



Xerox and Fuji Xerox

We are committed to strengthening the strategic and functional coordination of Xerox and Fuji Xerox so that we will compete effectively against strong and unified global competitors.

-Paul Allaire, President and CEO of Xerox Corporation
-Yotaro Kobayashi, President and CEO of Fuji Xerox

Fuji Xerox, the joint venture between Xerox and Fuji Photo Film, was at a pivotal point in its 28-year history in 1990. Many considered it the most successful joint venture in history between an American and a Japanese company. Originally a sales organization for Xerox products in Japan, Fuji Xerox had evolved into a fully integrated operation with strong research, development, and manufacturing capabilities. As its sales and capabilities evolved, so did its importance within the Xerox Group: its 1989 revenues of \$3.6 billion represented 22% of the Xerox Group's worldwide revenue.¹ Furthermore, Fuji Xerox supplied the rest of the Xerox Group with low- to mid-range copiers. In Japan, the home country of Xerox's major competitors, Fuji Xerox held 22% of the installed base of copiers and 30% of revenues in the industry.

Yotaro "Tony" Kobayashi, Fuji Xerox's president and CEO, ascribed a good deal of the company's success to the autonomy that the joint venture had enjoyed from the beginning. Fuji Xerox was not "the norm" for joint ventures, he contended, adding that "the degree to which Xerox let us run was very unusual." Yet, paradoxically, as the company grew to represent a larger portion of Xerox's worldwide business (Exhibit 1), this situation seemed to be changing. "We have to begin to pay more attention to what our actions mean to Xerox," explained Kobayashi.

¹The Xerox Corporation (XC) is referred to in this case simply as Xerox. The combination of Rank Xerox (RX), Fuji Xerox (FX), and the Xerox Corporation is referred to as the Xerox Group. The revenues of Rank Xerox were consolidated into those of Xerox Corporation, but Fuji Xerox revenues were not. As described below, Xerox Corporation received 66% of RX earnings, which in turn included half of FX earnings.

Research Associate Krista McQuade and Professor Benjamin Gomes-Casseres prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

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Paul Allaire, Xerox's president and CEO, added that Fuji Xerox's autonomy had been an important factor not only in its own success, but also in its growing contribution to the Xerox Group:

The fact that we had this strong company in Japan was of extraordinary importance when other Japanese companies started coming after us. Fuji Xerox was able to see them coming earlier, and understood their development and manufacturing techniques.

We have excellent relationships with Fuji Xerox at the research, development, manufacturing, and managerial levels. Yet, because of this close relationship, there is a greater potential for conflict. If Fuji Xerox were within our organization, it would be easier, but then we would lose certain benefits. They have always had a reasonable amount of autonomy. I can't take that away from them, and I wouldn't want to.

Over the years, Fuji Xerox saw its local competitors grow rapidly through exports. The terms of its technology licensing agreements with Xerox, however, limited Fuji Xerox's sales to Japan and certain Far Eastern territories. As Canon, in particular, grew to challenge Xerox worldwide in low-end copiers, laser printers, and color copiers, Fuji Xerox began to feel constrained by the relationship. "Fuji Xerox has aspirations to be a global company in marketing, manufacturing, and research," explained Jeff Kennard, who had managed the relationship between Xerox and Fuji Xerox since 1977. Kobayashi elaborated:

The goals of Xerox and Fuji Xerox can be described as mostly compatible and partly conflicting. There *are* serious issues facing us. We often compare our situation with that of Canon or Ricoh, companies that have a single management organization in Japan. Are we as efficient and effective in the worldwide management of our business as we could be?

Some of Fuji Xerox's products, such as facsimile machines, are managed like Canon's—with single-point design and manufacturing. But now there are external conditions in the United States and Europe that call for local manufacturing and development. Rank Xerox and Xerox are able to reach efficient volumes in their marketplaces. If Fuji Xerox manufactures only for Japan and adjacent markets, our volume will be too small, but Xerox is insisting on this. It is a tough challenge that we have to face together.

How should Fuji Xerox's aspirations be managed within the context of the Xerox Group? This was one of the questions facing the Codestiny Task Force commissioned in 1989 to review the capabilities and goals of Xerox and Fuji Xerox. Composed of senior managers from both companies, the task force would seek ways to enhance the strategic relationship between Xerox and Fuji Xerox for the 1990s. This was the third such review; Codestiny I (1982) and Codestiny II (1984) had both resulted in changes in contracts and agreements between the firms. With the basic technology licensing contract between Xerox and Fuji Xerox due to be renegotiated in 1993, participants in Codestiny III knew that their analysis could well lead to a substantial restructuring of the strategic relationship between the companies.

Xerox's International Expansion

When Chester Carlson tried to sell the rights to the revolutionary xerographic technology that he invented in 1938, GE, IBM, RCA, and Kodak all turned him down. Instead, the Haloid Corporation—a small photographic paper firm in Rochester, NY—agreed in 1946 to fund further research, and 10 years later acquired the full rights to the technology. By the time the company introduced its legendary 914 copier in 1959, xerographic products had come to dominate its business; in 1961 Haloid's name was changed to Xerox Corporation. The 914 was the world's first automatic plain paper copier (PPC), and produced high-quality copies four times faster than any other copier on the market. These advantages, coupled with an innovative machine rental scheme, led Xerox to dominate the industry for nearly 20 years. Company revenues rose from \$40 million in 1960 to nearly \$549 million in 1965, and to \$1.2 billion in 1968, breaking the American record for the fastest company to reach \$1 billion in sales. Net income grew from \$2.6 million in 1960 to \$129 million in 1968. In a mere decade, the name Xerox had become synonymous with copying.

Xerox moved quickly to establish an international network. Lacking the funds to expand alone, it formed a 50/50 joint venture in 1956 with the Rank Organization of Britain. Xerox would be entitled to about 66% of the profits of Rank Xerox. Rank operated a lucrative motion picture business and was seeking opportunities for diversification. Rank Xerox (RX), the new joint venture, was to manufacture xerographic products developed by Xerox and market them exclusively worldwide, except in the United States and Canada. By the early 1960s, Rank Xerox had established subsidiaries in Mexico, Italy, Germany, France, and Australia. In 1964, Xerox bought back the right to market xerographic products in the Western hemisphere.

Japanese firms immediately inquired about obtaining xerography licenses from Rank Xerox, but they were refused on the grounds that the technology was not commercially mature. By 1958, however, RX executives had turned their sights to the Japanese market. Aware of Japanese government regulations that required foreign firms to sell through local licensees or joint ventures, they sought a strong partner. Twenty-seven Japanese firms jockeyed for the position; Fuji Photo Film (FPF) was the only nonelectronics firm in this group. Still, the company was chosen, partly because of the personal relationship and trust that had developed between RX President Thomas Law and FPF Chairman Setsutaro Kobayashi.

Fuji Photo Film was a manufacturer of photographic film since the early 1930s and second only to Kodak in that field. The company was trying to diversify its business away from silver-based photography, and was convinced that its technical expertise was well suited to the requirements of xerography. Under the direction of Nobuo Shono, the company had already begun experimenting with xerography; by 1958, it had invested six million yen in research and manufacturing facilities for the copiers that it hoped to license from Rank Xerox. As negotiations between the two companies intensified, Rank Xerox insisted on a joint venture instead of simply a license to Fuji Photo Film.

The Establishment of Fuji Xerox

Fuji Xerox, the 50/50 joint venture established by Fuji Photo Film and Rank Xerox in 1962, was originally intended to be a marketing organization to sell xerographic products manufactured by Fuji Photo Film. When the Japanese government refused to approve a joint venture intended solely as a sales company, however, the agreement was revised to give Fuji

Xerox manufacturing rights. Fuji Xerox—not Fuji Photo Film—then became the contracting party with Rank Xerox, and received exclusive rights to xerographic patents in Japan. Fuji Xerox, in turn, subcontracted Fuji Photo Film to manufacture the products. As part of its technology licensing agreements with Rank Xerox, Fuji Xerox had exclusive rights to sell the machines in Japan, Indonesia, South Korea, the Philippines, Taiwan, Thailand, and Indochina. In return, Fuji Xerox would pay Rank Xerox a royalty of 5% on revenues from the sale of xerographic products. Rank Xerox would also be entitled to 50% of Fuji Xerox's profits.

Nobuo Shono became Fuji Xerox's first senior managing director, and Setsutaro Kobayashi, its president. Shono and Kobayashi drew their core executive staff, later known as the "Seven Samurai," from the ranks of Fuji Photo Film. A board of directors consisting of representatives from Rank Xerox and Fuji Photo Film was established to decide policy matters, while day-to-day operations were left to the Japanese management. The Xerox Corporation itself was to have no direct relationship with Fuji Xerox, and would participate in the profits of the joint venture only through its share in Rank Xerox.

Although Fuji Xerox adopted a number of business practices from Xerox, including organizational structure and the rental system, it remained distinctly Japanese throughout its history. Hideki Kaihatsu, managing director and chief staff officer at Fuji Xerox, explained:

Employees are typically rotated through many functions before rising to the level of general management, and compensation and lifetime employment practices are similar to those of other Japanese firms. We emphasize long-term planning, teamwork, and we follow bottom-up decision making, including the "ringi" system. Furthermore, in procuring parts we follow the Japanese practice of qualifying a small group of vendors and working closely with them.

