is hardly the potential profitability of wafer fabrication.

True, the Chinese automotive market is exploding, and the cleaner burn of engines with micro-controllers is not a small thing in a country where air pollution is as bad as it is in China; with wafer production Motorola could reasonably hope to enter the supply chain of every major world auto maker looking for local content in a China operation; and wafers can also be used for such products as computer printers, still in short supply in the country. Still, SPS could just as easily build wafers in other, more developed parts of the world, where the infrastructure is more advanced (and earthquakes are less likely to happen); where manpower is, if not more willing and able, then at least better trained and better housed. C.D. Tam estimates that building in Tianjin may add \$100 million in start-up costs to the cost of the plant. ("In the short-term, junior people in SPS will use that against me," he says; "It is a premium I'll have to pay down over ten years, though in the end I will win.")

In fact, the decision to invest \$720 million in a state of the art facility serves a double purpose almost unrelated to the specific prospects of the semiconductor market. The first is to show that Motorola intends to plow back into China a good part of the economic value it creates and takes out; in a way, the fab is a means to raise the ceiling on all of Motorola's other businesses. The second purpose is to prove to the government that Motorola intends to teach the Chinese people what world-class technologies are and how to create them. The wafer fab, in other words, is the real consummation of Track B, a symbol far more eloquent than any public relations campaign could be.

"When George Fisher first talked to me about this job," P.Y. Lai recalls, "he asked me what my strategy for China would be. I told him that it was simple a simple formula--I guess I shocked him. The formula was 'sincerity and love.' " Sincerity, in this context, meant proving that you are not out to grab profits and go home, that you are in the country to become a part of developing it. "That is why we are now reinvesting more than \$1.2 billion, which is equal to nearly all the money we made." And what about love? "That is a matter of training and affordable technology. You have to prove that every business we get into is win-win. That we want to teach the Chinese what we know. Don't forget: we've had, in effect, one customer here--the government. This is changing, but we will always have to manage perceptions. By 1994, we were viewed half as positively as what we thought. Our quality and price has got us market share, but our courage to risk 'love' is what has got us continuing market access."

Since P.Y. Lai's four principles were aimed straightforwardly at actualizing his strategy, perhaps this is the time to consider them in turn, and for their current implications:

Investment and technology transfer. We have already noted the various investments Motorola has committed to through to year 2000. For P.Y., those investments are meant to position the company to continue to profit to the year 2000: "When you think about it," he says, "everything you do must be legal, logical, and incorporate good relationships. But what comes first? In the West, even if something is logical, if it's not legal, you can't do it; and if relations are good, if you are friends, people say this is a conflict of interest. But in China and most of the East, relations come first: if you a friend you are trusted, and if you are trusted everything becomes possible.

"We had a problem with a Motorola sign at an office used for overflow work," P.Y. continues. "The law said we had to register the space as a branch office; so that a \$5,000 expense would become a 45,000 a year expense. This made no sense for us--everyone arguing, going crazy. In the end, I solved the problem in one dinner, with higher people. It is the same with our whole business here. Managing relations doesn't mean that you mess around, you still legalize it, document it in the proper way. But investment means getting people to understand that your position is logical. We should build a relationship with patient, educated people, so that in the long term, we're doing better business."

And so reinvestment means having the company fully engage the commercial life of the people, becoming mutually dependent with them. "When we are a \$10 billion operation, our purchasing power will be roughly one billion a year. We can create 20 suppliers, we can hire at least 1,000 people, we help build the electronic infrastructures; meanwhile I want 20,000 people who will feel heavily invested in Motorola's success. For our part, we will also be dependent, and we'll share the mix of happiness and sorrow. What is China? What is the problem? What can I do to help? They need capital. They need know-how. They need technology. We make money but we reinvest every single cent for the future. We showcase Tianjin--a city the nation can be proud of. And we

transfer soft-system manufacturing. We show how to do it. Products they can be proud of. Love means we share, share means market share!”

Localization and training of management. In getting CAMP off the ground, Jason Lum was not just thinking about public relations: “The localization plan was for business reasons, not just to please the government. If the company is going to stay here for a long time, we have to send the correct message to our employees--that they have a real future, that we want them to stay. Besides, it may not be so cheap to train people later on.” And yet Lum is in a continuing bind. Motorola currently employs about 6000 people in China. He has calculated that MCEL will need about 700 middle managers by the time it gets to 10,000. And yet the best MCEL can manage through training programs like CAMP is perhaps another 100 graduates over a given three year period. Are there ways other than CAMP to train middle management?

