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IBM's Decade of Transformation: Turnaround to Growth

This is my last annual letter to you. By the time you read this, Sam Palmisano will be our new chief executive officer, the eighth in IBM's history. He will be responsible for shaping our strategic direction as well as leading our operations. . . . I want to use this occasion to offer my perspective on what lies ahead for our industry. To many observers today, its future is unclear, following perhaps the worst year in its history. A lot of people chalk that up to the recession and the "dot-com bubble." They seem to believe that when the economies of the world recover, life in the information technology industry will get back to normal. In my view, nothing could be further from the truth.

Lou Gerstner, IBM Annual Report, 2001

In 1990, IBM was the second-most-profitable company in the world, with net income of $6 billion on revenues of $69 billion, and it was completing a transformation designed to position it for success in the next decade. For the world leader in an industry that expected to keep growing spectacularly, the future looked promising. But all was not well within IBM, and its senior executives realized it. "In 1990, we were feeling pretty good because things seemed to be getting better," one executive remarked. "But we weren't feeling great because we knew there were deep structural problems." Those structural problems revealed themselves sooner than anyone expected and more terribly than anyone feared. Beginning in the first quarter of 1991, IBM began posting substantial losses. Between 1991 and 1993, IBM lost a staggering $16 billion. In April 1992, John Akers, IBM CEO from 1985 to 1993, vented his frustrations during a company training program. His comment, "People don't realize how much trouble we're in," made its way from company bulletin boards to the press, shaking employee and investor confidence.

In April 1993, Gerstner took charge. While many wondered how an executive with no technology background could rescue IBM, insiders knew that Gerstner was brought in not to rescue the company but to break it up for sale. In no time, however, Gerstner learned from customers, analysts, and employees that IBM's value was not in its pieces. Reversing direction, he rallied support for saving IBM.

By 1995, the company was back on solid financial footing. Catalyzed by the Internet boom and the massive technology spending needed to ready businesses for the new millennium, IBM began growing again—but at a slower rate than the information technology (IT) industry as a whole. While the press hailed the turnaround, executives inside IBM knew that the company had not yet found what they had begun to call "The Next Big Thing."

Professors Lynda M. Applegate and Robert Austin and Research Associate Elizabeth Collins prepared this case. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

In March 2002, Gerstner passed the reins of power to Sam Palmisano, a 31-year company veteran, to complete the transformation. Palmisano and the senior executive team were committed to returning the company to greatness. "[Our problems in the late 1980s and early 1990s] were our own fault," Nick Donofrio, senior vice president, Technology and Manufacturing, explained. "We are driven by a passion that says: 'Never again.'"[1] IBM visionary, Irving Wladawsky-Berger was reminded of the 1950s, when a "series of technology asteroids" had created seismic shifts in the computer industry, opening the way for the IBM System/360 to become the dominant design for the next 40 years. The launch of the S/360 catalyzed a period of IT-enabled business innovation that created new industries even as it transformed established industries and the organizations that competed with them. During that period IBM was viewed as the "greatest company in the world," Palmisano explained. Palmisano, Wladawsky-Berger, and the executive team at IBM believed that the Internet and associated network technologies had catalyzed a period of technological revolution that would usher in a new era of IT-enabled business innovation that would be even more profound. IBM, they reasoned, was positioned to lead this revolution. "Before they retire, people want to remember that old feeling."[2] A *Fortune* article commented on what would be required:

> The criteria for genuine greatness are daunting. "What is a great company?" asks management writer Jim Collins. "No. 1 is performance. Not just relative to your past but such that an investment in your company is substantially superior to an investment in the general market. And, no discounts for being in a tough industry. Second you need a unique impact. Are you doing something of such excellence that if your company went away it would leave an unfillable hole?" Collins says that any company that can stage a rebound like IBM's in the past decade is surely capable of meeting his tests. "But will they?" he asks. "That's up to them."[3]

Company Background

IBM made a big bet on the 360 series [of mainframe computers] in the 1960s and by the end of it, people were talking about "IBM and the seven dwarfs." If they get this right, we could have the same thing all over again.

Charles O'Reilly, Professor, Stanford Business School, 2003[4]

IBM was founded in 1911 through the merger of three companies that dated to 1890. Three years later, Thomas J. Watson joined the company and began instituting many of the principles and practices for which IBM would become known: dark-suited salespeople, a strong culture of corporate pride and loyalty, implied lifetime employment, and a work ethic expressed in the slogan "THINK." Watson led the company through almost 40 years of success. At the threshold of the computer era in 1952, he turned leadership over to his son, Thomas Watson, Jr.

Under Watson Jr., IBM became the world's dominant player in the growing IT industry. In a bold move, Watson Jr. invested $5 billion to develop the System/360 computer, the first family of products based on an integrated semiconductor chip and offering interchangeability of components. The System/360 was the "biggest privately financed commercial project ever."[5] This radical departure from the incremental innovation that characterized early vacuum tube computers transformed the industry and set the dominant design for decades to come. In the same time period, the company produced a series of related IT innovations, including one of the first English-like computer languages (FORTRAN), the hard disk, the floppy disk, the IBM supermarket checkout station, and an early version of the automatic teller machine. So dominant was IBM by the late 1960s that it became the target of an unsuccessful 13-year-long antitrust action by the U.S. Justice Department. (See **Exhibit 1** for a timeline of the company.)

With its on-time launch in 1981, the IBM PC became the most successful technology introduction of its time; its sales of 241,683 units *in a single month* exceeded the five-year forecast. While successful, however, the PC was always considered a "stepchild" of the real money-making machine—the mainframe. Rather than push low-margin PCs through IBM's traditional field sales force, IBM for the first time marketed and sold it through third-party retailers, distributors, and value-added resellers (VARs).

By the mid-1980s, IBM's products were universally regarded as sound solutions to a range of business problems, as was apparent from the oft-repeated dictum that "nobody ever got fired for buying IBM." The company was also known as *the* best place to work. Sitting astride one of the most exciting and imagination inspiring of industries, IBM attained the status of a cultural icon when Stanley Kubrick's acclaimed 1968 film *2001: A Space Odyssey* (based on the novel of the same name by Arthur C. Clarke) paid subtle homage to IBM by calling one of the main characters, a super intelligent computer, HAL 2000. H-A-L was said to be derived from I-B-M (take each letter of "IBM" and back up one position in the alphabet to get "HAL").

Asleep at the Switch

From January to March everything was fine. And I remember the day the finance guys came in and said, "We're going to lose money this quarter." I didn't think we'd ever lose money in the history of the company. Worse than that, they said we might lose money for a whole year—the demand and gross margins were sliding that fast in front of us.

Bill Etherington, former General Manager, IBM Canada, 1995[6]

In 1991, the company's earnings dropped to negative $2.8 billion—a plummet of 146%. As revenues continued to slide by more than 60% for each of the next two years, the "most admired" company in the world was tagged a "dinosaur" and a "has-been." (See **Exhibit 2** for company financials.) Critics recited a litany of problems: the company was blinded by hubris, out of touch with its customers, and distracted by internal turf battles. "The money tree stopped growing," explained Donofrio.

Early signs of financial trouble had appeared in 1984 as returns on sales, assets, and equity began to decline. That weakening was, in part, the aftermath of converting a leasing-oriented business for mainframes into a sales-oriented business. John M. Thompson, former vice chairman, explained:

> It had a huge effect on revenue because we not only recorded sales from the new shipments, but we could also book one-time gains from selling installed rental machines that had been mostly written off the balance sheet. Once you sold a mainframe, the maintenance that had previously been included in the monthly lease charge had to be purchased, so we created a service and support business that increased revenue as well. . . . It was like "eating your own children," and we did it for about eight years. The profit umbrella it created paid for many of the inefficiencies we built up over the years.[7]

During this time, IBM was, as Donofrio put it, "very much in denial around client/server and networked computing."[8] Among IBM's customers, the need to interconnect mainframe, midrange, and increasingly mobile personal computers with distributed data sources and applications led to fewer purchases of mainframes, the source of almost half of IBM's revenues during the mid to late 1980s and 70% to 80% of its profits.

Even when IBM product developers resolved to combat the threat from emerging technologies and competitors, they often got it wrong. The 9370 platform, designed as a "VAX killer,"[9] was a case in point, as Etherington noted: "It was a mainframe-based thought in a mid-range market. We used

mainframe thinking, in terms of pricing and cost structures, and tried to launch it in the middle market—and it bombed."[10] That same mainframe thinking also blinded IBM to the much faster evolutionary path of the PC. In addition, IBM's marketing efforts for PCs missed the mark. "Just about every vendor [did] a better job of marketing PCs than IBM [did]," said the CEO of one IBM customer. "No one ever looked at the IBM PC as being inferior, but IBM [did] nothing to sell it. Meanwhile, in the early '90s, Compaq stole IBM's PC market with the right price and the right message. Now it's Dell. IBM [was] a sleeping giant losing its golden egg."[11]

Turf battles between autonomous divisions often absorbed more energy than marketplace battles. According to Fran O'Sullivan, general manager of IBM's Personal Computing Division: "At first, the PC group wanted nothing to do with the rest of IBM. We were the mavericks. We saw them as outdated and irrelevant. Then as our business matured, we got into trouble. We couldn't leverage the sales and global services strengths of the company. We came hat in hand for help, but they viewed us as if our ten minutes of fame were up." [12]

While revenues softened, fixed costs burgeoned. Parts of the company were still operating in growth mode. New buildings were being constructed. Warranty costs reached record levels, and customers became more vocal about quality problems. At the heart of the company's problems were its evolved product complexity and the organizational silos that had developed to manage it. (See **Exhibit 3** for IBM organization charts in 1993 and 1995.) IBM had 20 separate business units, which collectively sold 5,000 hardware products and 20,000 software products. There were different designs for components that served exactly the same purpose in different products. Different business processes were used in different parts of the company for accomplishing the same thing. Where commonality did exist in products or processes, it was not fully exploited. Most telling was IBM's poor performance in the area in which it should have been most expert—internal IT management. The company had 125 separate data centers worldwide and 128 CIOs. There were 31 private and separate networks and literally hundreds of different configurations of PC installations. Data processing costs were a dramatic three times the industry average.