The Development of Fuji Xerox's Capabilities

Well before negotiations for the joint venture were finalized, engineers at Fuji Photo Film geared up for the production of Xerox copiers. Xerox machines were disassembled and studied to determine the equipment and supplies necessary for production. Three FPF engineers spent two months touring Xerox and Rank Xerox production facilities. At the establishment of the joint venture, a specific schedule was agreed upon, calling first for the sale of imported machines, then the assembly of imported knocked-down kits, and finally the domestic production of copiers. Import restrictions in Japan and government pressure to source locally accelerated this schedule, and the first Japanese-produced Xerox 914 was completed in September 1962; by 1965, 90% of the parts for the 914 came from local suppliers.

Fuji Xerox's first sales plan targeted financial institutions, large manufacturing corporations, and central government agencies. At the time of the introduction of the 914, 85% of the market was held by the inexpensive diazo type of copier. Although these copiers were difficult to operate and produced poor quality copies, they had been enormously successful in Japan, as the large number of characters in the Japanese language made typewriters difficult to use, and made copiers essential even for small offices. Ricoh, Copyer, and Mita had sold diazo copiers since the 1940s. By the early 1960s, Ricoh held an estimated 75% share of the market. A diazo copy was often referred to as a "Ricopy" in Japan.

Though Fuji Xerox had intended to sell the 914 copier outright, at Rank Xerox's insistence it implemented Xerox's trademark rental system. Within a year, the back-order list for the copier was five months' long. Output rose fivefold in five years, and Fuji Photo Film soon built a second production facility. In 1967, Fuji Xerox's sales passed those of Rank Xerox's French and German subsidiaries. Fuji Xerox's product line expanded to include other models, including a faster version of the 914, and a smaller, desktop model. The 2400, capable of making 40 copies per minute (cpm),² was introduced in 1967. Sales subsidiaries were established throughout Fuji Xerox's licensed territory.

By the late 1960s, Fuji Xerox dominated the high-volume segment of the Japanese copier market. Ricoh, however, had made great inroads into the middle segment with an electrostatic copier based on an RCA technology, and was squeezing Fuji Xerox's market from below. In addition to the threat of substitute technologies, Fuji Xerox faced the end of its monopoly in plain paper copying; some of Xerox's core patents were scheduled to expire between 1968 and 1973. FX managers were already aware of efforts by several Japanese firms to develop plain paper copiers. In response to these pressures, Peter McColough, Xerox's president and CEO at the time, proposed to transfer the manufacture of copiers from Fuji Photo Film to Fuji Xerox, and in this way combine manufacturing and marketing activities under one roof. McColough described the rationale for this decision:

Fuji Xerox had to develop its own manufacturing capability. It had built up a good marketing organization, but had no assured source of supply. That left the company vulnerable. Fuji Photo Film initially resisted this idea because it would lose manufacturing volume and product revenues. They realized in the end that the issue went to the heart of the joint venture. Looking back, that was the most difficult period in our relationship.

In 1971, Fuji Photo Film transferred its copier plants to Fuji Xerox. That same year, Fuji Xerox completed the construction of a 160,000 square-foot manufacturing and engineering facility. From then on, Fuji Photo Film had little direct role in Fuji Xerox's operations. Yoichi Ogawa, senior managing director at Fuji Xerox in 1989 and one of the Seven Samurai, explained why Fuji Photo Film remained a passive partner after 1971:

According to Fuji Photo Film's agreement with Xerox, the company, as a shareholder, could collect information from Fuji Xerox, but it could not use it in its own operations. In addition, a technology agreement between Fuji Xerox and Xerox provided that any technology acquired by Fuji Xerox from outside sources (including from Fuji Photo Film) could be freely passed on to Xerox.

In a separate development, Rank Xerox also lost much of its direct role in Fuji Xerox's operations. In December 1969, Xerox bought an additional 1% share of Rank Xerox from the Rank Organization, giving it 51% control of that joint venture. From then on, Rank Xerox would be managed as a Xerox subsidiary. Moto Sakamoto, an FX resident at Rank Xerox at the time, noticed an immediate change: "Things changed instantly as the Americans started coming in . . . gone was the old British style of management." Sakamoto was transferred to Xerox's

²The copier market was typically divided into low-, mid-, and high-volume segments. In the 1960s, the 2400 was considered a high-volume model; the original 914 copier made seven copies per minute. In the 1980s, copiers making less than 25 cpm were generally considered low-volume, while those making over 90 cpm were considered high-volume.

main facility in Rochester, NY, as Fuji Xerox began to deal directly with Xerox. Rank Xerox's ownership share in Fuji Xerox remained at 50%, and the Xerox Corporation continued to receive 66% of Rank Xerox's profits, and therefore 33% of Fuji Xerox's.

Product Development at Fuji Xerox

The transfer of production facilities to Fuji Xerox and the direct relationship established between Fuji Xerox and Xerox contributed to a continued strengthening of FX technical capabilities. Fuji Photo Film engineers had already been making modifications to Xerox designs in order to adapt the copiers to the local market; Japanese offices, for example, used different sized paper than American offices. Nobuo Shono, however, advocated the development of long-term R&D capabilities that would enable the company to develop its own products. In particular, he envisioned a high-performance, inexpensive, compact machine that could copy books. At the time, Xerox's priorities were different. Tony Kobayashi explained:

We had been insisting that the Xerox Group needed to develop small copiers as an integral part of its worldwide strategy. However, Xerox's attitude was that the low end of the market was not a priority. . . . On the other hand, we were seeing rising demand for small copiers in Japan.³

Shono's development group produced four experimental copiers, each with projected manufacturing costs approximately half those of Xerox's smallest machine. When they first heard of the effort, engineers at Rank Xerox and Xerox doubted that these models could become commercially viable. Shono persisted, and in 1970 took a working prototype to London, where its performance amazed Rank Xerox executives. The machine was slow (5 cpm), but substantially smaller and lighter than comparable Xerox models. This demonstration immediately boosted Fuji Xerox's technical reputation within the Xerox Group, and for the first time Xerox allowed Fuji Xerox a small budget for R&D. In 1973, the FX2200—the world's smallest copier—was introduced in Japan with the slogan: "It's small, but it's a Xerox." The speed of the FX2200 was doubled in 1977 by the FX2202, and the basic model was improved further by the FX2300 and the FX2305.

Mushrooming Competition

The FX2200 appeared just in time to face an avalanche of new and serious competition. Canon was the first Japanese company to enter the plain paper copier market, introducing its low end "New Process" copiers in 1970; these machines were developed in-house and did not infringe on any Xerox patent. Ricoh and Konica, Fuji Photo Film's chief Japanese rivals in film, followed with their own technologies. In 1972, Canon made another major move by introducing copiers using liquid instead of dry toner. This technology was later licensed to Saxon, Ricoh, and Copyer. Liquid-toner copiers had the advantage of being smaller and less expensive to manufacture than dry-toner copiers like Xerox's, but they were cumbersome to use. They were introduced as a cheap alternative to Xerox dry copiers. Minolta, Copia, Mita, Sharp, and Toshiba also entered the plain paper copier industry; by 1975, eleven companies competed in the Japanese market.

³Quoted in "Fuji Xerox Company, Ltd." Translation of a case study prepared by the Nomura School of Advanced Management in Tokyo.

In addition to developing small machines for its local market, Fuji Xerox tried to stem the competitive onslaught with more aggressive sales strategies. The company began to offer two- and three-year rental contracts as well as its standard one-year contract, and provided price incentives that were tied to contract length. It also began to offer three of its new low-priced copiers for outright sale, as the competition had been doing. Matazo Terada, one of the Seven Samurai, recalled that when the company tried to sell copiers before, Xerox management resisted:

Xerox insisted on uniform policies—every country had to be managed like the U.S. firm. That was successful only while we were protected from competitors because of our monopoly. If Xerox had been more flexible from the beginning, we might have captured a larger market. That was a lost opportunity.

By 1977, Ricoh accounted for 34% of the number of copiers installed in Japan. Fuji Xerox followed with 25%, Canon with 15%, and Konica with 10%. In terms of copy volume, however, Fuji Xerox led the competition with more than 50% of the market, followed by Ricoh with 20%, and Canon and Konica with 10% each. In the low end of the market, Ricoh accounted for 50% of copy volume, compared to 10% for Fuji Xerox.

Fuji Xerox's TQC Movement

Partly as a response to the new competition of the 1970s, as well as the oil shock and recession of 1973-1975, Fuji Xerox launched a Total Quality Control (TQC) program. Fuji Photo Film had operated a successful statistical quality control program, and in 1956 won the prestigious Deming Prize, awarded to companies that had shown outstanding quality management throughout their organization. Fuji Xerox's New Xerox Movement had three primary aims: to speed up the development of products that matched customer needs; to reduce costs and eliminate waste; and to adopt aggressively the latest technologies.

The focal point of the campaign was the development of "dantotsu," roughly translated as the "Absolute No. 1 Product." Company executives challenged the marketing and engineering departments to develop a product fitting this description in less time and at a lower cost than the competition. For six months, project proposals were turned down until the basic concept for the new product emerged in 1976: a compact, 40 cpm machine manufactured for half the price of any comparable machine, with half the number of parts of previous models, and developed in two years, compared to Xerox's typical four. Setsutaro's son, Tony Kobayashi, who became FX president in 1978 after his father died, explained:

This was the first time Fuji Xerox had developed a copier based on our own design concept. The FX2200 copier we previously developed was an improved adaptation of a model developed in the United States. The American system of development was well established in our company. However, the U.S. way of developing new products on a step-by-step basis was too time consuming for our dynamic environment. The competition in the Japanese market required us to study the development systems of our rivals. . . . We found that we had been spending too much time in development. That is why we formulated the design concept for the new model and committed the entire company's resources to its development within a very limited timetable.⁴

⁴Quoted in "Fuji Xerox Company, Ltd."