“We started with a clear and simple plan: If there is an evolution along the way, the first step is to make sure that local positions are taken by PRC nationals who hold PRC passports. But there is a big pool of people who can come in without even going through CAMP. What we should do is have them spend 5-10 years in the U.S.. Then they are Chinese who have acquired foreign skills, and they can even be paid some in Chinese currency, in RMB. Of course, this at first would not be much cheaper than employing ex-pats here.” Lum is adamant about one thing. Localization does not simply mean showing numbers: “You must still continue to maintain your business and do well. There’s no point putting in local general managers and then failing in business. That’s a big flop.”

Lum has come up with a phased plan. In the first phase (as with CAMP) the focus will be put on middle managers. “We will have true localization among middle managers in the next five years,” he says; “we should be able to train and rotate to the U.S. about 350 of the 700 people we’ll need.

The other 50% of middle managers we'll have to hire from what pool of experienced managers there is." But senior managers typically have 10-15 years of experience in their chosen field. They will not come, at first, from the ranks of PRC nationals. In phase two, then, people with middle management experience will come into a new curriculum which Lum sees as going beyond CAMP, one that focuses on building confidence on the job, loyalty to the company:

"Most of those in CAMP leave and are ready to do their mid-management positions," Lum explains, "but some of them really show potential. We take those people one step further--perhaps 30-40 people. We'll focus on soft-skills and commitment: If there is a U.S.-Sino problem, how will this person think? What is best for the country, or the company? We want to introduce the idea that management aims to achieve what is best for both--a balance."

Lum is convinced the government understands that MCEL is making a good faith effort here. "We've heard this articulated by the ministers themselves. Our suppliers tell us the same. Our training is getting a good reception; we are being treated like a big player in the field. They consult with us on changes in their own training programs. I really believe that we have achieved what we set out to do."

Sourcing from local suppliers. C.A. Lim, MCEL's Director of Corporate Supply management, has one of the company's most critical and unheralded jobs. When MCEL expected to be a net exporter of products, local sourcing of components was considered an added benefit. But since virtually all of Motorola's communications products are sold domestically, local sourcing has become the single most tangible way the company can show the government that technology transfer has been embedded in the actual cost structure of Motorola products.

“MCEL has been in discussions with the government about amending its charter,” Lim says; “We have asked that our rights to sell into the local market not be governed by numerical limits, but rather reflect ‘market conditions.’ The government has resisted this, but has said that if our products had 60% local content, we would not have to apply every year to get a waiver to import components to sell domestically. Our sense of it is that they would be comfortable with 40%.”

But like Jason Lum, C.A. Lim believes that increasing the competence of the supplier base will bring business advantages, not just political ones. Local sources will bring the ability to work on cycle time reductions and cost reductions; and the discipline and talent of the well-educated Chinese workforce is a source of value to be mined. “This country is going to be a big components maker--it will happen. We might as well do it early,” Lim says.

For super-critical, high-end components like wafers and sophisticated products using surface-mount technology, Motorola will be its own supplier. But for batteries, more commodity-like semiconductors, ceramics, and plastic housings--components that require significant training in process technologies and soft-skills, but do not risk the family jewels--Lim has committed to working with a range of suppliers in a series of supplier agreements. Supplier companies include Hailian Sub-assembly, Multi-Board Factory, Sanguoxin Keyboard Factory, and Electronic Plastics Plant; components include battery chargers, power transformers, printed circuit boards, crystal filters/oscillators, slide switches, loudspeakers--in all, a list of 20 subassemblies and products, and the list is growing.

“The classic case was the #3522 Factory, which makes chains for our pager,” Lim says. “We worked with them for two years to help them get to the point where they could meet our requirements. We gave them technical help, held their hand, worked with them in trial and error to help them stabilize their process. We helped them adopt a new gold-plating

technology, and taught them about through-put; we helped them secure a two and a half million dollar loan to upgrade. Today they are turning out 1000 gold chains a day.”