Executives were isolated from the growing problems by deep levels of hierarchy, a heavy reliance on an army of corporate staff, and a consensus-driven decision-making culture. Decisions "made by committee" took an exceedingly long time and a "nonconcur" from any one member could overrule general agreement on a course of action. Executives had large staffs and little direct involvement in writing their own reports. They delivered presentations prepared by staff members during numerous "pre-meetings" in which the staff worked to align positions and eliminate surprises. Armies of staff members attended executive meetings, lingering in hallways or—in the case of very senior staff—seated close behind their executive in the meeting room, armed with volumes of backup material. Prepared presentations dominated even informal meetings, and most executives had projectors built into their office furniture.

In 1991, Akers began cost cutting. Employee perks such as fitness center memberships were cut back. Some shared services within IBM were subjected to external competition. A $3.7 billion restructuring charge was posted, and a series of personnel reductions began as senior executives offered voluntary retirement packages to their personnel, with the threat of involuntary retirements on less generous terms if targets were not met. The targets were not met, and the first round of forced layoffs shook IBM's culture to the core. While the jobs of some were saved by the creation in May 1991 of the Integrated Systems Solution Corporation (ISSC), which later became IBM Global Services (IGS), layoffs accelerated in 1992. By early 1993, the total number of eliminated jobs exceeded 40,000. Donofrio, whose mainframe business was in freefall, recalled the anguish he felt during this time:

> We had to implement large-scale layoffs affecting the majority of employees at several mid-Hudson Valley sites. The mid-Hudson Valley was where I grew up. I had to lay off friends and

former classmates, people I considered family. Many lives were affected by these difficult but necessary actions. It was a very tough, emotional time. Nothing I've experienced has been worse than that.

When late 1992 forecasts suggested continued losses, the board began looking for a replacement to preside over the breakup and sale of the once-proud company. High-profile candidates such as Jack Welch (General Electric), Larry Bossidy (Allied Signal), George Fisher (Motorola), and John Young (Hewlett-Packard) declined to be considered. The board's choice, Louis V. Gerstner, had been chairman and CEO of RJR Nabisco for four years, a top executive at American Express for 11 years, and a consultant with McKinsey & Co. He was the first outsider CEO in the history of the company.

Leading through Crisis

I start with the view that the customer drives everything the enterprise does. A lot of people say, "We put customers first," but it's a slogan for many companies. In my view, it is absolutely the thing you live by every day in a successful enterprise.

Lou Gerstner[13]

After Gerstner took charge in April 1993, IBM's senior executives, employees, and customers quickly realized that "putting the customer first" was no mere slogan for Gerstner. The new CEO's involvement in a sales meeting in the spring of 1993 put executives on notice. In fact, IBM executives almost failed to invite Gerstner to the meeting, not wanting to inconvenience him when he was busy settling into his new position. When the invitation finally went out, it emphasized how little time Gerstner would need to spend at the event. Etherington explained Gerstner's reaction:

> He asked, "Who's there?" [We answered,] "About 300 CIOs in North America. Big banks, General Motors, that kind of thing." "Well," he said, "shouldn't I stay and have lunch with them?" "No, execs don't stay," we said. He said, "I don't understand. These are your best customers." So he said, and I remember this: "I'm going to the whole conference. I'll be there the first night. I'll have dinner with them. I'll have breakfast with them. I'll have lunch with them. And any IBM executive who wants to attend must stay for the whole two days." We were all erasing our calendars, saying, "I was always going to be there two days." At the meeting he opened a dialogue with the customers and he started to single IBM executives out. "This executive will fix that and get back to you this afternoon." It was unheard of—"The CEO's siding with the customers!" That was like a rocket through the company.[14]

During his first few months on the job, Gerstner logged thousands of miles visiting customers, analysts, and industry experts. He summarized the message he heard from customers in this way: "They said repeatedly, 'We don't need one more disk drive company, we don't need one more database company or one more PC company. The one thing that you guys do that no one else can do is help us integrate and create solutions.' They also saw the global nature of the company. . . . 'I use you guys all over the world.'"[15]

By late 1993, Gerstner realized that rather than break up the company, he could turn it around by going to market as "one IBM." To prevent customers from leaving in droves before he completed the turnaround, Gerstner called on each senior executive to go out to a group of customers and "bear-hug" them. He made the executives personally responsible for their assigned customer accounts and accountable for any problems that arose. At the same time, he asked each of the executives to write two papers, one on the executive's business and the other on key issues and recommendations for solving problems and pursuing opportunities. These papers became the basis for day-long discussions with Gerstner—without PowerPoint slides or support staff.

To prevent "brain drain" to competitors, Gerstner sought to "bear-hug" key employees as well; for example, he went to the board to change key employees' options, enabling them to exchange those that were "underwater" for a smaller number that were not. Gerstner pointedly did not include the 23 most senior executives in the option repricing, sending a message to investors (and others) regarding his attitude about pay for performance. As one executive put it, "Lou is plenty collegial, but it's clear that has nothing to do with the business."[16]

After he decided to fight to save the company, Gerstner hired Jerry York, a former Chrysler CFO. Known for wearing Harley-Davidson tee shirts with a cigarette pack rolled up in a sleeve, York, whom employees called a "pit bull," was charged with getting costs under control. York launched a benchmarking study to determine how IBM's costs in each of its businesses compared with those of competitors. The results were daunting: the ratio of expense to revenue (42% in 1993) needed to be reduced by 9%. Overall, the company was too expensive by at least $7 billion. Opting for the single swing of the scythe rather than the slow and traumatic reductions of the previous few years, York and Gerstner approved layoffs of over 75,000 employees in early 1993. Business unit managers were charged with "fixing, closing, or selling" underperforming parts of the business.

The PC division exemplified the changes made within business units. In January 1994, Gerstner hired Rick Thoman, a former colleague from Nabisco, American Express, and McKinsey, to head the troubled PC division. Thoman killed nearly all of the PC company brands, saving only the eventually very successful ThinkPad brand for the laptop computer business. "We would still target individuals," O'Sullivan explained, "but we were after individuals who wanted a high-quality, reliable productivity tool, not the best gaming machine." Recognizing that PC manufacturing was not a core competency and that IBM's dedicated PC factories came with high fixed costs, the company outsourced PC manufacturing. Finally, by capitalizing on the successful ThinkPad brand and moving all products under that brand, the PC organization was able to move forward with one marketing team, one development team, shared synergies, and an executive team slimmed by 25%.

IBM's internal IT organization contributed to the $7 billion cost reduction. Between 1994 and 1997, the cost of operating and running IT operations was cut in half, generating over $2 billion in cost savings. Key savings came from reducing the number of data centers from 155 to 3 regional "megacenters" fed by 11 "server farms," and a 60% reduction in headcount. IT leadership was centralized; 128 CIOs were reduced to 1. Networks were converted to one common protocol (TCP/IP).[17] The systems development process was also reengineered; internal applications decreased from 16,000 to 5,200, and component reuse increased by 34%.

By the fourth quarter of 1993, IBM posted a small profit of $382 million. A similarly sized profit followed in the first quarter of 1994 ($392 million). By the third quarter of 1993, the company's stock price had doubled as investors voted with confidence in the decision to fix—rather than break up and sell—IBM. By year-end 1994, profits had risen to $5 billion on revenues of $64 billion.

Reorganizing as One IBM

Gerstner saw the SBU [strategic business unit] as fatally flawed for IBM. SBUs had been created around products. We're not GE with SBUs around different products and customers. We need to integrate while preserving our strong product focus and leadership. How do you do that?

Bruce Harreld[18]

"One IBM" became the impetus for reorganizing the company (refer back to **Exhibit 3** for a comparison of the IBM organization chart in 1993 and in 1995). Gerstner pulled divisions into larger business groups and formed the Corporate Executive Committee (CEC), about a dozen senior

executives who met every two weeks to focus on corporate strategy and the turnaround. Another group, the Worldwide Management Council (WMC), composed of the top 35 people including geographic leaders and division presidents, met monthly to define and execute global tactical strategy and operations.

The sales organization, which had been organized by geography and product, was reorganized into global sales teams. In response to numerous customer complaints, a customer relationship manager and a dedicated sales and service team were appointed for each key customer account. These teams were grouped within larger vertical industry teams, and product specialists were assigned to each. The product specialists served as boundary spanners, moving back and forth between focused product groups and key account teams, taking product knowledge to the field and customer input back to the product groups. Product specialists reported to the product organization, but incentives rewarded increased sales of their products through industry sales teams.

Changing Culture

In early 1994, Gerstner, writing at his kitchen table, set out eight operating principles for doing business as one company. He made no attempt to incorporate the "Basic Beliefs," developed by Watson. (See **Exhibit 4** for Gerstner's eight principles and a comparison to IBM's original Basic Beliefs and the core values developed by IBM Employees during a "Values Jam" in 2003.) The break with the past was apparent to IBMers. As Gerstner traveled to different company sites, he met with employees to explain the principles and how to put them into action. He wrote frequent "Dear Colleague" notes directly to the employees when he wanted to convey important information. As one executive noted, "We had no idea when he was going to send them; we got them when everybody else got them." There was inevitable resistance, as Harreld described:

> At the top of the organization was a leadership team that really wanted to speed up the pace of change. The customer-facing parts of the organization were ready for change and agreed with the direction the company was taking. But there was a group of people in the middle who didn't want to have anything to do with it. They just wanted it to go away. They wanted it to be the way it used to always be.[19]

One group of managers—those who ran IBM's country organizations—found the move to "One IBM" especially difficult. They believed global managers could not be relied upon to make the right choices for local markets and that initiatives and instructions from IBM corporate needed to be "customized" for particular countries. The differences came to a head when Gerstner found out that his notes to employees were being rewritten by country managers to "better fit their environment." The senior executive responsible for the country managers was fired, and many country managers resigned. Those who stayed were rapidly elevated to key positions. Despite pockets of resistance, Gerstner was impressed by employees' capacity to absorb change:

> [We had to change] the view that IBM was a group of fiefdoms. We needed to have a sense that we were going to operate as a team, as a global entity, and that was totally foreign to the culture. It took massive change to get people to do that. Compensation changes, organization changes, lots of things. To me it's a credit to the inherent strength of the people who were in IBM that so many of them were able to make the transition. It's one of the most remarkable things that happened.[20]

Reengineering Global Functions and Processes

As cost cutting got underway, Gerstner also focused the organization on becoming "One IBM" in terms of how the company operated. In late 2003, Gerstner assigned each member of the Corporate

Executive Committee (CEC) responsibility for a functional reengineering project (e.g., procurement, product development, sales). He set two priorities for these projects: (1) get cost out as quickly as possible; and (2) "clean-sheet" the process and redesign it for global use. The redesigned processes would form the foundation for sustained cost competitiveness and best-in-class operations as the company embarked on the growth phase of its transformation. Unwieldy executive governance structures and processes were removed, and Gerstner made it emphatically clear that senior executives were *unambiguously accountable* for making sizable and sustainable improvements in their assigned processes.