The FX3500 was indeed introduced two years later, and by 1979, it had broken the Japanese record for the number of copiers sold in one year. Ricoh and Canon rushed to develop copiers that could compete in the FX3500's market segment. Largely because of Fuji Xerox's effort to develop the FX3500, the company won the Deming Prize in 1980. In addition, the FX3500 firmly established Fuji Xerox as a technologically competent member of the Xerox Group. David Kearns, who would become Xerox's president in 1977, was amazed when he first saw a demonstration of the FX3500 prototype, and spontaneously broke out in applause.

Later, some observers labeled the FX3500 Fuji Xerox's "declaration of independence." The FX3500 project came after Xerox canceled a series of low- to mid-volume copiers on which Fuji Xerox was depending. Code-named SAM, Moses, Mohawk, Elf, Peter, Paul, and Mary, they were each canceled in mid-development, even though Fuji Xerox had gaps in its product range in the Japanese market. Jeff Kennard remembered that when Tony Kobayashi was told about the cancellation of Moses, he was also asked to stop work on the FX3500 project. "Tony refused," Kennard recalled, adding that Kobayashi said, in effect, "As long as I am responsible for the survival of this company, I can no longer be totally dependent on you for developing products. We are going to have to develop our own."

Xerox's Lost Decade

During the 1970s, competition in the U.S. and European copier markets changed radically. Prior to that period, Xerox had had a virtual monopoly because of its xerography patents. But beginning in 1970, one competitor after another entered the industry, often with new and improved PPC technologies. The Xerox Group share of worldwide PPC revenues fell from 93% in 1971 to 60% in 1975, and 40% in 1985 (Exhibit 2). This was Xerox's "lost decade"—an era of increasing competition, stagnating product development, and costly litigation.

New Competition High and Low

The proliferation of PPC vendors that started in Japan in the early 1970s soon appeared in the United States and Europe. By 1975, approximately 20 PPC manufacturers operated worldwide, including reprographic companies (Xerox, Ricoh, Mita, Copyer, A.B. Dick, AM, and 3M), paper companies (Dennison, Nashua, and Saxon), office equipment companies (IBM, SCM, Litton, and Pitney Bowes), photographic equipment companies (Canon, Konica, Kodak, and Minolta), and consumer electronics companies (Sharp and Toshiba).

Canon's New Process copiers were the first to hit the U.S. market, followed by a wave of liquid-toner copiers. The new Japanese machines were priced aggressively, and sold outright through independent dealers. On average, these machines broke down half as often as Xerox copiers. Canon sold under its own brand name, taking advantage of its reputation for quality photographic products, and supported its dealers through extensive financing, and sales and service training. Ricoh sold its machines through Savin Business Machines and the Nashua Corporation. Savin, primarily a marketing company, had funded the Stanford Research Institute's development of a liquid-toner copier, and subsequently had licensed Ricoh to manufacture the machines. The first Ricoh machines using this new technology were introduced in 1975 and were an instant success. Konica, Toshiba, Sharp, and Minolta, entered the U.S. market through OEM relationships, as well as with their own brands.

Despite the entrance of so many Japanese competitors into the U.S. market, Xerox initially did little to respond to them. These competitors targeted the low end of the market, leaving Xerox's most important segments seemingly unaffected. Furthermore, Xerox continued to dominate the world copier market, with revenues that rose each year by more than Savin's total copier sales. Xerox executives were more concerned by the entrance of IBM and Eastman Kodak into the copier industry, as these companies targeted the mid- and high-volume segments. (See Exhibit 3.)

IBM's introduction of its Copier I in 1970 signaled the end of Xerox's monopoly in its home market. Although IBM's first model was not successful because of a combination of high price and performance problems, the Copier II, introduced in 1972, began to take market share away from Xerox. These machines were marketed by IBM's office products sales force on a rental basis, supported by heavy advertising. IBM introduced the Copier II in Europe and Japan in 1975, and by 1976 had installed 80,000 copiers worldwide, against Xerox's estimated 926,000. IBM's high-volume Copier III came out in 1976, but was withdrawn because of reliability problems. It was reintroduced as a mid-volume machine early in 1978, but IBM's copier business suffered permanently from the setback.

Eastman Kodak's main facilities were located across town from Xerox's in Rochester, NY. Kodak's success as a high-technology, chemistry-based, American firm had been a model for Xerox's founders and early leaders. When Kodak introduced the high-end Ektaprint 100 copier in 1975, however, admiration quickly turned to intense rivalry. Unlike the IBM Copier I, Kodak's first machine was extremely innovative. In particular, it featured a microcomputer that monitored the performance of the copier and alerted operators to problems through a digital display. A central computer at Kodak monitored the trouble signals and dispatched service people to a machine before breakdown. The machines were also capable of excellent reproduction. The Ektaprint series was well accepted in the marketplace, and quickly gained a reputation for the highest-quality image reproduction in the field.

Xerox's Stagnation

In its first competitive actions against IBM, Kodak, and the Japanese entrants, Xerox could not come up with a winning strategy. It focused R&D on developing a super high-speed copier and field-tested its first color copier in 1971; neither became a commercial success. Xerox's mid-volume 4000 and 3100 series, introduced in the early 1970s, suffered from reliability problems and were also commercial failures. Even when the price of the 3100 was slashed from \$12,000 to \$4,400, it did not sell well. Ricoh/Savin became the top seller in the U.S. market in 1976, and Xerox's market share in the United States continued to fall. However, the seriousness of Xerox's situation was slow to sink in, according to David Kearns:

... we dominated the industry we had created. We were convinced that we were providing the world with high-quality machines, and our convictions were reinforced by the broad acceptance of Xerox products by our customers. We had always been successful, and we assumed that we would continue to be successful. Our success was so overwhelming that we became complacent.⁵

⁵David T. Kearns, "Leadership Through Quality," *Academy of Management Executive*, vol. 4 (1990): 86-89.

About 1978, Fuji Xerox offered to sell its FX2202 copier to Xerox and Rank Xerox to help them counter Japanese competition in the United States and Europe. Rank Xerox purchased 25,000 of the machines, but Xerox Corporation refused to buy any.⁶ Bill Glavin, the managing director at Rank Xerox at that time, noted:

We had never placed such a large order before and expected to sell them in 12 months. Two thousand machines per month was an incredible rate of sales, but we did it. For Tony Kobayashi, that order must have represented a substantial part of his production that year. We worked closely with them, and they gave us top-notch support.

This first successful cooperation led Rank Xerox to import more of the FX machines. In addition, Kodak had delayed its entry into Europe by two years, giving Rank Xerox time to formulate a defensive marketing strategy for the high end. As for IBM, its excellent distribution network and reputation in Europe could not make up for a generally inferior product. As Wayland Hicks, the general manager of Rank Xerox's U.K. operating company in the late 1970s, noted, "If IBM had Kodak's product, Xerox would have been dead." Rank Xerox was able to defend its market share while Xerox's U.S. share continued to decline.

In 1979, largely because of Rank Xerox's success with the FX product, Xerox began to import the FX2202, and later the FX2300 and the FX2350. Typically, in the year that the products were introduced in the U.S. market, the machines were assembled by Fuji Xerox before export. Then, acceding to union demands in the United States, Fuji Xerox exported them as knock-down units to be assembled at Xerox. "Some of our people had been reluctant to import FX machines," recalled Peter McColough. "Our engineers felt that they had developed xerography, and that the first FX machines weren't good enough."

Courtroom Battles

Xerox became involved in the 1970s in a series of courtroom battles. Immediately after IBM came out with its Copier I in 1970, Xerox sued for patent infringement, and IBM countersued. The companies argued 12 separate counts in the United States and Canada. Xerox won some of these suits and the rest were settled in 1978, when the firms agreed to an exchange of patents covering all information-handling products and to a \$25 million payment to Xerox. Two other American firms, the SCM Corporation and Van Dyk Research, sued Xerox for alleged antitrust violations in 1973 and 1975, respectively, each claiming \$1.5 billion in damages. Both lost their suits in 1978-1979.

More damaging still, the Federal Trade Commission (FTC) initiated action against Xerox in 1973, charging that the firm controlled 95% of the plain paper copier industry, and that its pricing, leasing, and patent-licensing practices violated the Sherman Antitrust Act. The FTC demanded that Xerox offer unrestricted, royalty-free licenses on all its copier patents, that it divest itself of Rank Xerox and Fuji Xerox, and that it allow third parties to service, maintain, and repair copiers leased from Xerox. In 1975, Xerox settled out of court by signing a consent decree with the FTC, in which it agreed to license more than 1,700 past and future patents for a period of 10 years. Competitors were permitted to license up to three patents free of royalties,

⁶Although Xerox had acquired equity control of Rank Xerox in 1969, the line operations of the two firms were not integrated until 1978. Rank Xerox could thus make this decision in relative autonomy.

to pay 0.5% of revenues on the next three, and to license additional patents royalty free. Xerox also agreed to forgive past patent infringements, to cease offering package-pricing plans on machines and supplies, and to begin outright sales of machines.