Lim is working with 20-30 suppliers, about 100 different people, each one of whom spends about 10-15 hours in training. All go through the rudiments of Total Customer Satisfaction, Six Sigma, Total Quality, Statistical Process Control, and Motorola Culture. Is the pace fast enough? “The businesses are giving me a very high level of support,” Lim says; “In two years, we should be at 50%, if not 60%, local content. Of course, we would hope to be able to get there without spending quite so much time and resources. But the company is taking a good risk. Americans are more readily accepted in this kind of mentoring situation than, say, the Japanese. Our brands mean something special. The goal is to get customers to prefer us.”

P.Y. Lai (formerly of Intel, remember) has his eyes on another supplier-chain initiative, which may have very great consequences for Motorola down the line. He is targeting the nearly virgin Chinese personal computer market. Under P.Y.’s leadership, MCEL has concluded an agreement with Panda Electronics to build a “Power PC”-based system that will run both the Macintosh operating system (which Motorola, Inc. licensed last fall) and Widows NT. The result will be a PC with a very low cost structure and special potential:

“The Mac OS might well be more successful with written languages that are graphics-based, such as Chinese,” P.Y. says; “We could get software writers interested in the Mac all over again. Also, China has no world brand. Panda could be it. We will help them become world-class suppliers so that they become partners with us. We’ll go hand in hand to the global market--with the East as the base to make the Power PC successful. When I shared this plan with the Minister you know what his reaction was? He

stood up and sat down and stood up and sat down. Do you know why? He was excited because he could see a future in teaming up with us.”

Good corporate citizenship, especially in the area of education. The last of P.Y.’s four principles is, in a way, the most transparent of the company’s contributions to China’s intellectual capital--and the most poignant. It entails both a commitment to China’s educational infrastructure and the welfare of Motorola own employees.

As the country grows, coastal areas are getting richer, and inland areas are getting poorer. Inland, many young children don’t get even a 6 year education. To help counter the trend, MCEL has initiated “Hope Project.” The company has built 16 schools over last two years, spending close to one million dollars. The schools are meant to provide a quality benchmark for others. Also, over 5000 Motorolans have contributed another 350,000 RMB to schools in outlying areas, and many have gone on company-sponsored “Hope Tours,” to see this poverty for themselves. MCEL has also supported Chinese higher education with contributions totaling over three million dollars in scholarships and equipment to Beijing University, Beijing Posts and Telecommunications University, Tianjin University, Qinghua University, and others. In all, some 2000 Chinese students are being supported by various Motorola endowments.

With these four principles, P.Y. Lai expects to put relations with the Chinese government on the firmest possible footing. “They thought they had been suckered,” Lai says, “that Motorola was taking too much from the market without giving back. The market was moving so fast, everybody at the company was focused on the market, not on what they can do to give back to the country. Since the four principles have been articulated, things have improved. We got ‘high-tech’ status in September of 1995. Gary has been here, Chris Galvin has been here, Bill Wiggenhorn

has been here more than once a year. We are looking at a ten billion dollar market. We cannot be complacent. We should talk to people at the universities, share knowledge, build relationships. They're your friends! They also have a short memory."

The four principles, it turns out, have one other role to play, a role internal to the company. In P.Y.'s view, and Rick Younts's, they go some distance in solving the problem of how to manage the corporate matrix.

Who in an emerging market should have ultimate executive authority? The country manager, who has intimate knowledge of what opportunities and crises are coming, or the general manager of the sector, who has world responsibility for the business's P&L? The voices in this debate have been many and passionate.

Travis Marshall, for example, believes that executive authority must remain with the sectors. "Motorola will be struggling with this problem forever. I lean towards the manager of the product. He should meet regularly with the country manager, but shouldn't report. They should know what the other wants. In Washington DC., no one comes in without coordinating with this office."

Others, however, have advanced different views. Dan Szymanski, for one, doubts that having P&L responsibility "is a reason to run things": "There are a lot of people who are generating a lot of money out of circumstances they did not invent, and shouldn't necessarily have complete control," he insists; "I knew people in China who were glorying in profit and not making the correct investments: poor decisions, high P&L. There must be another control." Chi-Sun Lai agrees, and thinks that at least some ultimate control should be vested in the country manager: "For strategic questions and government relations, the manager of the business unit should report to the country manager in addition to the general manager of the business," he says. Jason Lum, for his part, would

like to formal control vested in the corporation “I think the company needs to articulate some structure. Saying, ‘Go work it out,’ is not enough. There needs to be executive power in the corporate groups. Otherwise, business groups say, ‘Why should I listen to someone who has got no P&L, no budget to quote to me, no authority?’”