Initial efforts were targeted at core processes such as procurement, manufacturing, new-product development, information technology, research, human resource management, and finance. Donofrio, the CEC executive responsible for reengineering new-product development and manufacturing, explained:

> The first step in our financial, cultural, and business transformation was to drive common processes across all of our businesses. In our hardware businesses, we looked across all of our projects and found that our time to market was much longer than that of our competitors; in fact, in over 30% of our projects, we were more than twice as slow in getting our products to market and our costs were over twice as high. To address these problems, we developed a standardized "event-driven" product development process that we applied to all of our new-product development activities across the corporation. The process specified a standard approach to product development and a staged investment model that was linked to performance within and across stages. As a result of the new process and standards, we cut development expense by over 50% and decreased new-product development time by 67%. Even as new-product quality improved, total costs per year were reduced by over $1.6 billion.[21]

Similar reengineering activities were also taking place in other portions of the supply chain. Kathy Colucci, who in the early 2000s was vice president of Finance, Integrated Supply Chain, explained how procurement, logistics, and fulfillment processes were standardized and streamlined to enable IBM to go to market as "One IBM":

> In 1995, each of our key brands handled its own procurement, logistics, and fulfillment activities. As a result, we had silos of these activities all over the company. During 1994 and 1995, we began to reengineer and standardize these activities. If there was someone on the outside that could perform the activity better, faster, and cheaper than us, we outsourced the physical activity and kept the strategy, planning, and management. For example, in logistics, we now handle all of the planning and management centrally, but we outsource all of the warehousing and distribution to a third-party partner. In addition, given our decision to move away from competing with enterprise application software vendors [explained later in the case], we decided to partner with SAP, PeopleSoft, and Siebel and use the same software internally as our customers used.[22]

Within one year of reengineering procurement processes, costs were down 20% and the time needed to complete and confirm supply orders had decreased from an average of 48 hours to 2.5 hours. By 2000, 94% of goods and services, representing $4.3 billion, were procured online from 24,000 worldwide suppliers at a cost savings of over $370 million annually. And, even as year-over-year growth in procurement volume increased by 60% between 1999 and 2000, no new staff were added. (See **Appendix** for a summary of benefits due to cost-cutting and reengineering efforts.)

Waking Up to the Internet

By the end of 1998, about a quarter of [IBM's] $82 billion in revenues was Net related. How did a company that had lagged behind every computer trend since the mainframe catch the Internet wave?

Gary Hamel, 2001[23]

As IBM's cost structure improved, Gerstner and the senior team sought a unifying strategic vision to serve as a platform to reignite growth and industry leadership. As part of an early effort to rebuild the IBM brand around the "One IBM" theme, in June 1993, Gerstner hired Abby Kohnstamm as senior vice president of Marketing. One of the first programs that she oversaw was IBM's sponsorship of the 1994 Winter Olympics in Lillehammer, Norway.[24] Intended to demonstrate IBM's renewed technology leadership, IBM's Olympic website also drew internal attention to the fact that the Internet promised much more than marketing. A grassroots Internet movement within the company was soon channeled into a corporate strategy.

In November 1995 Gerstner announced "e-business" as IBM's growth strategy. His message, which in the early days of the Internet was considered revolutionary, was that the Internet was not just about browsing the Web and marketing to consumers. The killer application, Gerstner argued, would be business-to-business e-commerce in which the Internet and its associated technologies would become embedded within the way companies conduct business.

While the decision to focus IBM's future strategy on the Internet went contrary to conventional industry wisdom at the time, "e-business" was a rallying cry that resonated with IBMers. Gerstner commented:

> The concept of e-business galvanized our workforce and created a coherent context for our hundreds of products and services. The vast new challenges of networked computing reenergized IBM research and triggered a new golden age of technical achievement for the company. Most important, the investment did what we wanted to do at the outset—reestablish IBM's leadership in the industry.[25]

The e-business strategy triggered a cascade of decisions through the remainder of Gerstner's watch with regard to which products and businesses to exit, what to enhance, and what to acquire. Gerstner made enormous investments in Internet products and services at a time when few executives of major companies had put the words "Internet" and "strategy" together. (See **Exhibit 5** for a summary of key acquisitions and divestitures between 1994 and 2003.)

One implication of this new focus was the increased importance of "middleware," which provided the tools and technology that served as the interconnections—the glue—between disparate and distributed data sources, applications, and computers. The shift from software applications to middleware prompted the major acquisition of Lotus Development Corporation for $3.5 billion in 1995, which provided a collaborative messaging/middleware platform. The $700 million acquisition of Tivoli Systems filled the distributed systems development and management software void.

Another significant implication of the shift to an e-business strategy was the possibility of neutralizing the advantage of any specific operating system, network, software application, or hardware platform by shifting focus from proprietary to open technology. Under this scenario, rather than providing a proprietary industry platform (as it did with the S/360), IBM would provide the integration point. This realization implied that IBM's hardware product organizations needed to become best-in-class or risk obsolescence. More importantly, it freed the company from having to compete in every product category. Instead of funneling resources and energy into competing in categories in which its offerings were weak, IBM could partner with best-in-breed providers to meet

the needs of its customers. Thus IBM, the company most identified with the word "proprietary," turned its back on the past and its face toward "open standards."

The shift to providing the integration glue within an open networked platform also had implications for the importance of IBM's services units. By shifting resources and attention to services, by 2000, IBM Global Services (IGS) had grown to be the world's largest IT consulting and Web services organization, providing 38% of IBM's $88.4 billion revenue, compared with only 16% less than 10 years before.[26]

"Fifty percent of the $1 trillion opportunity [from the Internet] comes from services," Gerstner explained in 2000. "It dwarfs the other categories, and in that business we lead across the world."[27] While vendor independence was sometimes an issue for customers, IBM's technical expertise was also a strong drawing card. Fueled by record growth in the sale of Internet-related services and associated hardware and software, in 2000, IBM reported record sales ($85.1 billion) and profits ($8.1 billion). More importantly, the passion that had come from surviving its "near-death experience" and then riding the wave of what many in the company were beginning to call the "next big thing" captured the imagination and focused the energy of a demoralized workforce looking for a reason to reengage in building for the future.

Organizing for Growth[28]

In September 1999, Lou Gerstner, who was then IBM's chairman and CEO, was working at home on a Sunday. Reading a monthly report, Gerstner found a line buried deep, saying that pressures in the current quarter had forced a business unit to cut costs by discontinuing its efforts in a promising new area. Gerstner, a temperamental type, was incensed. How often did this happen?

Fast Company, 2005[29]

By September 1999, IBM had achieved financial stability with steady revenue growth. But at only 5.7%, this growth was well below the red-hot technology industry average. When Gerstner learned that funding for one of his key new-business initiatives in Life Sciences had been cancelled by line management in order to contain short-term costs, he "blew his stack." As head of corporate strategy, Harreld was given the task of looking into whether other promising new growth businesses were being abandoned. "I found a similar pattern across the board," he said,[30] and then Harreld set about documenting the problem with detailed case studies. While IBM had plenty of great ideas and inventions—in fact, IBM Research was granted more patents each year than any other company in the world—Harreld found that managers had a difficult time launching and growing new businesses that would commercialize these inventions and exploit growth opportunities arising in the marketplace.

Harreld's research showed that the majority of IBM employees focused on selling *current* products, serving *current* customers, and executing *current* operations. In fact, the focus on flawless execution and short-term results had intensified under the ruthless cost cutting necessary to survive during the 1990s. In addition, while common operating processes were enabling improvements in achieving the goal of "One IBM" in its current businesses, the innovation process continued to be focused within the silos of existing lines of business. "If we attempted to start a potential business and it didn't fall within a natural line of business, it was hard to develop," Paul Horn, senior vice president of Research, recalled.[31]

A corporate venture fund that had been established to support internal growth opportunities had also proved problematic. "We called it bowling for dollars," Harreld said, "because managers from [lines of business] tried to fund ideas with loose, back-of-the-envelope business plans."[32] The lack of

experienced entrepreneurial leadership and processes caused most of these new IBM businesses to fail. (See **Exhibit 6** for a summary of the study findings on causes of new-business failure at IBM.)

As part of his research on best practices for commercializing innovation, Harreld came across a book entitled *The Alchemy of Growth,* which advocated dividing a company's portfolio of business initiatives into three "horizons."[33] Horizon 1 (H1) businesses were mature and well established and accounted for the bulk of profits and cash flow; Horizon 2 (H2) businesses were on the rise and experiencing rapid, accelerating growth; and Horizon 3 (H3) businesses were emerging and represented the "seeds of a company's future strategy." Each horizon required different leadership and governance, a different approach to defining and executing strategy, a different way of organizing and managing, different types of people, culture and incentives, and a different approach to financing and risk management. Harreld and his colleagues concluded that IBM's difficulties were largely the result of trying, unsuccessfully, to apply a single approach to organizing and leading—one that was designed for large established businesses—to its high-growth and start-up businesses. **Exhibit 7** extends IBM's "H1, H2, H3" analysis to depict innovation as part of a business lifecycle that unites the breakthrough discoveries from IBM's laboratories and product groups with its emerging opportunities, high growth businesses and mature businesses.