Kodak, IBM, Canon, Ricoh, and other Japanese firms were among the firms to secure Xerox licenses under this arrangement. At this point, the Japanese firms that had entered the market with liquid-toner copiers switched to Xerox's dry-toner process.

Adjusting the Relationship between Xerox and Fuji Xerox

As Fuji Xerox's business grew and Xerox's came under increasing pressure at home, the relationship between the two companies changed. The original joint venture and technology assistance agreements of the early 1960s were updated in 1976 and in 1983, and numerous interim agreements were signed to adjust policies on such issues as procurement and relations to third parties (Exhibit 4). Bob Meredith, a lawyer by training and Xerox's resident director in Tokyo, described the role of these contracts:

The legal contracts are flexible. We don't follow an adversarial, arm's-length approach, where you might try to gain short-term advantage or act opportunistically. The equity commitment focuses our relationship on one main objective: What is the profit-maximizing thing to do?

Technology agreements and other contracts between Xerox and Fuji Xerox provided guidelines for the relationship. In addition, the contracts specified royalties and transfer pricing procedures. In 1976, a Technology Assistance Contract (TAC) had been signed by Xerox and Fuji Xerox, which maintained the 5% royalty that Xerox received from Fuji Xerox's xerographic sales, and that was to last 10 years. During the Codestiny I discussions, however, the royalty structure of the contract was revised. The 1983 TAA established a basic royalty on Fuji Xerox's total sales, representing Fuji Xerox's right to use the Xerox tradename and technology in its licensed territory. The royalty on xerographic sales, however, was set to decline annually between 1983 and 1993. In addition, for the first time Fuji Xerox would begin receiving a manufacturing license fee (MLF), designed to compensate it for its development and manufacturing investments. In particular, an MLF of up to 20% could be added to the unit costs of FX machines exported in knocked-down form and assembled and sold by Xerox.

These and other subtle changes in the relationship between the two firms tended to reinforce Fuji Xerox's autonomy. David Kearns recalled how he worked to "unfetter" Fuji Xerox in the late 1970s:

Xerox was attempting to control so many aspects of Fuji Xerox's operations. We were reviewing their marketing strategies, what products they were going to develop, and so on. But it didn't make sense to me to try to run the business from thousands of miles away. So, I encouraged them to pursue their own strategies and develop their own products. Of course, they were moving in that direction anyway.

Turning Around Xerox

In 1979, Xerox began to formalize a strategy based on the reality of its declining position in the copier industry. Kearns recalled the initial shock of the necessity to do so:

The Japanese were selling products in the United States for what it cost us to *make* them. We were losing market share rapidly, but didn't have the cost structure to do anything about it. I was not sure if Xerox would make it out of the 1980s.

One of Xerox's strategies was to diversify out of copiers by acquiring a number of financial services companies between 1983 and 1988. Financial services, Kearns believed, would provide "an anchor in a nonmanufacturing business, and one in which Japanese companies were not active overseas." Before the financial services industry went sour at the end of the decade, this line of business was a steady source of earnings for Xerox, providing more than \$2 billion in profits in five years. In 1989, however, financial services' earnings declined significantly and substantial assets were written off.

Kearns also began to take a closer look at the strategies of Fuji Xerox and other Japanese companies. Upon importing the first FX products, Xerox engineers had been amazed by a reject rate for parts that was a mere fraction of the American rate, and by substantially lower manufacturing costs. Visits to FX facilities introduced Xerox executives to the practice of "benchmarking," or systematically tracking costs and performance in all areas of operations against those of the best in the field. The findings from Xerox's own benchmarking efforts helped fuel Kearns's efforts to infuse his organization with new vision and determination.

In 1981, Kearns announced a companywide initiative for "business effectiveness," and two years later formally launched Xerox's Leadership Through Quality program. Xerox's program was based on the experience of Fuji Xerox, and throughout the effort, Kearns called upon Kobayashi and others at Fuji Xerox for help. Xerox hired Japanese consultants recommended by Fuji Xerox, and some 200 high-level Xerox and Rank Xerox managers visited Fuji Xerox in later years to learn first-hand about its TQC management and philosophy. The Leadership Through Quality program emphasized high employee involvement in attaining five major goals: (1) increased market research and competitive benchmarking; (2) just-in-time manufacturing to decrease costs; (3) faster product development; (4) development of state-of-the-art technology; and (5) a devotion to quality in all areas.

The rallying point for Xerox's quality movement was the development of the 10 Series, a new family of copiers. Wayland Hicks, in charge of this development effort, stated: "The Xerox turnaround started on September 22, 1982, at the announcement of the 1075 in New York." Led by this mid-volume machine, the 10 Series became the most successful line of copiers in Xerox history, and served to restore the company's finances and morale. The series—dubbed the "Marathon" family of copiers—represented a new generation of machines aimed primarily at the mid-volume segment of the market. Altogether, some fourteen models were introduced between 1982 and 1986, six of which were still sold in 1990. Fuji Xerox designed and produced the low end models in the 10 Series—the 1020, 1035, and the 1055, the latter drawing on basic technologies developed for the FX3500. The 1075 became the first American-made product to win Japan's Grand Prize for Good Design. Because at that time Xerox's Japanese competitors were not strong in mid-volume copiers, the 10 Series forestalled their move into that segment of

the market and helped Xerox win back market share. The company regained 2-3 percentage points in 1983, and 12 points in 1984. By the end of 1985, more than 750,000 10 Series machines had been rented or sold, accounting for nearly 38% of Xerox's worldwide installed base.

Throughout the 1980s, Xerox continued to change the way it did business. For example, over 100,000 employees went through three days of off-site training to unite the entire organization behind the quality effort. The program achieved significant improvements in Xerox operations. After reducing its supplier base, the company reduced its purchased parts' costs by 45% and their quality was improved dramatically. Xerox's average manufacturing costs were reduced by 20% and the time-to-market for new products was cut by 60%. Xerox's progress was recognized by the U.S. Commerce Department in 1989, when the company's Business Products and Systems division received the Malcolm Baldrige National Quality Award for its "preeminent quality leadership." (Xerox's 1980s financial results are in Exhibit 5.)

Xerox and Fuji Xerox in the 1990s

The Canon Challenge

A number of factors were expected to continue to draw Fuji Xerox and Xerox closer to each other in the 1990s. One was the continuously rising capabilities of the Xerox Group's competitors, particularly Canon. While Xerox's precipitous decline in the 1970s had been stemmed and many of the competitors from that decade had faded away, Canon's copier business continued to expand. From 1980 to 1989, Canon's total sales grew from \$2.9 billion to \$9.4 billion, a growth rate of 14% per year. Canon's R&D spending grew even more rapidly at 24% per year, from \$77 million to \$525 million. By 1989, Canon was no longer primarily a camera company—40% of its revenues came from copiers, and 20% from laser printers.

In the second half of the 1980s, Canon developed a dominating presence in the low end laser printers that were becoming ubiquitous companions to microcomputers. Laser printing technology was closely related to plain paper copying technology, and as digital copying systems were introduced, the importance of laser printing in the PPC market was bound to increase. Canon's laser printing engines were the core of the highly successful Hewlett-Packard Laserprinter series, which accounted for about 50% of laser printer sales in the United States. This OEM business was thought to yield Canon some \$1 billion in revenues. In the rest of the world, Canon sold printers under its own brand name.

In copiers, Canon was strong in the low end of the market, and had recently developed a growing business in color copiers, where it held 50% of the market by 1989. Analysts pointed out that Canon was introducing twice as many products as the Xerox Group, although it spent less than \$600 million on R&D annually, compared to Xerox's \$800 million and Fuji Xerox's \$300 million. Canon's goal was to become a \$70 billion company by the year 2000, implying a 22% annual growth rate in the 1990s. A significant portion of this growth was projected to come from Xerox's heartland—high- and mid-volume copiers and printers.

Xerox, however, was determined to be aggressive in its response. Hicks, who in 1989 had become the executive vice president for worldwide marketing at Xerox, hung a framed blow-up of a 1984 *Fortune* article on Canon in his office. It was entitled "And Then We Will Attack;" below it Hicks hung a sign that read: "And Then They Will Lose."

Xerox Group strategists saw the relationship between Xerox and Fuji Xerox as a critical element in competing worldwide against Canon. Canon had a strong presence in all major world markets, as did the Xerox companies (Exhibit 6). But Xerox CEO Paul Allaire highlighted a major difference in the two firms' global networks: "When we negotiate with Fuji Xerox, we can't just represent ourselves. We need to find what is fair and equitable to essentially three partners. Canon is 100% owned by one company."

The Fuji Xerox Challenge

Another trend drawing Fuji Xerox and Xerox closer was the growth of Fuji Xerox itself (Exhibit 7). Fuji Xerox's dollar revenues grew faster than Xerox's in the 1980s, and represented a more significant portion of the Xerox Group's worldwide revenues than it had previously. Fuji Xerox's financial contribution to Xerox's net earnings in the form of royalties and profits had also grown sharply—from 5% in 1981 to 22% in 1988. And throughout the decade, Fuji Xerox had been an important source of low end copiers for Xerox. Between 1980 and 1988, Fuji Xerox's sales to Xerox and Rank Xerox grew from \$32 million to \$620 million (Exhibit 8). "Fuji Xerox is a critical asset of Xerox," concluded Allaire.