Carl Lindholm, not surprisingly, takes a position which aims to harmonize these conflicting positions. He thinks that Motorola has as good a chance as any company at working out and ultimately defining an effective matrix. He shares the view that Motorola is “starting out with a very effective product group,” but it also has “very vital geographic need.” The company will have to find a way to optimize both. “There are some things that you can accomplish by ‘ordering it to be done,’ and some things that can be accomplished by persuasion; you have to be structured in a way that allow the two to happen--not black or white, but a kind of zebra. If you have the P&L, you’ve got to have the responsibility, that is only fair. At the same time, there’s got to be a constructive tension with country managers--in fact, that’s why we hived off Japan and made it a special entity. Everybody’s got to be arguing about the boundaries all the time; we need to get to a more fundamentally balanced structure. Otherwise you end up with a Phillips circa 1980 where everybody had their own thing to do and nobody was making any money. The chief value-added by the CEO, in this model, is to pick the right time and place and occasion to do say, ‘Just do it,’ like Gary said to SPS. In a large organization with multiple executives, that is so decentralized, what else do they have to do? They have to define a strategy and then make sure that no one gets in the way of it.”

For P.Y. Lai, this debate can never be settled, but the four principles serve as a way of finessing it. In his view, as long as each of the businesses operating in China commits to his four principles, and proves itself in compliance with them, he is not concerned about whether ultimate

executive authority is vested in the country manager. “Why did I devise the four point strategy?” he asks; “First, Motorola culture is always product oriented, with everyone decentralized. Everyone makes his or her own decision. You want to do something, you don’t have any control. But, regardless of what business you are from, you have to conform to certain principles of action. You have to commit to Six Sigma, to cycle-time reduction, to Individual Dignity and Entitlement, to Total Customer Satisfaction. That is the way we think here. So in China, there is something added, the Four Point Strategy. You keep the decentralized organization, balance the constituencies, and introduce a strategy to cut across all the businesses to tell people how to conduct themselves.”

P.Y. is not discouraged by what Lindholm has called the “constructive tension”: “It’s always a problem. Always. I’m a PR man, but not only a PR man. I’m a strategist. I’m a business man. I have to understand the specifics of the technology, the cost. Does it all make sense? In short, this job requires that you exercise leadership according to certain set criteria. Otherwise your life is miserable. Besides, if you are not prepared to be this kind of leader, don’t take the job. It’ll kill you.”

Gary Tooker, appropriately enough, adds a last word here: “There will always be tension in this respect because you have an overlay that won’t quit. You either decide at the top you’re going to regionalize, or you decide that your product is going to be king forever--and then where do you hold the tradeoffs between the product manager and the regional responsibilities? We’re trying to find solutions for our style.”

9. Conclusions: New Rules

The new rules of global competition have come clear in the last few years, especially in advanced countries. Markets are much more dynamic than they were just a decade ago: there are more and more affordable ways of

researching customers needs, tracing buying habits, doing psycho-graphic research--dissecting customers into ever more discrete micro-segments. A revolution in computer-based manufacturing, logistics, order processing, and so forth, makes it more and more possible for remote competitors to serve discrete segments--competitors not only in advanced economies, but from Korea and Israel as well. Competition is total, telecommunication and information processing technologies, along with burgeoning sources of data, are lowering barriers to entry in virtually every business.

The half-life of products, correspondingly, is shrinking from a generation to perhaps a year and a half; the prestige of a brand, though crucial, is as fleeting as the company's ability to sustain quality and technological leadership; refinements are copied in a matter of months. Companies (including the business units of corporations) are thus leaner than before, and their competitive advantages are in their unique competencies and "human assets"; they achieve many of the benefits of scale by networking with other companies, or through alliances and outsourcing.

In this new world, managers create value, not by commanding direct labor, but by creatively designing and integrating human systems and software--some owned, some rented; technologies are sourced globally and are introduced immediately, so that excellence in the underlying sciences of production (metallurgy, chemistry, etc.) and system integration--the "know-why," as opposed to "know-how"--offers a (fleeting) source of competitive advantage.