Defining a New Approach to Innovation at IBM

Over the next few months, Harreld worked with the IBM business leaders to categorize IBM's businesses as Mature (H1), High Growth (H2), and Emerging Business Opportunities (H3). While it was fairly straightforward to identify current businesses and categorize them based on historical revenue trends and industry forecasts, executives recognized that, in the turbulent high tech industry, the assumptions behind these forecasts could be wrong and would need to be continuously monitored. This job fell to the Corporate Strategy group.

Even more problematic, however, was the selection of businesses that would be designated as Emerging Business Opportunities (EBOs) and the decision of where in the organization to allocate leadership and authority for these EBOs. On the one hand, many argued that EBOs should represent cross-business initiatives that should be managed at the corporate level under the watchful eye of the Corporate Executive Committee (CEC). But others, like John Thompson—a 34-year veteran of IBM—believed that a fully centralized EBO model would make it tough to transition EBOs back into the divisions once they reached the growth stage and would also make it tough to gain the cooperation of business unit line managers—especially when pursuing opportunities that crossed lines of business. "Just when you need cooperation," he explained, "the white corpuscles from the existing businesses come out to protect their resources and try to kill the new effort."[34] After much debate, the CEC decided that a centralized model would perpetuate the organizational silos that they had been working so hard to break down. Rallying behind the "One IBM" vision and values that had helped pull together the company during crisis, the CEC decided to organize EBOs to ensure corporate guidance and oversight while maintaining business unit line manager authority and accountability. In doing so, IBM sought to build innovation capabilities where they were needed in the divisions, focus business leaders on managing different business horizons, and ensure a smooth transition for successful EBOs into their ultimate business "home." More importantly, when EBOs required cross-business unit cooperation, CEC oversight would shine a spotlight on critical areas of need and would enable IBM's senior executives to work with business unit leaders to solve the organizational problems that made cooperation difficult.

Recognizing that strong corporate leadership would be required to ensure "corporate guidance and oversight," in July 2000, Gerstner promoted Thompson from SVP and Group Executive of the Software Division to vice chairman and "EBO czar." Gerstner also moved the Corporate Strategy

group (led by Harreld) and the Corporate Technology and Manufacturing group (led by Donofrio) to report to Thomson. The appointment of Thompson, a respected strategist and operating executive who deeply understood IBM and its technology, signaled to everyone in the company that Gerstner meant business. Not only had Thompson led many of IBM's core software, hardware, and services businesses, he had also led various cross-business initiatives and was currently responsible for its Life Sciences business—which had been selected as one of the initial EBOs. While Thomson was the only IBM executive devoted full-time to the EBO initiative, both Harreld and Donofrio and their respective units devoted a percentage of their time to ensuring the success of the EBOs.

Initially, seven key business opportunities were designated as EBOs. The criteria for selecting these opportunities included: the need for cross-business cooperation and resources; the maturity of the business plan and strategy (e.g., key market and technology risks appeared manageable and expertise was available to build the first offering and take it to market); the forecasted size of the market; and the potential for generating over $1 billion in three to five years.[35] By 2003, the number of EBOs had grown to 18 and they addressed both new technology products (e.g., grid computing, blade servers, Linux, pervasive computing) and new markets (e.g., life sciences, digital media). (See **Exhibit 8**.)

Under Thompson, the corporate EBO process functioned effectively but relatively informally for its first two years. In addition to "evangelizing" the need for a commitment to innovation and growth and for developing different management processes, the core activity was a monthly review of each EBO. Fashioned on the company's traditional business review process, each EBO leader, accompanied by their division head, met with Thomson, Harreld, and Donofrio to report progress, discuss plans, and solve problems. But unlike traditional IBM reviews, which focused on financial performance versus plan, these sessions were intended to verify and refine business plans and to measure the progress made as the EBO moved through the innovation process. Although efforts were made to identify expenses and revenues for each EBO, most questions during the meeting—and most of an EBO leader's compensation—revolved around clarifying assumptions and risks and assessing progress against key *project-based* milestones. Success against these project-based milestones could include clarifying market demand and willingness to pay by interviewing key customers or reducing technology risk by completing a key phase of the product development process.

With Thompson's retirement in 2002, Harreld and the Corporate Strategy group assumed formal responsibility for the EBO process. Harreld added staff to his group to provide expertise and leadership in project management, marketing, strategy, and analytics, and began to formalize systems and processes. Monthly and quarterly reports to senior management were refined and EBO leader forums for sharing best practices were established. At the same time, Donofrio redefined IBM's product-development process to accommodate the more uncertain and experimental approach required to launch and grow EBOs. By 2003, IBM had developed a new management system that clarified how businesses transitioned from EBO through high growth and maturity.

EBO Progress

In 2002, Harreld promised the board that EBOs would add two points in incremental revenue growth by year-end 2003 and, as 2003 results came in, he kept his promise. Of the original 18 EBOs, Life Sciences and Business Transformation Services had become $1 billion businesses with the latter growing over 30% during 2003, Digital Media grew 60% to $1.7 billion in revenue, Linux grew to over $2 billion in revenue and Pervasive Computing generated more than $2.4 billion in revenues. Three additional EBOs (blade servers, flexible hosting services, and storage software) doubled their revenues. Along the way, new EBOs were being developed—many of them around emerging

markets and, during 2003, China, India, Russia, and Brazil had generated $3 billion in revenue, which represented double-digit annual growth.

As the number of EBOs requiring corporate oversight and guidance grew to 18 and, at one point, topped 25, Corporate Strategy resources became strained. Three EBOs were dropped because early results suggested that the business models were not sustainable. Given that 15 of the EBOs had entered or were entering the high growth phase, Harreld considered whether it was time to transition them into an H2 management system and to integrate them fully into the business divisions. He was concerned, however because some of the EBOs, which were growing revenues, still faced execution issues and still required investment. Harreld was also concerned about the strategy he should employ for restocking the pipeline of EBOs:[36]

> Basically, we're out there exploring all the time, listening, trolling for ideas, trying to find out what the next big thing is. . . . Not every well you drill yields oil. We're going to place a lot of bets and be in a position to capitalize early, or get out early. It was really hard to teach ourselves to focus, but we said, "We've only got so much energy, people, and money. . . ." Believe me, it takes a rare mix of expertise, guts, and discipline to place your bet on only a few things—not everything—and then to make it work and build from there. But that's the only way to grow a new business—one play at a time. Otherwise, you end up chasing everything and wind up with nothing. One thing we have done to help maintain our focus is to work with the top venture capital firms and refer to them promising ideas that don't seem to be in our direct line of sight. Of course, we encourage them to use IBM technology to ensure that we seed our technologies into their products, and we also will serve as advisors or maybe invest a little money in the development.

Palmisano's Challenge

History suggests that a sustained period of growth is about to begin for the $1.4 trillion information technology industry. At the same time, new markets are opening up on its borders. But the rewards will not be shared equally.

Sam Palmisano, 2003[37]

In early 2000, Palmisano believed that IBM's business opportunities were staggering in their scope and scale. IBM's experience in attempting to transform to "One IBM" provided a glimpse of both the opportunities and challenges that IBM's customers faced. It was clear that, while the emerging networked technology platform was a critical catalyst, value creation would demand business innovation on a scale that most enterprises were ill-equipped to handle. Over the past decade, IBM had faced significant challenges head on and had made a commitment to nurturing innovation and growth while also creating the foundation for flawless execution of its established businesses. Executives at IBM believed that these capabilities would keep the company from spinning out of control as it had in the early 1990s. Indeed, as Palmisano took the reins of the company, the dot-com collapse and subsequent economic recession had caused the IT industry's rapid growth to screech to a halt. A *Fortune* article stressed the challenges Palmisano faced:

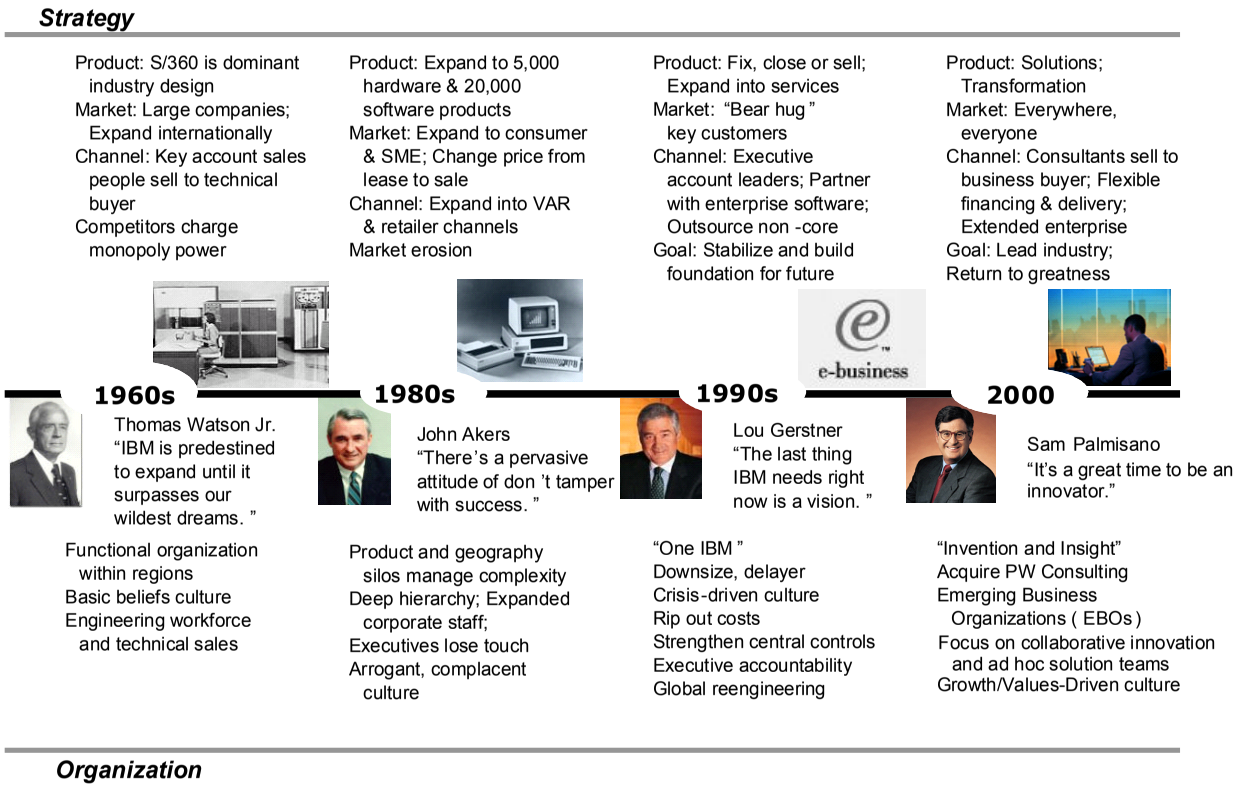
> In early 2000, as Gerstner began handing him the reins by making him president and COO, the dot-com bubble burst. By the time Palmisano became CEO, IBM's revenues were down a whopping $5 billion and still declining. Palmisano found himself steering a technology company in the worst tech downturn in history.[38]