Fuji Xerox developed its technological capabilities further in the 1980s, investing heavily in R&D (Exhibit 9). While it continued to rely on Xerox for basic research on new technologies, by the late 1980s very few of the models sold by Fuji Xerox in Japan had been designed by Xerox (Exhibit 10). For the most part, they were high-end models, working at speeds of above 120 cpm. Heavy investment by Fuji Xerox during the late 1980s had produced many low-end models, and even a few in the 60-90 cpm range. Many of these were exported to or manufactured by Xerox and Rank Xerox. In 1980, 70% of the low-volume units sold by Xerox and Rank Xerox were of their own design, and 30% were of Fuji Xerox design; by 1987, 94% were of Fuji Xerox design. Even in 1989, however, all of Xerox and Rank Xerox's mid- and high-volume copiers were of their own design.

All these factors led Fuji Xerox and Xerox to intensify their cooperation on research, product development, manufacturing, and planning in the 1980s. Bill Glavin and Jeff Kennard worked together to launch "strategy summits." Glavin described why:

We needed the senior management of research, engineering, manufacturing, and planning from both companies to come together, and begin discussing the issues that affected them jointly. The talks included people from all product lines—copiers, printers, and systems. We tried to agree on common strategies and allocate who should do what.

These top management summits were held about twice a year during the 1980s, and led to further meetings between the functional organizations on each side. Fuji Xerox's organization mirrored Xerox's: a corporate research group did basic and applied research; machines were designed and built by the development and manufacturing organization; and products were sold and serviced by the marketing organization. Collaboration between Xerox and Fuji Xerox seemed to be most successful in research, and harder to implement in development and manufacturing; there was no coordination at all between marketing groups, as each had a different licensed territory. Of course, there was some tendency to protect traditional turfs. "On both sides you cannot totally dismiss the NIH syndrome," commented

Tony Kobayashi. "It is another form of parochialism." Still, where the incentives for collaboration were high, the companies launched joint projects, agreeing on who would take "lead" and "support" roles and eliminating overlapping activities. Bill Spencer, Xerox vice president of technology at the time, described the rationale behind one of these joint research projects:

It is an attempt to combine American ingenuity with the manufacturing skills of the Japanese. Xerox has excellent basic research and software capabilities, and Fuji Xerox is good at development and hardware design. Together, we should be able to develop better products quicker than alone.

The functional collaboration between the companies was reinforced by exchanges of personnel and by an evolving communication process. Since the 1970s, personnel from Fuji Xerox had spent time as residents at Xerox and engineers from both companies had frequently crossed the Pacific to provide on-the-spot assistance. These personnel exchanges had, in fact, been an important channel for the transfer of technology from Xerox to Fuji Xerox. By 1989, an estimated 1000 young, high-potential FX employees had spent three years each as residents at Xerox, and some 150 Xerox people had done this at Fuji Xerox. These residents were directly involved in the work of their host companies. Every year there were also some 1000 shorter visits by engineers and managers. These exchanges and the summit meetings contributed to a constructive relationship. "Whenever a problem came up, we established a process to manage it," explained Jeff Kennard. "The trust built up between the companies has been a key factor in the success of this relationship. It enables one to take on short-term costs in the interest of long-term gains for the group."

By the mid-1980s, most Xerox managers also had mixed feelings of challenge and admiration toward Fuji Xerox, which were echoed by Kennard:

It seems that every time Xerox blinks and retracts, Fuji Xerox forges ahead. Fuji Xerox continues to be the agent for change. They have great corporate vision and they target what is strategically important. Then they take tough decisions and make the needed investment.

The Management Challenge

In this context, Allaire and Kobayashi commissioned the Codestiny III Task Force, charging it with developing a framework for cooperation between the two companies in the 1990s. The task force consisted of top planners in each company and was to report to the two CEOs within a year of its formation. Roger Levien, Xerox's vice president for strategy and head of the Codestiny III talks, described the motivation for the project:

Fuji Xerox had certain issues they wanted to discuss, and we agreed to do so in the Codestiny process. One of their desires was to get the worldwide market for the low end. They also wanted to develop a more symmetric relationship with us. We wanted to spell everything out, identify all of the alternatives, and leave the final decision to top management.

One of the issues to be addressed by the Codestiny team was Fuji Xerox's aspirations to expand its markets in Asia. Under the existing technology licensing contracts, Fuji Xerox had the right to sell in Indonesia, South Korea, the Philippines, Taiwan, and Thailand (total GDP in

1989: \$570 billion), and it had indeed established sales subsidiaries in each of these markets. But Rank Xerox in London was responsible for managing sales in what it called the South Pacific Operations—Australia (1989 GDP: \$280 billion), New Zealand (\$45 billion), Singapore (\$28 billion), Malaysia (\$37 billion), China (\$420 billion), and Hong Kong (\$63 billion). Since the early 1980s, Fuji Xerox had argued that this arrangement led to inefficiencies in serving the South Pacific markets. At that time, knock-down kits were sometimes shipped from Fuji Xerox to Britain for assembly, and then shipped back to Asia for sale. Furthermore, Rank Xerox followed a very different marketing strategy in these markets than Fuji Xerox did in its neighboring Asian markets. Rank Xerox emphasized high profit margins and sales of high-end machines, whereas Fuji Xerox put greater emphasis on market share and low end products. As a result, when Fuji Xerox urged Rank Xerox in the late 1970s to adopt a more aggressive sales strategy in Australia before Canon entered that market, Rank Xerox refused. Although Rank Xerox managed the South Pacific countries out of a regional office in Hong Kong, Fuji Xerox's sales subsidiaries were usually joint ventures with local partners, and so drew more on local management talent.

Another key issue for the Codestiny team was how the Xerox Group should manage the low-end laser printer business in the United States. This market segment was receiving renewed attention in 1989, following the appointment of Bill Lowe as Xerox's executive vice president for development and manufacturing. Lowe came to Xerox from IBM, where he had been in charge of the personal computer business. Soon after arriving at Xerox, he began to focus on the problems in the low-end copier and printer businesses, where Fuji Xerox typically developed and manufactured products sold by Xerox.

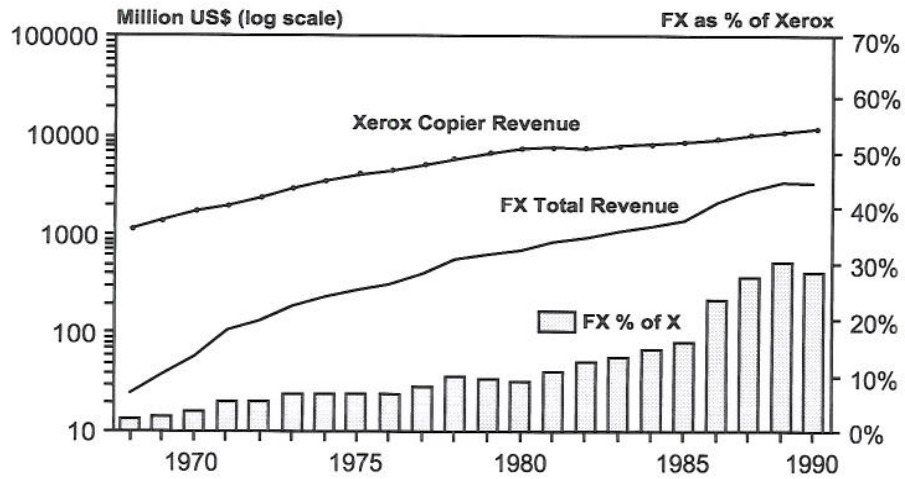
Both companies were trying to get full profit out of it, even though the margins were slim. Fuji Xerox's policy was to mark up costs; Xerox's was to get an acceptable gross profit. Furthermore, each product had a different mark-up scheme, and many sideline deals confounded the issues. This fostered sharp dealings between the partners. So, most of our energy was focussed on each other, not on Canon. We were pointing fingers and frustrating ourselves.

The Codestiny team analyzed these specific issues within a broad framework, and began by outlining the various options available for cooperation in marketing, research, and development and manufacturing (Exhibit 11). The team considered the advantages and disadvantages of each of these options and began to develop possible strategies for the South Pacific Operations and for the low-end printer business in the United States.

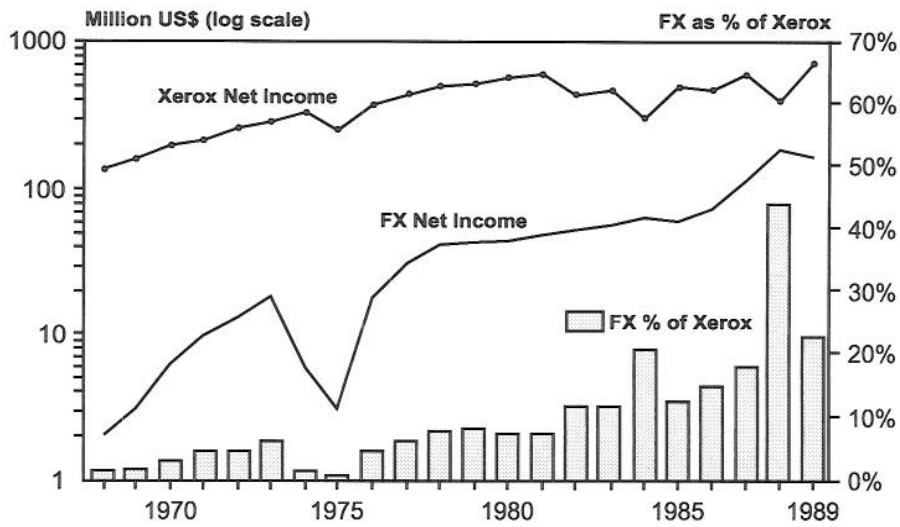
But there was much more at stake than decisions in these two areas. The central question facing Xerox and Fuji Xerox was: How should the relationship between the two companies be structured and managed in the new global environment of the 1990s?