But what of competition in the developing world? Do these rules apply? Motorola has learned that they do, but even more important, that there are added rules for succeeding in emerging markets, rules that reflect the peculiar, urgent interest the governments of developing countries have in catching up.

Perhaps the best way to get at these new rules is by thinking about the conventional wisdoms Motorola has inadvertently debunked over the past ten years, simply by trying to make its commitment to China work:

- *Conventional Wisdom 1: Emerging markets are opportunistic investments for global companies.* This is the “one pair of socks for every Chinese” theory, and in a way it remains compelling. But it is also terribly over-simplified. For it presumes, on the one hand, that size translates into purchasing power, and on the other, that companies can estimate of the size of the market with conventional marketing tools--neither of which are true. Motorola learned that its own original estimates were entirely too conservative, for it focused on consumer income, and failed to take into account both the capacity of state “enterprises” to buy, and the technology-based, globalist/export economy to grow. What proved to be a better guide was Bob Galvin’s insight that the internal market had to be--and could be--created through investments in infrastructure, the cultivation of government relations, training, and so forth. Motorola succeeded rather quickly, ironically, because it made a commitment to a process that it expected to take several generations. The moral and historical commitment to China is what created the conditions for business success, not the other way around.

- *Conventional Wisdom 2: Investment in developing countries requires joint ventures, both to learn about and win local customers, and find champions inside the government.* Motorola’s experience in China did not utterly disprove this point. But, on the whole, the company proved both that independence is possible and preferable. With Bob Galvin’s Track B, and, more recently, P.Y. Lai’s four point strategy, Motorola has proven that it may be possible to make a manifest demonstration of commitment to the country without having to share profit in joint ventures, or complicate

management decision making. Equally important, Motorola has shown that a venture partner (and advocate in the central government) need not be a company, eager for profit, but rather can be a city government, eager for long-term social development.

- *Conventional Wisdom 3: Investment in emerging markets must be subordinated to American values, especially civil rights.* Ironically, investment and trade must go on the more quickly in the developing world, irrespective of a government's stop-start approach to civil rights. That is because the kinds of investment companies like Motorola make are the best things Americans can do to encourage the development of civil society in such countries. Investment means education and training of a particular kind--the kind of team based problem solving, quality development, and individual initiative that make market-driven innovation possible.

- *Conventional Wisdom 4: Training supports the activities of the businesses.* Of course this is true. But the larger truth is that investments in teaching advanced technology--also in training and in upgrading local social infrastructure--do not merely support financial investments in plant and equipment, they may actually create the political climate which permits those financial investments to pay off. Motorola's most important business investments, Motorola's wafer fab included, may be said to support a strategy of training--suppliers, internal customers, local management, the government. Financial investments have been crucial in proving the sincerity of the company's intention to engage in technology transfer and the development of the local market. It is Motorola's manifest demonstration of commitment to upgrading Chinese intellectual capital that has created the umbrella under which cellular phones and pagers have been sold.

• *Conventional Wisdom 5: For a technological and global corporation to be market-driven, the leaders of the business units--the people with responsibilities for P&Ls--must exercise final executive responsibility.* This is still true so far as it goes; but in developing countries, where the customer is largely the government, the ability of the corporation to show one-face to the market is so important that the corporation will obviously have to explore a new style of control. Emergent markets put new constraints on the matrix organization. The near absolute autonomy of the company's businesses--so much a part of Motorola's historical success--may, in the words of Motorola University President William Wiggernhorn, "have to come under increasing challenge in view of the China experience." The company has needed significant national coordination here, not only to build brand equity and allow Motorola businesses to share facilities, but (most important perhaps) to back up ambitious promises to the national government, that the company would be fostering Chinese technologies and managerial skills over a generation, not just selling its products into a burgeoning national market.

All of these conventional wisdoms fail because they have in common an obsolete notion, that the main task of a company, its main source of competitive success, is the capacity to exploit inherently scarce material resources. The real challenge is to cultivate inherently limitless intellectual resources.