By 2003, however, both revenues and profits, which had declined during 2001 and 2002, bounced back despite continued industry malaise. By year-end 2003, IBM revenues had risen 10% to $89.1 billion (a company record) and net income was up from $3.6 billion in 2002 to $7.6 billion. In addition, IBM had capitalized on the backlash from the accounting industry scandals at Enron, WorldCom, and other firms to purchase PWC Consulting from Price Waterhouse Coopers. PWC consultants had assisted IBM on their path to becoming "One IBM", and it was hoped that the combined business and technology capabilities could assist IBM's customers on their path to transformation. Indeed, integrating PWC Consulting into IBM's Global Services organization had enabled the company to transition their Business Transformation Consulting EBO to High Growth, which helped drive IBM Global Service revenues to $31.9 billion (from $26.8 billion in 2003 and $15 billion in 2002).

As Palmisano considered the opportunities and threats that IBM faced in the decade ahead, he recalled the dark days of the early 1990s, and he was committed to not just define strategic direction for the company but to set a course that would enable IBM to return to its former "greatness." Palmisano summed up his vision:[39]

> Over most of our nearly 100-year history, IBM was consistently a company that outperformed others in our markets and generated superior returns. And that was because we were singularly focused on leading, and most often creating and defining, the high-value spaces in our industry… But it's also apparent that, somewhere along the line, we became more focused on defending our existing leadership position than on creating the next one. We weren't particularly bold or imaginative in getting into new markets or developing new businesses, products and services, even when our strategic analyses indicated that something new was coming. And, just as important, we hesitated to reinvent or get out of businesses that no longer represented high value for either clients or shareholders. In a word, we lost sight of IBM's mission, of what had always set us apart. Well, we've regained our focus now. IBM is an innovator—in every dimension of that word. We know that IBM and IBMers are at their best when they create value that our clients cannot get from anyone else. That means we will provide leading-edge technology, services, expertise and intellectual capital, and will integrate these capabilities for each client to provide them with competitive advantage. We commit to that. We commit to innovating to deliver client success.

Exhibit 1 Timeline



Source: Author, based on IBM company documents and website; images downloaded from IBM website, July 2004.

Note: SME = Small to medium-sized enterprises.

Exhibit 2 IBM Corporation Financial History: Consolidated Statement of Earnings for the Years Ended December 31 (US$ millions)

	1980	1985	1990	1992	1994	1996	1998	2000	2001	2002
Revenue:										
Services	4,425	11,536	11,322	14,987	16,936	22,310	28,916	33,152	34,956	36,360
Hardware	21,788	38,520	43,959	33,755	32,344	36,634	35,419	34,470	30,593	27,456
Software			9,952	11,103	11,346	11,426	11,863	12,598	12,939	13,074
Financing			3,785	4,678	3,425	3,054	2,877	3,465	3,426	3,232
Enterprise investments/other						2,523	2,592	1,404	1,153	1,064
Total Revenue	**26,213**	**50,056**	**69,018**	**64,523**	**64,051**	**75,947**	**81,667**	**85,089**	**83,067**	**81,186**
Cost:										
Services	2,181	4,689	6,617	9,481	11,404	16,270	21,125	24,309	25,355	26,812
Hardware	7,968	14,911	19,401	19,698	21,300	22,888	24,214	24,207	21,231	20,020
Software			3,126	3,924	4,680	2,946	2,260	2,283	2,265	2,043
Financing		1,503	1,579	1,966	1,384	1,481	1,494	1,965	1,693	1,416
Enterprise investments/other						1,823	1,702	747	634	611
Total Cost	**10,149**	**21,103**	**30,723**	**35,069**	**38,768**	**45,408**	**50,795**	**53,511**	**51,178**	**50,902**
Gross Profit	**16,064**	**28,953**	**38,295**	**29,454**	**25,283**	**30,539**	**30,872**	**31,578**	**31,889**	**30,284**
Operating Expenses:										
Selling, general & administrative	10,324	13,000	20,709	19,526	15,916	16,854	16,662	17,393	17,048	18,738
Research, development & engineering		4,723	6,554	6,522	4,363	5,089	5,046	5,084	4,986	4,750
Restructuring charges				11,645						
Interest expense	273	443	1,324	1,360	1,227	716	713	344	234	145
Intellectual property and custom development income								(1,664)	(1,476)	(1,100)
Other (income) and expense	(430)	(832)	(495)	(573)	(1,377)	(707)	(589)	(990)	(353)	(227)
Total Expense and Other Income	**10,167**	**17,334**	**26,434**	**38,440**	**20,129**	**21,952**	**21,832**	**20,167**	**20,439**	**22,760**
Operating Income (Loss)	**5,897**	**11,619**	**10,203**	**(8,986)**	**5,154**	**8,587**	**9,040**	**11,411**	**11,450**	**7,524**
(Provision) benefit for income taxes	(2,335)	(5,064)	(4,183)	2,161	(2,134)	(3,158)	(2,712)	(3,537)	(3,304)	(2,190)
Income (loss) from discontinued operations:								219	(423)	(1,755)
Net earnings (loss) before changes in accounting principles				(6,825)						
Effect of changes in accounting principles				1,900						
Net Income	**3,562**	**6,555**	**6,020**	**(4,925)**	**3,020**	**5,429**	**6,328**	**8,093**	**7,723**	**3,579**

Exhibit 2 (continued) IBM Corporation Financial History: Balance Sheet for the Years Ended December 31 (US$ millions)

	1980	1985	1990	1992	1994	1996	1998	2000	2001	2002
Assets:										
Cash and cash equivalents	281	896	3,853	4,446	7,922	7,687	5,375	3,563	6,330	5,382
Marketable securities	1,831	4,726	698	1,203	2,632	450	393	159	63	593
Notes and accounts receivable	4,877	10,566	16,962	14,199	15,182	17,446	20,271	12,021	10,362	11,362
Leasing/short-term financing receivables			5,682	7,405	6,351	5,721	6,510	18,705	16,656	15,996
Inventories	2,293	8,579	10,108	8,385	6,334	5,870	5,200	4,765	4,304	3,148
Other	643	1,303	1,617	4,054	2,917	3,521	4,611	4,667	4,746	5,171
Total Current Assets	**9,925**	**26,070**	**38,920**	**39,692**	**41,338**	**40,695**	**42,360**	**43,880**	**42,461**	**41,652**
Plant, rental machines, other property	26,370	34,483	53,659	52,786	44,820	41,893	44,870	38,455	38,375	36,083
Less: accumulated depreciation	11,353	14,803	26,418	31,191	28,156	24,486	25,239	21,741	21,871	21,643
	15,017	19,680	27,241	21,595	16,664	17,407	19,631	16,714	16,504	14,440
Deferred charges/investments and other assets	1,761	6,884	17,308	21,299	20,126	21,595	23,510	14,447	6,417	8,834
Software, less accumulated amortization			4,099	4,119	2,963	1,435	599			
Long-term financing receivables								13,308	12,246	11,440
Prepaid pension assets									11,397	16,003
Goodwill									1,278	4,115
Total Assets	**26,703**	**52,634**	**87,568**	**86,705**	**81,091**	**81,132**	**86,100**	**88,349**	**90,303**	**96,484**
Current Liabilities:										
Taxes	2,369	3,089	3,159	979	1,771	3,029	3,125	4,827	4,644	5,476
Loans payable	591	1,293	7,602	16,467	9,570	12,957	13,905	10,205	11,188	6,031
Accounts payable	721	1,823	3,367	3,147	3,778	4,767	6,252	8,192	7,047	7,630
Compensation and benefits	1,404	2,460	3,014	3,476	2,702	2,950	3,530	3,801	3,796	3,724
Deferred income	305	391	2,506	3,316	3,475	3,640	4,115	4,516	4,223	5,276
Other accrued expenses and liabilities	1,136	2,377	5,628	9,352	7,930	6,657	5,900	4,865	4,221	6,413
Total Current Liabilities	**6,526**	**11,433**	**25,276**	**36,737**	**29,226**	**34,000**	**36,827**	**36,406**	**35,119**	**34,550**
Deferred income taxes	182	3,650	3,861	2,030	1,881	1,627	1,514			
Reserves for employees' indemnities and retirement plans	1,443									
Retirement and non-pension postretirement benefit obligations									10,308	13,215
Long-term debt	2,099	3,955	11,943	12,853	12,548	9,872	15,508	18,371	15,963	19,986
Other liabilities		1,606	3,656	7,461	14,023	14,005	12,818	12,948	5,465	5,951
Total Liabilities	**10,250**	**9,211**	**44,736**	**22,344**	**57,678**	**59,504**	**66,667**	**67,725**	**66,855**	**73,702**
Stockholders' Equity:										
Common stock	3,992	6,267	6,357	6,563	7,342	7,752	10,121	12,400	14,248	14,858
Preferred stock					1,081	253	247	247		
Retained earnings	12,491	27,234	33,234	19,124	12,352	11,189	10,141	23,784	30,142	31,555
Translation adjustments		-1,466	3,266	1,962	2,672	2,401				
Less: treasury stock, at cost	30	45	25	25	34	135	133	13,800	20,114	20,213
Net unrealized gain on marketable securities						168				
Employee benefits trust							-1,854	-1,712		
Accumulated gains and losses not affecting retained earnings							911	-295	-828	-3,418
Total Stockholders' Equity	16,453	31,990	42,832	27,624	23,413	21,628	19,433	20,624	23,448	22,782
Total Liabilities and Stockholders' Equity	**26,703**	**52,634**	**87,568**	**86,705**	**81,091**	**81,132**	**86,100**	**88,349**	**90,303**	**96,484**