Exhibit 1 Growth of Xerox Corporation and Fuji Xerox, 1968-1989

Xerox and Fuji Xerox Revenues



Xerox and Fuji Xerox Earnings



Source: Xerox and Fuji Xerox annual reports

Notes: Top: The Xerox revenues shown include Rank Xerox but not Fuji Xerox.

Bottom: Xerox earnings include 33% of FX earnings.

Exhibit 2 Copier Sales of Leading Vendors Worldwide, 1975-1985
(in millions of US\$)

	1975	1980	1985
Xerox Group	\$3,967	\$7,409	\$8,903
U.S. and Americas	2,340	3,866	4,770
Rank Xerox	1,350	2,856	2,400
Fuji Xerox	277	687	1,733
Canon	87	732	2,178
Ricoh	290	1,092	1,926
Kodak	1	300	900
IBM	310	680	700
Minolta	25	387	743
3M	380	575	400
Oce	178	680	600
Savin	52	430	448
Konishiroku	85	302	470
Nashua	155	401	278
Agfa	115	268	200
Pitney Bowes	52	129	204
A.B. Dick	35	55	60
Saxon	56	127	20
AM International	59	23	10
Other Japanese	155	1,220	2,846
Other	596	792	1,115
Total	\$6,598	\$15,602	\$22,001
Shares of Leading Firms in World Total			
Xerox Group	60%	47%	40%
Americas	35	25	22
Rank Xerox	20	18	11
Fuji Xerox	4	4	8
Canon	1	5	10
Ricoh	4	7	9
Kodak	0	2	4
IBM	5	4	3
Minolta	0	2	3

Source: Donaldson, Lufkin & Jenrette, Inc.

Exhibit 3 Copier Unit Placements of Xerox and Major Competitors

	Thousands of units placed by market segment (net) ^a					Share of net placements in each market segment				
	PCs	Low	Mid	High	Total	PCs	Low	Mid	High	Total
In the United States:										
<i>Xerox</i>										
1975	--	9	-8 ^b	1	2	--	29%	--	100%	6%
1980	--	34	6	6	46	--	11%	22%	52%	13%
1985	--	66	27	15	108	0%	10%	21%	53%	10%
1989	12	101	53	13	179	5%	14%	27%	45%	15%
<i>Kodak and IBM</i>										
1975	--	--	10	--	10	--	0%	213%	0%	27%
1980	--	--	5	5	11	--	0%	20%	48%	3%
1985	--	--	2	13	14	0%	0%	2%	46%	1%
1989	--	--	5	9	13	0%	0%	2%	31%	1%
<i>Canon</i>										
1975	--	3	--	--	3	--	10%	0%	0%	8%
1980	--	46	4	--	50	--	15%	14%	0%	14%
1985	176	107	17	--	300	86%	16%	13%	0%	29%
1989	141	106	19	4	270	62%	15%	10%	13%	23%
<i>Others</i>										
1975	--	19	3	--	22	--	61%	55%	0%	59%
1980	--	237	12	--	249	--	75%	44%	0%	70%
1985	30	514	81	--	625	14%	75%	64%	0%	60%
1989	75	513	123	3	714	33%	71%	61%	11%	61%
<i>Total for All Vendors</i>										
1975	--	31	5	1	37					
1980	--	317	27	11	355					
1985	206	687	126	28	1,047					
1989	227	710	200	29	1,176					
In Western Europe:										
<i>Rank Xerox</i>										
1980	--	40	4	4	48	--	11%	22%	100%	13%
1984	--	54	19	9	82	0%	9%	25%	74%	10%
1989	18	73	49	4	144	7%	10%	29%	34%	12%
<i>Kodak</i>										
1980	--	--	4	--	4	--	0%	22%	0%	1%
1984	--	--	--	3	3	0%	0%	0%	26%	0%
1989	--	--	2	2	3	0%	0%	1%	13%	0%
<i>Canon</i>										
1980	--	36	4	--	40	--	10%	21%	0%	11%
1984	115	81	8	--	204	90%	15%	10%	0%	26%
1989	130	110	25	3	268	49%	15%	15%	26%	22%
<i>Total for All Vendors</i>										
1980	--	351	19	4	374					
1984	128	578	76	12	794					
1989	268	752	168	11	1,199					

Exhibit 3 (continued)

	Thousands of units placed by market segment (net) ^a					Share of net placements in each market segment ^a				
	PCs	Low	Mid	High	Total	PCs	Low	Mid	High	Total
In Japan:										
<i>Fuji Xerox</i>										
1986					112					20%
1989					142					21%
<i>Canon</i>										
1986					138					25%
1989					195					28%
<i>Others^c</i>										
1986					311					55%
1989					354					51%
<i>Total for All Vendors</i>										

Source: Dataquest Incorporated

^a"Net Placements" are sales and new rentals minus old rentals returned to the vendor. Volume segments are defined as follows:

PC = less than 12 cpm (average price about \$1,000)

Low = 12 to 30 cpm (average price about \$3,000)

Mid = 31 to 69 cpm (average price about \$8,500)

High = over 70 cpm (average price about \$55,000)

^bIndicates that, on balance, 8,000 rental units were returned^cRicoh was particularly strong in Japan, with a 32% share in 1989

Exhibit 4 Major Agreements Between Xerox and Fuji Xerox

1960 Joint Enterprise Contract and Articles of Incorporation (1962)

- Established equal ownership of FX by Rank Xerox and Fuji Photo Film
- Defined FX's exclusive license to Xerography in its territory:
 - Japan, Taiwan, Philippines, the Koreas, Indonesia, Indochina
- FX nonexclusive license to nonxerographic products in territory
- Specifies terms of technology assistance
 - Royalty due Rank Xerox: 5% of net sales of xerographic products

1976 Joint Enterprise Contract (JEC)

- Agreement between Rank Xerox and Fuji Photo Film, updating 1960 JEC
- Specified Board of Directors composition
- FX Management to be appointed by Fuji Photo Film
- Agreements on technology transfer, royalties, and transfer pricing
- Identified matters requiring Xerox concurrence, including:
 - Financial policy, including major capital expenditures
 - Business and operating plans
 - Relations with third parties
 - Sales outside of FX licensed territory

1976 Technological Assistance Contract (TAC)

- 10-year agreement between Xerox and Fuji Xerox
- Revised technology assistance agreements of 1960, 1968, and 1971
- Maintained 5% royalty on xerographic products

1978 R&D Reimbursement Agreement

- Defines reimbursement to FX for R&D on FX products marketed by Xerox
 - 100% to 120% of design cost

1983 Technology Assistance Agreement (TAA)

- 10-year agreement between Xerox and Fuji Xerox
- Replaced 1976 technology transfer agreements
- Revised royalty rates:
 - Basic Royalty on **total** FX revenue, plus
 - Royalty on **xerographic** revenues to decline annually from 1983 to 1993

1983 Product Acquisition Policy

- Provided guidelines for intercompany transfer pricing
- Established concept of reciprocal Manufacturing License Fee (MLF), designed to reimburse FX for development and manufacturing costs:
 - Up to 25% mark-up on assembled machines supplied by FX
 - Up to 20% mark-up on unit cost for FX machines assembled by XC
 - Specific designs and services required by Xerox reimbursed 100%

1985 Procurement Policy

- Provided guidelines for Xerox procurement in FX licensed territory:
 - FX right to bid first
 - Procurement from third party to be coordinated with FX

1986 Arrangements Strategy Agreement

- Defined parameters for negotiating alliances with third parties

Source: Compiled from Xerox Corporation documents

Exhibit 5 Key Financial Data for Xerox and Fuji Photo Film (in millions of US\$)

	1971	1976	1981	1982	1983	1984	1985	1986	1987	1988	1989
XEROX CORPORATION											
Total revenues	1,954	4,515	8,180	8,073	10,463	11,400	11,994	13,287	15,108	16,441	17,635
Document processing			8,013	7,895	8,223	8,714	9,068	9,744	10,834	11,688	12,431
Financial services			167	178	2,240	2,686	2,926	3,543	4,274	4,753	5,204
Operating income	785	1,486	2,071	1,654	1,444	1,557	1,502	1,327	1,376	2,154	2,031
Net income	213	365	598	424	466	291	475	465	578	388	704
Total assets	2,250	4,959	7,674	7,668	14,064	15,154	16,838	19,050	22,450	26,441	30,088
Long-term debt	425	1,000	870	850	1,461	1,614	1,583	1,730	1,539	5,379	7,511
Stockholders' equity	1,052	2,179	3,728	3,724	4,664	4,543	4,828	5,129	5,547	5,667	6,116
R&D expenses	96	226	511	541	529	555	597	650	722	794	809
Employees (millions)	66	100	112	103	108	111	113	112	112	113	111
Earnings/Share (\$)	2.85	4.35	6.25	4.06	4.5	3.26	3.42	4.48	5.3	3.49	6.56
Dividend/Share (\$)	0.80	1.10	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Document processing revenues as share of total	^a	^a	98%	98%	79%	76%	76%	73%	72%	71%	70%
Operating income/Revenue	40%	33%	25%	20%	14%	14%	13%	10%	9%	13%	12%
Operating income/Assets	35	30	27	22	10	10	9	7	6	8	7
Operating income/Equity	75	68	56	44	31	34	31	26	25	38	33
Net income/Revenue	10.9%	8.1%	7.3%	5.3%	4.5%	2.6%	4.0%	3.5%	3.8%	2.4%	4.0%
Net income/Assets	9.5	7.4	7.8	5.5	3.3	1.9	2.8	2.4	2.6	1.5	2.3
Net income/Equity	20.2	16.8	16.0	11.4	10.0	6.4	9.8	9.1	10.4	6.8	11.5
R&D expense/Revenue	4.9%	5.0%	6.2%	6.7%	5.1%	4.9%	5.0%	4.9%	4.8%	4.8%	4.6%
Long-term debt/Assets	19%	20%	11%	11%	10%	11%	9%	9%	7%	20%	25%
Equity/Assets	47	44	49	49	33	30	29	27	25	21	20
Dividends/Earnings	28	25	48	74	67	92	88	67	57	86	46
FUJI PHOTO FILM											
Total revenue							3,136	4,504	5,636	6,833	6,732
Net income							600	801	1,030	1,217	1,210
Dividends							21	30	35	41	36
Net income/Revenue							19%	18%	18%	18%	18%
Dividends/Earnings							3.5%	3.7%	3.4%	3.4%	3.0%