Bob Galvin puts it in a nutshell: "People naturally think that Motorola has come to China for a big market and for low-cost labor. But how can China be a big market if it is also a place of low cost labor? We want people in China earning more and more money--but only if they are more productive and deserve to earn more. Then Procter & Gamble will sell toothpaste, and we'll sell them radio systems. You see, we make our

markets by upgrading human resources, not by exploiting them. We want people to enjoy the greatest possible personal mobility and freedom. Then they become customers.”

Appendix: “Provisions of the State Council of the People’s Republic of China for the encouragement of foreign investment, October 11, 1986.”

Article 1. These provisions are hereby formulated in order to improve the investment environment, facilitate the absorption of foreign investment, introduce advanced technology, improve product quality, expand exports in order to generate foreign exchange and develop the national economy.

Article 2. The state encourages foreign companies, enterprises and other economic entities or individuals (hereinafter referred to as “foreign investors”) to establish Chinese-foreign equity joint ventures, Chinese-foreign cooperative ventures and wholly foreign-owned enterprises (hereinafter referred to as “enterprises with foreign investment”) within the territory of China.

The state grants special preferences to the enterprises with foreign investment listed below:

- (1) Production enterprises whose products are mainly for export, which have a foreign exchange surplus after deducting from their total annual foreign exchange revenues the annual foreign exchange expenditures incurred in production and operation and the foreign exchange needed for the remittance abroad of the profits earned by foreign investors (hereinafter referred to as “export enterprises”).
- (2) Production enterprises possessing advanced technology supplied by foreign investors which are engaged in developing new products, and upgrading and replacing products in order to increase foreign exchange generated by exports or for import substitution (hereinafter referred to as “technologically advanced enterprises”).

Article 3. Export enterprises and technologically advanced enterprises shall be exempt from payment to the state of all subsidies to staff and workers, except for the payment of or allocation of funds for labor insurance, welfare costs and housing subsidies for Chinese staff and workers in accordance with the provisions of the state.

Article 4. The site use fees for export enterprises and technologically advanced enterprises, except for those located in busy urban sectors of large cities, shall be computed and charges according to the following standards:

- (1) Five to twenty RMB Yuan per square meter per year in areas where the development fee and the site use fee are computed and charged together;
- (2) Not more than three RMB Yuan per square meter per year in site areas where the development fee is computed and charged on a one-time basis or areas which are developed by the above-mentioned enterprises themselves.

Exemptions for specified periods of time from the fees provided in the foregoing provision may be granted at the discretion of local people's governments.

Article 5. Export enterprises and technologically advanced enterprises shall be given priority in obtaining water, electricity and transportation services, and communication facilities needed for their production and operation. Fees shall be computed and charged in accordance with the standards for local state enterprises.

Article 6. Export enterprises and technologically advanced enterprises, after examination by the Bank of China, shall be given priority in receiving

loans for short-term revolving funds needed for production and distribution, as well as for other needed credit.

Article 7. When foreign investors in export enterprises and technologically advanced enterprises remit abroad profits distributed to them by such enterprises, the amount remitted shall be exempt from income tax.

Article 8. After the expiration of the period for the reduction or exemption of enterprise income tax in accordance with the provisions of the state, export enterprises whose value of export products in that year amounts to 70 percent or more of the value of their products for the year, may pay enterprise income tax at one-half the rate of the present tax.

Export enterprises in the special economic zones and in the economic and technological development zones and other export enterprises that already pay enterprise income tax at a tax rate of 15 percent and that comply with the foregoing conditions, shall pay enterprise income tax at a rate of 10 percent.

Article 9. After the expiration of the period of reduction or exemption of enterprise income tax in accordance with the provisions of the state, technologically advanced enterprises may extend for three years the payment of enterprise income tax at a rate reduced by one half.

Article 10. Foreign investors who reinvest the profits distributed to them by their enterprises in order to establish or expand export enterprises or technologically advanced enterprises for a period of operation of not less than five years, after application to and approval by the tax authorities, shall be refunded the total amount of enterprise income tax already paid on the reinvested portion. If the investment is withdrawn before the period of

operation reaches five years, the amount of enterprise income tax refunded shall be repaid.

Article 11. Export products of enterprises with foreign investment, except crude oil, finished oil and other products subject to special state provisions, shall be exempt from the consolidated industrial and commercial tax.