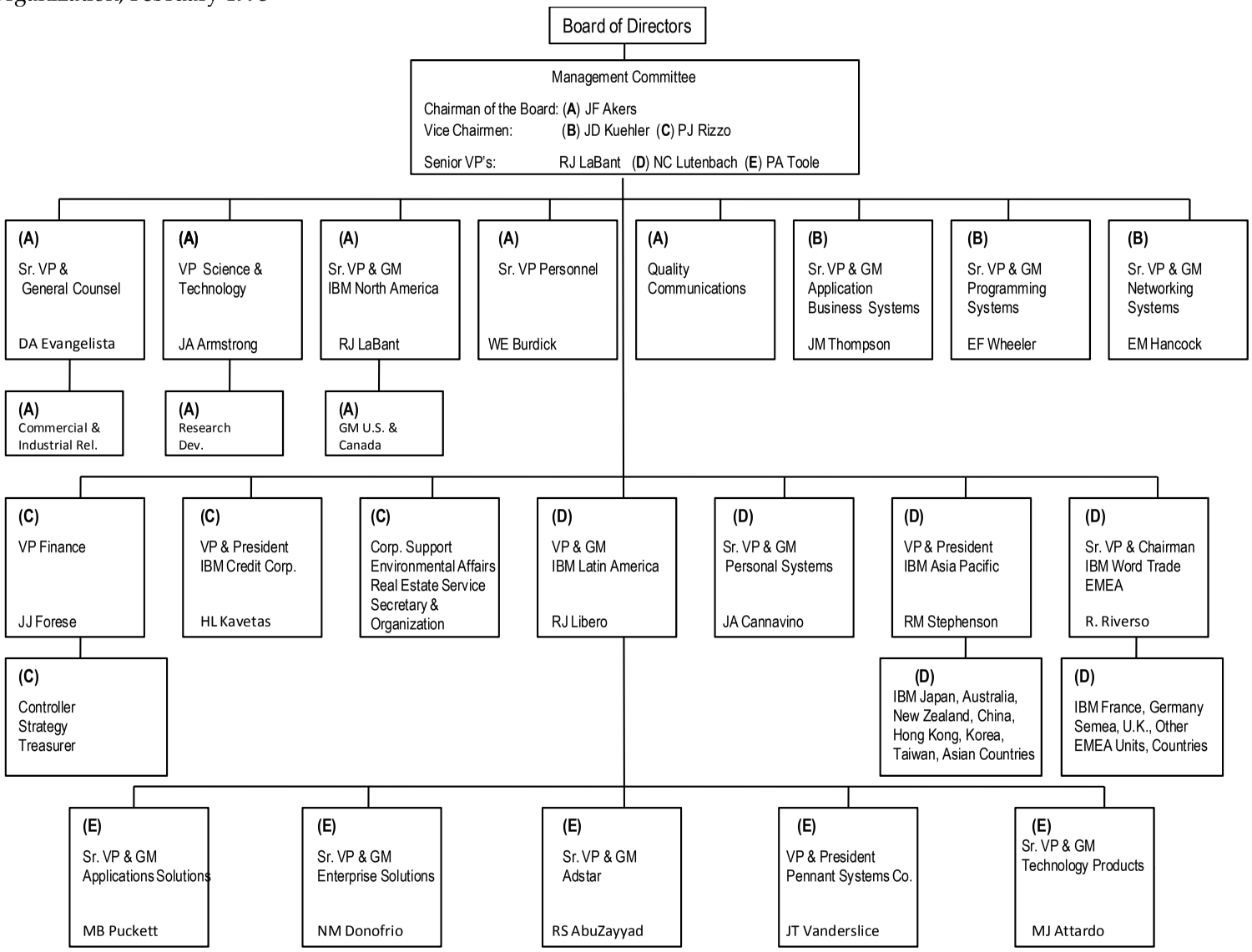
Source: Company documents and annual reports.

Exhibit 2 (continued) IBM Corporation Financial History: Cash Flow Statement for the Years Ended December 31 (US$ millions)

	1980	1985	1990	1992	1994	1996	1998	2000	2001	2002
Cash Flow from Operating Activities										
Income from continuing operations	3,562	6,555	6,020	-4,965	3,021	5,429	6,328	7,874	8,146	5,334
Operating activities:										
Depreciation and amortization	2,362	3,476	5,303	6,259	6,295	5,012	4,992	4,706	4,506	4,379
Deferred income taxes	0	0	0	0	825	11	-606	44	664	-67
Net gain on assets sales and other	1,009	867	32	54	-11	-300	-261	-751	-340	-343
Effect of changes in accounting principles	0	0	0	-1,900	0	0	0	0	0	0
Effect of restructuring charges	0	0	0	8,312	-2,772	-1,491	-355	0	0	0
Funds from operations	90	0	0	0	0	0	0	0	405	1,408
Change in operating assets and liabilities, net of acquisitions/divestitures:										
Receivables	0	0	-2,077	1,052	653	-650	-2,736	-4,692	2,837	4,125
Inventories	0	0	17	704	1,518	196	73	-22	287	793
Pension assets	0	0	0	0	0	0	0	-1,333	-1,758	-4,227
Other assets	0	0	-3,136	-3,396	187	-545	880	673	1,244	70
Accounts payable	0	0	293	-311	305	319	362	2,134	-918	-55
Pension liabilities	0	0	0	0	0	0	596	-237	-69	83
Other liabilities	0	1,880	1,020	465	1,772	2,294	0	441	-1,038	2,288
Net Cash Provided by Operating Activities	**7,023**	**12,778**	**7,472**	**6,274**	**11,793**	**10,275**	**9,273**	**8,837**	**13,966**	**13,788**
Cash Flow from Investing Activities										
Payments for plant, rental machines and other property	-6,195	-6,430	-6,509	-4,751	-3,078	-5,883	-6,520	-5,319	-5,400	-4,753
Proceeds from disposition of plant, rental machines and other property	0	-3,101	804	633	900	1,314	905	1,569	1,149	775
Investment in software	0	-785	-1,892	-1,752	-1,361	-295	-250	-565	-655	-597
Purchases of marketable securities and other investments	-275	-454	-1,234	-3,284	-3,866	-1,613	-4,211	-750	-778	-1,582
Proceeds from disposition of marketable securities and other investments	-1,659	0	1,687	3,276	2,476	1,470	3,945	1,393	738	1,185
Divestiture of businesses	0	0	0	0	1,503	0	0	0	0	1,233
Acquisition of businesses	0	0	0	0	0	-716	0	-329	-916	-3,158
Net Cash Used in Investing Activities	**-8,129**	**-10,770**	**-7,144**	**-5,878**	**-3,426**	**-5,723**	**-6,131**	**-4,001**	**-5,862**	**-6,897**
Translation effects	0	677	0	0	0	0	0	0	0	0
Net Provided from Operations	**-1,106**	**2,685**	**328**	**396**	**8,367**	**4,552**	**3,142**	**4,836**	**8,104**	**6,891**
Cash Flow from Financing Activities										
Net change in long-term debt	510	-686	4,676	10,045	5,335	7,670	7,567	9,604	4,535	6,726
Short-term (repayments)/borrowings less than 90 days--net	0	-459	1,966	4,199	-1,948	-919	499	-1,400	2,926	-4,087
Payments to settle debt	0	0	-3,683	-10,735	-9,445	-4,992	-5,942	-7,561	-7,898	-5,812
Preferred stock transactions--net	0	0	0	0	-10	0	-5	0	-254	0
Common stock transactions--net	-62	-133	-491	-90	318	-5,005	-6,278	-6,073	-3,652	-3,087
Cash dividends paid	-2,008	-2,703	-2,774	-2,765	-662	-706	-834	-929	-966	-1,005
Net Cash Used in Financing Activities	**-1,560**	**-3,981**	**-306**	**654**	**-6,412**	**-3,952**	**-4,993**	**-6,359**	**-5,309**	**-7,265**
Effect of exchange rate changes on cash and cash equivalents	0	0	131	-549	106	-172	120	-147	-83	148
Net cash (used in)/provided by discontinued operations	0	0	0	0	0	0	0	190	55	-722
Net change in cash and cash equivalents	-1,007	1,260	153	501	2,061	428	-1,731	-1,480	2,767	-948
Cash and Cash Equivalents at Jan. 1	4,406	4,362	3,700	3,945	5,861	7,259	7,106	5,043	3,563	6,330
Cash and Cash Equivalents at Dec. 31	3,399	5,622	3,853	4,446	7,922	7,687	5,375	3,563	6,330	5,382