Source: Company annual reports

^aPractically 100%

Exhibit 6 Global Configuration of Xerox Group and Canon in 1989

	UNITED STATES	JAPAN	WESTERN EUROPE	OTHER
Share of world GNP	26%	14%	21% (4 largest countries)	39%
Share of world PPC market (units)	33%	20%	34%	14%

XEROX GROUP

	UNITED STATES	JAPAN	EUROPE	AMERICAS
Revenues	\$6.6 billion	\$3.5 billion	\$4.0 billion	\$1.7 billion
Employees	54,000	19,600	29,000	16,000
Production				
PPC	149,000	180,000	176,400	39,100
Printers	15,000	60,000	15,700	--
Systems	8,000	18,000	1,900	--
Faxes	--	95,000	--	--
% of Market (units)				
PPCs	15%	22%	12%	
R&D centers	2	1	1	1
Alliances	--	Fuji Photo Film	Rank Organization	

CANON

	NORTH AMERICA	JAPAN	EUROPE	OTHER
Revenues	\$2.9 billion	\$2.9 billion	\$2.9 billion	
Employees	4,500	27,500	6,500	
Production:				
PPC	60,000	700,000	370,000	
Other	Laser printers and engines	Cameras, printers		Cameras in China
% of market (units)				
PPCs	23%	26%	23%	
Laserprinting	70			
Color PPCs	50			
R&D centers	0	1	0	
Alliances	HP (\$1B OEM) Kodak, NeXT	-	Olivetti	

Source: Xerox and industry sources

Exhibit 7 Key Financial Data for Fuji Xerox (in millions of US\$) (at yearly average exchange rates)

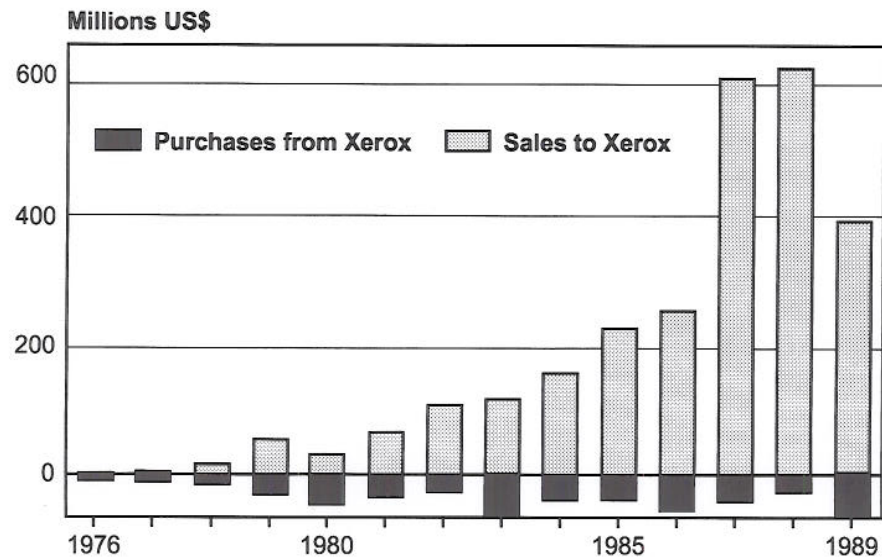
	1971	1976	1981	1982	1983	1984	1985	1986	1987	1988	1989
Revenues	107	307	872	962	1,111	1,282	1,456	2,303	2,955	3,570	3,554
Operating expenses	79	259	754	813	970	1,125	1,304	2,093	2,673	3,197	3,180
R&D	--	13	49	47	84	109	117	151	194	242	292
S,G, and A	38	119	308	333	399	443	507	801	1,041	1,296	1,324
Operating income	27	47	117	150	141	157	152	210	282	373	374
Net income	10	17	46	50	56	61	59	71	106	173	162
Total assets	176	405	897	931	1,046	1,199	1,276	1,883	2,457	3,186	3,093
Total equity	49	121	324	325	388	440	487	744	959	1,237	1,285
Retained earnings	33	84	270	277	338	390	439	680	885	1,154	1,131
Depreciation and amortization	16	63	131	113	130	155	153	218	266	271	278
Capital expenditure	65	64	196	178	230	217	244	296	284	297	512
Employees (thousands)	4.9	7.7	9.8	11.3	12.6	13.9	15.1	16.5	17.2	18.0	19.6
Dividends paid out	1	7	9	8	8	8	8	12	14	18	30
FINANCIAL RATIOS											
Operating income/Revenues	25%	15%	13%	16%	13%	12%	10%	9%	10%	10%	11%
Operating income/Assets	15	12	13	16	13	13	12	11	11	12	12
Net income/Revenues	9.1%	5.6%	5.3%	5.2%	9.1%	4.8%	4.1%	3.1%	3.6%	4.9%	4.5%
Net income/Assets	5.5	4.3	5.1	5.3	5.4	5.1	4.6	3.7	4.3	5.4	5.2
Net income/Equity	19.9	14.3	14.2	15.3	14.6	13.8	12.2	9.5	11.1	14.0	12.6
R&D expense/Revenues	--	4.4%	5.6%	4.9%	7.6%	8.5%	8.0%	6.5%	6.6%	6.8%	8.2%
Capital expenditure/Revenues	61.2%	20.9%	22.5%	18.5%	20.7%	16.9%	16.8%	12.9%	9.6%	8.3%	14.4%
Total equity/Assets	28%	30%	36%	35%	37%	37%	38%	40%	39%	39%	42%
Dividends paid/Total equity	1.6%	6%	3%	2%	2%	2%	2%	2%	1%	1%	2%
Dividends/Earnings	8.2%	41%	20%	16%	14%	13%	14%	17%	13%	10%	19%
Average exchange rate (yen per US\$)	348	297	221	249	238	238	239	169	145	128	138