Article 12. Enterprises with foreign investment may arrange the export of their products directly or may also export by consignment to agents in accordance with state provisions. For products that require an export license, in accordance with the annual export plan of the enterprise, an application for an export license may be made every six months.

Article 13. Machinery and equipment, vehicles used in production, raw materials, fuel, bulk parts, spare parts, machine component parts and fittings (including imports restricted by the state), which enterprises with foreign investment need to import in order to carry out their export contracts do not require further applications for examination and approval and for exempt from the requirement for import licenses. The customs department shall exercise supervision and control, and shall inspect and release such imports on the basis of the enterprise contract or the export contract.

The imported materials and items mentioned above are restricted to use by the enterprise and may not be sold on the domestic market. If they are used in products to be sold domestically, import procedures shall be handled in accordance with provisions and the taxes shall be made up according to the governing sections.

Article 14. Under the supervision of the foreign exchange control departments, enterprises with foreign investment may mutually adjust their foreign exchange surpluses and deficiencies among each other.

The Bank of China and other banks designated by the People's Bank of China may provide cash security services and may grant loans in RMB to enterprises with foreign investment.

Article 15. The people's governments at all levels and relevant departments in charge shall guarantee the right to autonomy of enterprises with foreign investment and shall support enterprises with foreign investment in managing themselves in accordance with international advanced scientific methods.

With the scope of their approved contracts, enterprises with foreign investment have the right to determine by themselves production and operation plans, to raise funds, to use funds, to purchase production materials and to sell products; and to determine by themselves the wage levels, the forms of wages and bonuses and the allowance system.

Enterprises with foreign investment may, in accordance with themselves their organizational structure and personnel system, employ or dismiss senior management personnel, increase or dismiss staff and workers. They may recruit and employ technical personnel, managerial personnel and workers in their locality. The unit to which such employed personnel belong shall provide its support and shall permit their transfer. Staff and workers who violate the rules and regulations, and thereby cause certain bad consequences may, in accordance with the seriousness of the case, be given differing sanctions, up to that of discharge. Enterprises with foreign

investment that recruit, employ, dismiss or discharge staff and workers, shall file a report with the local labor and personnel department.

Article 16. All districts and departments must implement the “Circular of the State Council Concerning Firmly Curbing the Indiscriminate Levy of Charges on Enterprises.” The people’s governments at the provincial level shall formulate specific methods and strengthen supervision and administration.

Enterprises with foreign investment that encounter unreasonable charges may refuse to pay and may also appeal to the local economic committees up to the State Economic Commission.

Article 17. The people’s governments at all levels and relevant departments in charge shall strengthen the coordination of their work, improve efficiency in handling matters and shall promptly examine and approve matters reported by enterprises with foreign investment that require response and resolution. The agreement, contract and articles of association of an enterprise with foreign investment shall be examined and approved by the departments in charge under the State Council. The examination and approval authority must within three months from the date of receipt of all documents decide to approve or not to approve them.

Article 18. Export enterprises and technologically advanced enterprises mentioned in these provisions shall be confirmed jointly as such by the foreign economic relations and trade departments where such enterprises are located and the relevant departments in accordance with the enterprise contract, and certification shall be issued.

If the actual results of the annual exports of an export enterprise are unable to realize the goal of the surplus in the foreign exchange balance that is stipulated in the enterprise contract, the taxes and fees which have already been reduced or exempted in the previous year shall be made up in the following year.

Article 19. Except where these provisions expressly provide that they are to be applicable to export enterprises or technologically advanced enterprises, other articles shall be applicable to all enterprises with foreign investment.

These provisions apply from the date of implementation to those enterprises with foreign investment that have obtained approval for establishment before the date of implementation of these provisions and that qualify for the preferential terms of these provisions.

Article 20. For enterprises invested in and established by companies, enterprises and other economic organizations or individuals from Hong Kong, Macao, or Taiwan, matters shall be handled by reference to these provisions.

Article 21. The Ministry of Foreign Economic Relations and Trade shall be responsible for interpreting these provisions.

Article 22. These provisions shall go into effect on the date of issue.

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Avishai holds a Ph.D. in political economy from the University of Toronto, and a B.A. (Honors) in history from McGill. He has taught the Humanities at MIT and at York University in Toronto. He has published two books on

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