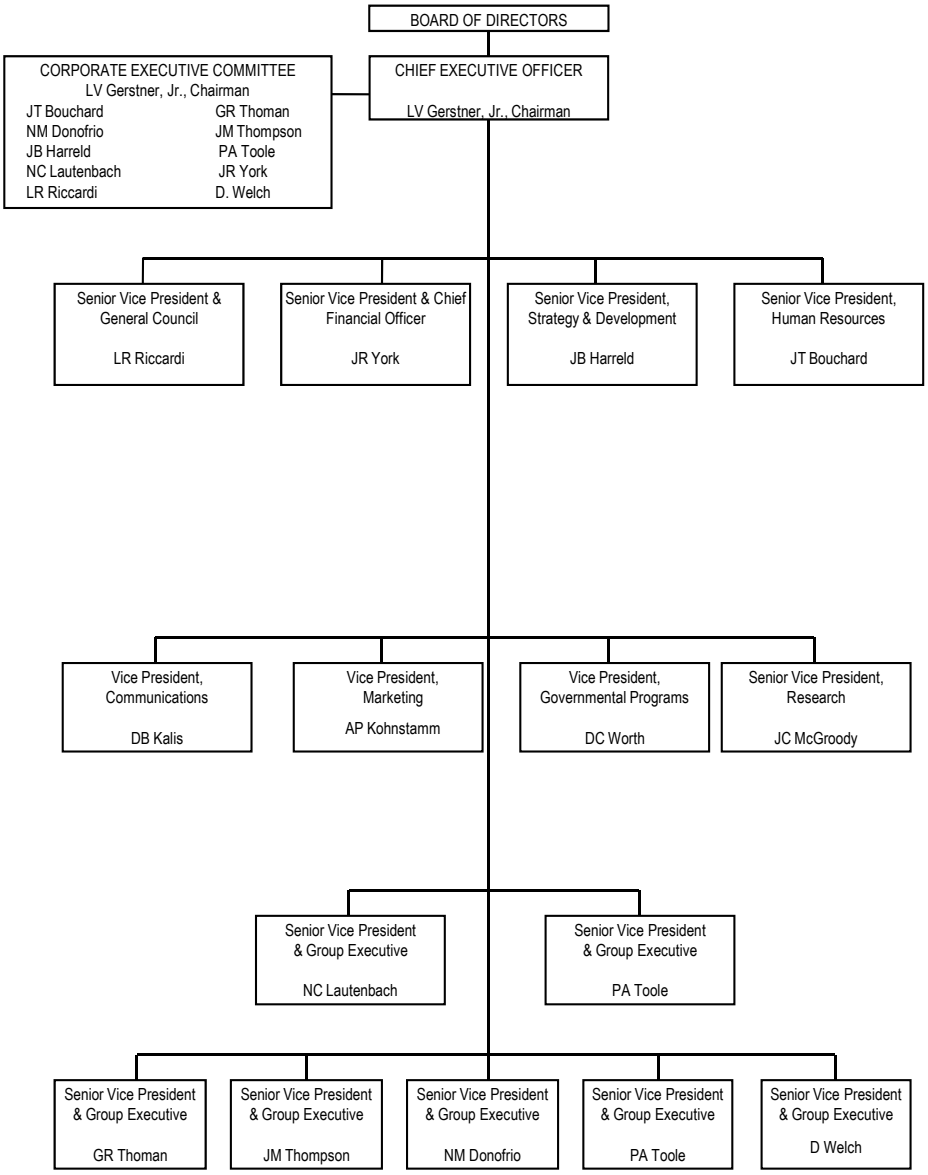
Source: Company documents and annual reports.

Exhibit 3 IBM Organization, February 1993



Note: The letters represent the member of the Management Committee to whom each business unit head reports.

Exhibit 3 (continued) IBM Organization, 1995



Source: Adapted from R. Austin and R. Nolan, "IBM Corporation: Turnaround 1991–1995," HBS Case No. 600-098, pp. 18–19.

Exhibit 4 IBM Basic Beliefs developed by Thomas J. Watson Jr. (1969 to 1993)

Respect for the Individual: Our basic belief is respect for the individual, for his (or her) rights and dignity.

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Service to the Customer: We are dedicated to giving our customers the best possible service. Our products and services bring profits only to the degree that they serve the customer and satisfy his (or her) needs.

Excellence Must Be a Way of Life: We want IBM to be known for its excellence. Therefore, we believe that every task, in every part of the business, should be performed in a superior manner and to the best of our ability. Nothing should be left to chance in our pursuit of excellence.

Managers Must Lead Effectively: Our success depends on intelligent and aggressive management which is sensitive to the need for making an enthusiastic partner of every individual in the organization.

Obligations to Stockholders: IBM has obligations to its stockholders whose capital has created our jobs.

Fair Deal for the Supplier: We want to deal fairly and impartially with suppliers of goods and services.

IBM Should Be a Good Corporate Citizen: We accept our responsibilities as a corporate citizen in community, national, and world affairs; we serve our interests best when we serve the public interest. We believe that the immediate and long-term public interest is best served by a system of competing enterprises. Therefore, we believe we should compete vigorously, but in a spirit of fair play, with respect for our competitors, and with respect for the law. In communities where IBM facilities are located, we do our utmost to help create an environment in which people want to work and live. We acknowledge our obligation as a business institution to help improve the quality of the society we are part of. We want to be in the forefront of those companies which are working to make our world a better place.

Source of IBM Corporate Values 1969-1993: Company documents.

Exhibit 4 (continued) Gerstner's Eight Operating Principles (1993 to 2002)

- The marketplace is the driving force behind everything that we do.
- At our core, we are a technology company with an overriding commitment to quality.
- Our primary measures of success are customer satisfaction and shareholder value.
- We operate as an entrepreneurial organization with a minimum of bureaucracy and never-ending focus on productivity.
- We never lose sight of our strategic vision.
- We think and act with a sense of urgency.
- Outstanding, dedicated people make it all happen, particularly when they work together as a team.
- We are sensitive to the needs of all employees and to the communities in which we operate.

Source: Company documents and Austin, R.D. and Nolan, R.L., *IBM Turnaround*, (HBS No. 600-098).

Exhibit 4 (continued) IBM Values developed by IBM Employees during "Values Jam" (2003 to present)

IBMers Value: Dedication to every client's success.

IBMers are passionate about building strong, long-lasting client relationships. This dedication spurs us to go "above and beyond" on our clients' behalf.

IBMers are focused on outcomes. We sell products, services, and solutions, but all with the goal of helping our clients succeed, however they measure success.

IBMers demonstrate this personal dedication to every client, from the largest corporation and government agency to the startup and neighborhood market.

Every IBMer, no matter where he or she works, has a role in client success. It requires the full spectrum of IBM expertise.

IBMers Value: Innovations that matter for our company and the world.

IBMers are forward thinkers. We believe in progress, believe that the application of intelligence, reason, and science can improve business, society, and the human condition.

IBMers love grand challenges, as well as everyday improvements. Whatever the problem or the context, every IBMer seeks ways to tackle it creatively—to be an innovator.

IBMers strive to be first—in technology, in business, in responsible policy.

IBMers take informed risks and champion new (sometimes unpopular) ideas.

IBMers Value: Trust and personal responsibility in all relationships.

IBMers actively build relationships with all the constituencies of our business—including clients, partners, communities, investors, and fellow IBMers.

IBMers build trust by listening, following through, and keeping their word.

IBMers rely on our colleagues to do the right thing.

IBMers preserve trust even when formal relationships end.

Source of IBM Corporate Values 2003: Company documents and Applegate, L.M. et. al., *IBM's Decade of Transformation: Uniting Vision and Values*, (HBS No. 805-132).

Exhibit 5 Acquisitions and Divestitures (1994–2003)

Divestitures	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Hardware	1	3	1	3	3	12	7	5	9	7
Software	0	0	0	1	4	0	2	1	1	0
Services	0	0	2	2	9	6	9	4	4	4
Financing	1							1		

Acquisitions	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Hardware	0	0	2	0	2	2	2	0	0	0
Software	0	4	9	4	4	4	4	1	6	5
Services	0	5	7	8	9	12	7	4	4	1

Source: Company documents.

Exhibit 6 IBM Root Cause Analysis of New Business Failure during Late 1990s at IBM

1. Our management system rewards execution directed at short-term results and does not place enough value on strategic business building.

2. We are preoccupied with selling current products to current markets and with ensuring disciplined execution of current operations.

3. Our business model emphasizes sustained profit and earnings per share improvement rather than actions to move into higher-growth/higher-price-to-earnings-ratio businesses.

4. Our approach to gathering and using market insights is inadequate for emerging markets, technologies, and businesses.

5. We lack established disciplines and processes for selecting, experimenting, funding, and terminating new business growth.

6. Once identified and funded, many IBM ventures fail due to poor execution.

7. We have an excellent track record for inventing new products but a poor track record of commercializing those inventions.

8. While we were becoming successful in breaking down silos in our current operations, innovations are still managed within silos.

Source: Adapted from D. Garvin and L. Levesque, "Emerging Business Opportunities at IBM (A)," HBS Case No. 304-075, pp. 3 and 4.