Source: Fuji Xerox annual reports; exchange rate from the IMF

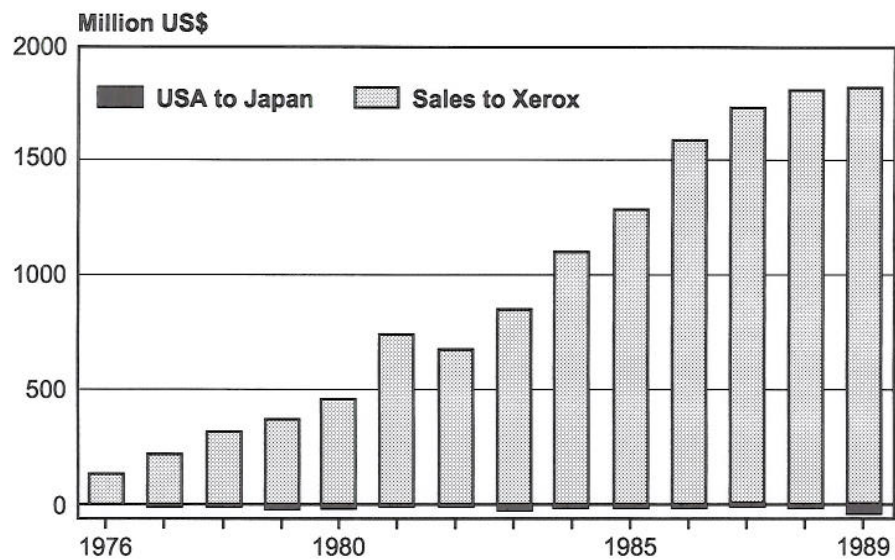
Note: FY ending October 20

Exhibit 8 Intra-Firm and Bilateral Trade in Copiers

Fuji Xerox Trade with Xerox Group



Japan-US Trade in Copiers



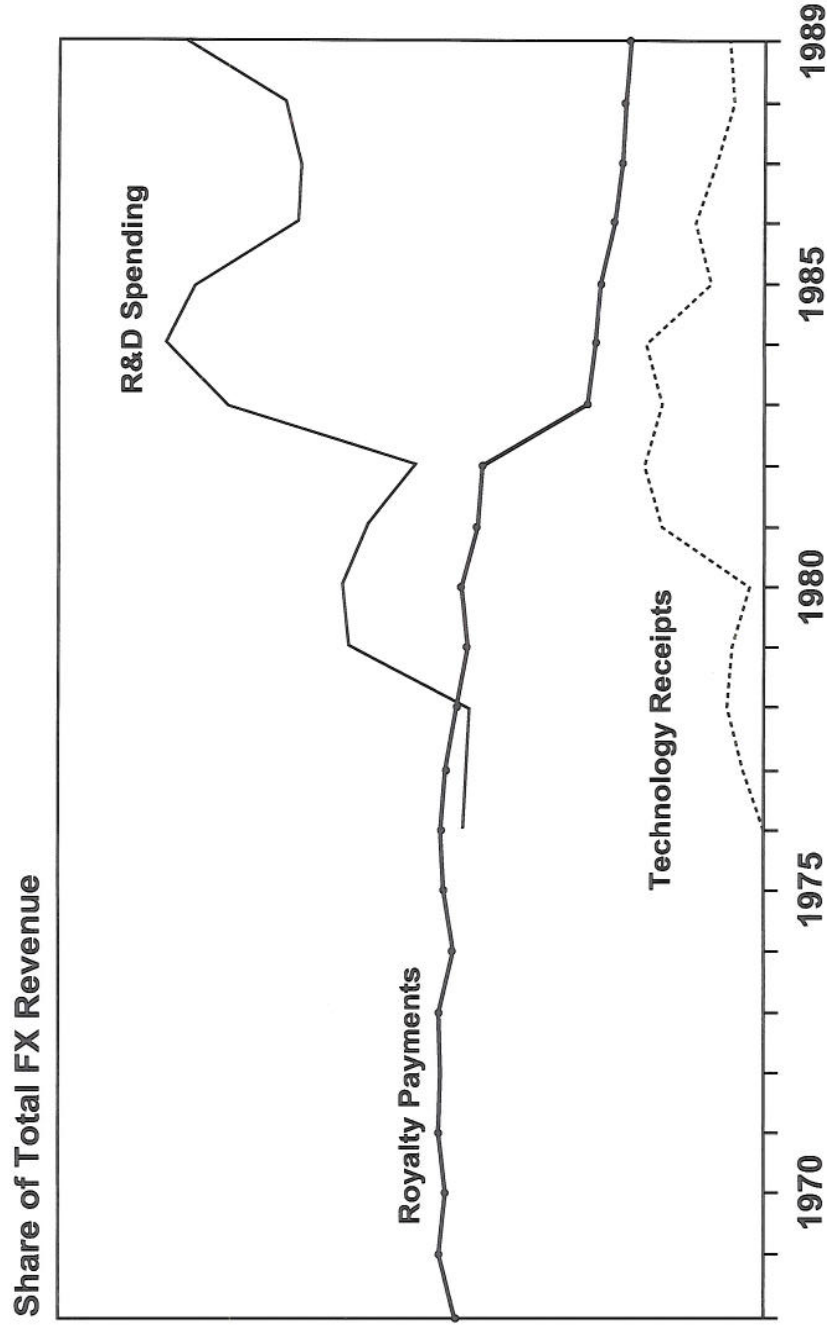
Source: Fuji Xerox annual report and United Nations, *SITC Trade Data Base*

Notes: Top: Includes finished machines, parts, and knock-down kits.

Bottom: Includes copiers (SITC 75182) and copier parts and accessories (SITC 75919)

Exhibit 9 Fuji Xerox Technology Spending and Receipts, 1968-1989

FX Technology Spending and Receipts

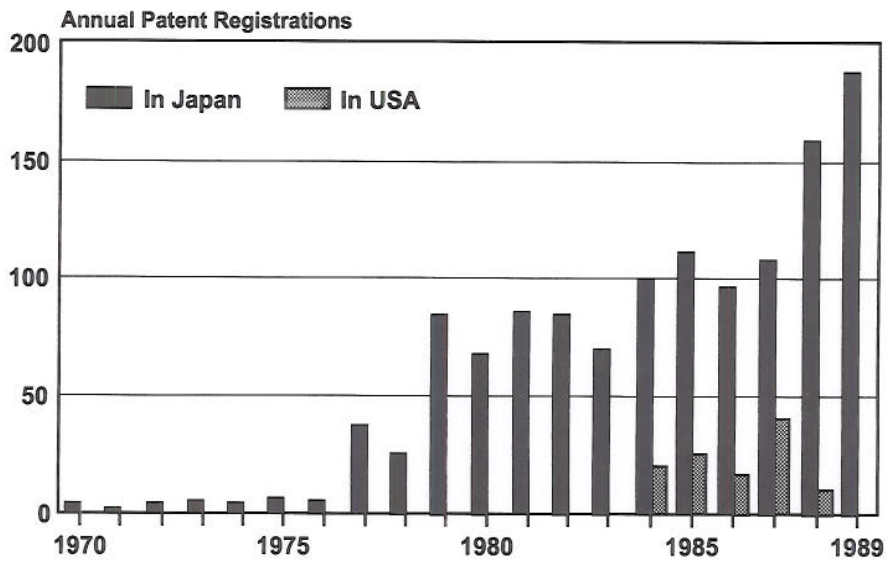


Source: Fuji Xerox annual reports

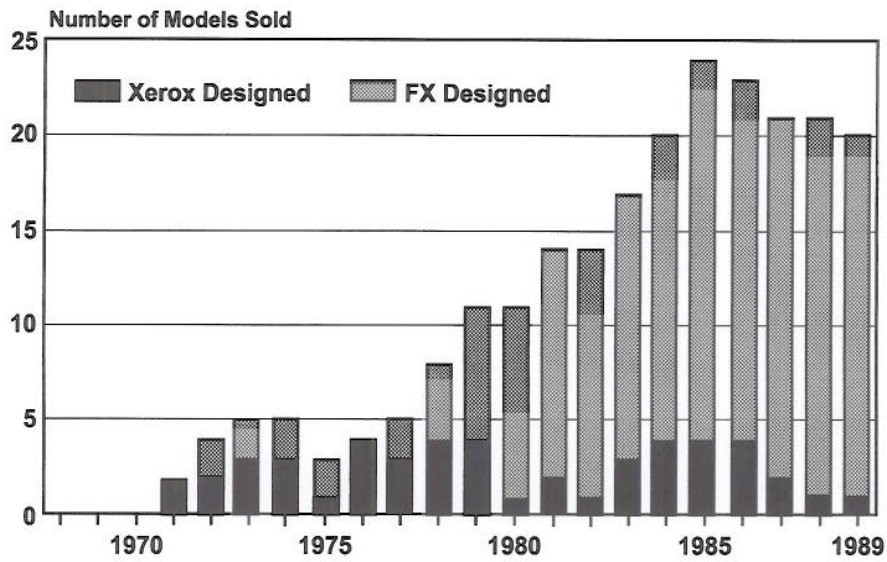
Note: Technology receipts represent reimbursement to Fuji Xerox for special design and customization work on machines sold by XC and RX.

Exhibit 10 Growth of Fuji Xerox's Technical Capabilities 1970-1989

Patents Granted to Fuji Xerox



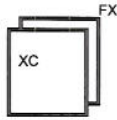
Design Source of Fuji Xerox Copiers



Source: Fuji Xerox

Notes: Top: Utility models included in Japan.

Bottom: Based on product introductions assuming that every product has a commercial life of four years.

Exhibit 11 Relationship Options Identified by Codestiny Task Force**MARKETING****A. Independent and overlapping**

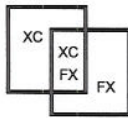
Act as two separate companies serving the world market, with some coordination on business direction and strategy. No geographic constraints.

B. Independent and separate

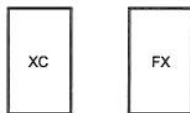
Concentrate efforts on licensed territories for core products, with multinational business as required.

C. Separate with exceptions

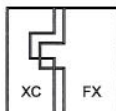
Same as B, but with joint or overlapping activities across territorial boundaries on case by case basis.

D. Coordinated global product mandates

Worldwide and exclusive responsibility for products or product ranges manufactured under special licenses.

RESEARCH**A. Independent**

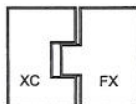
Each pursues own interest and becomes self-sufficient

B. Coordinated

Coordinated group research programs of XC and FX, with both self-sufficiency and overlap

C. Joint

Single research organization without overlap

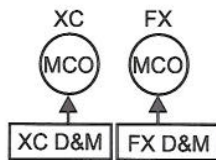
D. Complementary

Separate organizations operating on exclusive projects

Exhibit 11 (continued)

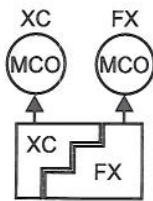
DEVELOPMENT AND MANUFACTURING

A. Independent



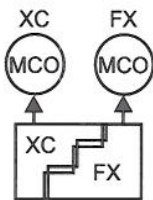
Each development and manufacturing (D&M) organization supplies its own marketing organization (MCO)

B. Complementary without overlap



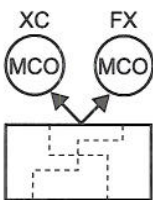
Assign development roles to each organization, with no overlap allowed in development projects

C. Complementary with overlap



Same as B, but with overlap in development projects

D. Joint



Single development and manufacturing organization with individual projects targeted to needs of separate marketing organizations

Source: Compiled from Xerox documents