Exhibit 7 A Lifecycle Approach to Business Innovation

	Breakthrough Discoveries	Emerging Business Opportunities (EBO's)	High Growth Businesses	Mature Businesses
Goals	Identify shifts in customer needs and breakthrough discoveries to address them	Nurture future business opportunities Reduce market adoption risk Define offerings and launch	Scale businesses & increase market share Expand into new products and markets	Defend core business Increase productivity and profit contribution
Risk	Uncertainty risk Financial risk	Transition risk Market adoption risk	Strategic positioning risk Sustainability risk	Missed opportunities Incremental thinking
Risk Management	Break complex inventions into a series of customer-focused experiments Put scientists in touch with the market Invest in broad research streams with a portfolio of projects	Stage commitment of resources based on business development milestones Involve customer in business/ product development process Ensure new venture teams have leaders experienced in launching new businesses	Cross strategy teams meet monthly to review product-market growth plans and identify performance and opportunity gaps "Deep Dives" enable business teams to challenge strategic plans	Scan regularly for industry trends, disruptors, and technologies Processes and incentives to ensure exposure to, and participation in, launching new businesses and commercializing breakthrough innovations
Investment Approach	Invest in a portfolio of projects within customer domains Syndicate risk by partnering Longer-term rounds of funding/grants with careful monitoring of costs and progress	Invest in emerging businesses with potential to generate multi-billion dollars in revenues within 3-5 years Business unit budgets charged yearly; New venture budgeted quarterly with monthly to weekly review of project-based milestones	Invest to accelerate profit and market share growth and to build capabilities and growth "platforms" Business unit financing based on annual or biannual budgeting with monthly review of strategic and tactical performance	Invest to reduce costs and generate short-term cash flow while carefully monitoring for signs of industry decline Business unit financing with annual budgeting cycle and quarterly review of tactical performance
Leadership and Accountability	Accountability shared by research teams and business leaders Successful leaders have deep expertise in technical field, extensive networks within scientific community and ongoing contact with customer markets	Accountability rests with business leaders with corporate oversight Successful leaders have experience in building and launching new ventures, extensive networks with industry and financing community, and ongoing contact with customer markets	Accountability rests with business leaders Successful leaders have experience identifying and exploiting strategic opportunities, building capabilities required for rapid growth, and are able to play a full role as a business executive within the firm and industry	Accountability rests with business leaders Successful leaders have experience managing mature businesses to generate cash and to exploit strategic position and capabilities as a platform for future growth opportunities
Skills	*Scientists* Technical and market research expertise Motivated to develop scientific breakthroughs Research focused on market needs	*Entrepreneurs* Expertise in turning opportunities into sustainable businesses Motivated to create new businesses Business plan focused	*Business Builders* General management expertise Motivated to grow and scale businesses Top line focused while ensuring profitable growth	*Operators* Deep industry expertise Motivated to meet yearly and quarterly targets Bottom-line focused
Organization and Culture	Team-based structure Critical Tasks: Conduct market/scientific / engineering research Strong research methodological controls Incentives reward creation of intellectual property and personal/research team achievements Culture focuses on discovery	New venture team-based structure Critical Tasks: Build and launch new business venture Strong risk/uncertainty management systems Incentives reward performance against milestones, provide career development and visibility, and the opportunity to lead high growth business Culture focused on entrepreneurship and learning	Product-Market-Geography-based business units structure Critical Tasks: Expand into new products and markets; Build organizational capabilities for growth Strong strategic planning and execution systems Incentives reward profitable growth and increased market share Strategic planning culture	Divisional structure Critical Tasks: Streamline and integrate operating processes Strong operational execution and customer loyalty systems Incentive s reward achievement of profit and operating performance targets Culture of operational execution and control

Source: Lynda Applegate and Bruce Harreld[40]

Exhibit 8 Evolution of IBM Emerging Business Opportunities (EBOs) between 1999 and 2005

Criteria for being selected as one of the initial EBOs:

- Need for cross-business cooperation and resources;
- Maturity of the business plan and strategy (e.g., key market and technology risks appeared manageable and expertise was available to build the first offering and take it to market); and
- Forecasted size of the market suggests the potential for generating over $1 billion in three to five years.

Original EBO's (Launched between 1999 and 2001) (By 2003, all except those marked with an * had transitioned to High Growth and were fully integrated into IBM lines of business)		
EBO	**IBM Business Unit**	**Comments**
Business Transformation Consulting	IBM Global Services	<$1 billion in revenues by 2005
Digital Media	Sales, Marketing, and Distribution	<$1 billion in revenues by 2005
Life Sciences	Sales, Marketing, and Distribution	<$1 billion in revenues by 2005
Linux	Systems and Technology Group	<$2 billion in revenues by 2005
Pervasive Computing	Software Group	<$2 billion in revenues by 2005
Autonomic Computing	Software Group	In H2 but not yet $1B in revenues
Blade Servers	Systems and Technology Group	In H2 but not yet $1B in revenues
Business Process Integration	Software Group	In H2 but not yet $1B in revenues
Dynamic Workplace	Software Group	In H2 but not yet $1B in revenues
Engineering and Technical Services	Systems and Technology Group	In H2 but not yet $1B in revenues
Flexible Hosting Services	IBM Global Services	In H2 but not yet $1B in revenues
Grid Computing	Systems and Technology Group	In H2 but not yet $1B in revenues
Learning Solutions	IBM Global Services	In H2 but not yet $1B in revenues
STI Cell	Systems and Technology Group	In H2 but not yet $1B in revenues
Storage Software	Systems and Technology Group	In H2 but not yet $1B in revenues
*e-Markets	IBM Global Services	Dropped
*Network Processes	Systems and Technology Group	Dropped
*Product Lifecycle Management	Sales, Marketing, and Distribution	Dropped
New EBO's (Launched between 2001-2005)		
Brazil, Russia (+ Eastern/Central Europe), India, China	Emerging Geographies	BRIC nations grew 50% during 2003 and contributed over $3 billion in revenues
Retail On Demand	Sales and Distribution	
Information-Based Medicine	Sales and Distribution	Outgrowth of Life Sciences
Sensors and Actuators	Software Group	Outgrowth of Pervasive Computing

Source: Author based on data supplied by IBM.

Appendix IBM Transformation (1993-2001): Summary of Benefits

IBM Turnaround: Sample Projects and Metrics

IBM Sample Projects and Operating Metrics	Sample Financial Metrics
Leverage Infrastructure: IT Operations	
- Decreased data centers from 155 to 11, which feed into three "mega centers"; developed single global Internet network to replace 31 incompatible networks - Shifted to "open source," common standards for information processing (Linux) and enterprise applications (SAP, PeopleSoft, Siebel) - Redesigned system development process to enable modular design and reuse - Decreased number of global applications from 16,000 to 5,200 - 60% reduction in IT professional headcount - 128 CIOs to 1	- 50% reduction in total cost of ownership for data center and network operations and internal enterprise application development and maintenance - Direct cost savings in internal IT expenses of over $2 billion per year beginning in 1997 - Return on invested capital ($100 million between 1994 and 1996 = less than 1 year)
Leverage Infrastructure: Enterprise Support Processes	
- Streamlined, integrated, and centralized IT-enabled enterprise processes (e.g., procurement, enterprise resource planning, human resources, payroll, finance) - Selectively outsourced activities and processes where IBM was not best-in-class (e.g., HR, physical warehouse, inventory management, and selected logistics) - Decreased the number of financial centers from 67 to 8 and financial applications from 145 to 55 - Decreased the cycle time for accounting close from 187 to 7 days - eEnabled then decreased the number of suppliers to 33,000; electronic purchases reached 95% - Centralized and integrated the supply chain and outsourced to IBM Global Services; 19,000 employees manage procurement, inventory, and logistics for over $47 billion in parts, equipment, and services - Decreased maverick buying from >35% to <0.2% - Supplier quality increased from <85% to >99% - Purchase order processing time decreased from >30 days to <1 day - Ability to "sense and respond" to customer demand enables IBM to quickly meet unexpected rise or fall in demand for products - Supplier, employee, and partner satisfaction scores doubled - Winner, MIT Process Improvement Award and *Purchasing Magazine* Medal of Excellence	- $7 billion in direct savings + $2 billion in cost avoidance per year from supply chain improvements - Cash generation increased by $8 billion from supply chain cost savings - HR, payroll, finance process costs reduced over 50%, representing almost $1 billion in direct cost savings per year - Purchasing expense / revenue ratio decreased from 3.2% to 1.5%
Create Options	
- Transferred internal IBM-shared services and centralized process reengineering infrastructure and expertise to IBM Global Services where it became the basis for new service offerings, including business transformation outsourcing - Leveraged end-to-end IT-enabled processes to deliver real-time, actionable information to internal IBM decision makers and to customers, suppliers, and business partners - Enabled continuous improvement and organizational learning	- See metrics associated with profitable growth and proprietary advantage

Appendix (continued)

IBM Turnaround: Sample Projects and Metrics

IBM Sample Projects and Value Drivers	Sample Financial Metrics
Drive Profitable Growth: Revenue-Generating Capabilities	
- Benchmarked new product development process and found slow time to market (85% of projects at least 1.25X longer than best-in-class) and development expense ratio that was over 2X higher than best-in-class - Redesigned hardware / software research and new-product development processes to reduce time to market and lower development costs	- Abandoned-project expense decreased by over 90% - Warranty expense to revenue decreased by 25% - New-product development cycle time: 67% faster time to market - Decreased product development expense ratio by 50%, generating cost savings of over $1.6 billion annually
Drive Profitable Growth: Actionable Information and Business Analytics	
- Developed knowledge management, content collaboration, and Web portal infrastructure and tools to enable knowledge workers to develop personalized knowledge sharing and business analytics - IBM Global Services developed a Web-based knowledge-sharing portal to leverage its consultants' expertise during period of rapid growth. - Partnered with Siebel to reengineer customer relationship management (CRM) processes then transferred demand generation process management to IBM Global Services - 68% of employees rank the intranet as preferred channel for doing business	- Consultant intranet led to decreased consulting engagement time by 40% to 80%, increased revenues per consultant by 20%, and improved consulting margins by 400% - eLearning saves $350 million per year on employee education (12% YOY savings) - Websphere, content management, and collaboration tools generate double-digit revenue growth in 2003 - Internal demand generation process and Siebel partnership become the foundation for IBM Global Services to launch a new business process outsourcing service offering
Drive Profitable Growth: IT-Enabled Product / Service Offerings	
- Leveraged shared services infrastructure and expertise to deliver services to internal IBM customers and to offer significant enhancements to its data center outsourcing business - Launched new offerings related to business process outsourcing, e-business, and Web services - By 2003, 22 of 25 new emerging business opportunity (EBO) businesses had transitioned from new ventures to high-growth businesses	- IBM Global Services revenues exceeded $36 billion in 2002, up from $15 billion in 1992 - Linux-based (open standard) server market revenues growing at 35% per year - Server revenues grew at 32% and contribution margin increased to 31% - Software revenue increased to $14.2 billion in 2003, up from $11.1 billion in 1992 - Four new EBO product offerings were each generating over $1 billion in profitable high-margin revenues annually and three additional new businesses doubled their revenues

Source: Author.

End Notes

[1] D. Kirkpatrick, "Inside Sam's $100 billion growth machine," *Fortune*, June 21, 2004, p. 98.

[2] Ibid.

[3] Ibid.

[4] As quoted in Simon London, "IBM's new chief executive is betting that the company's future lies in the acquisition of a consulting firm," *The Financial Times*, October 10, 2003.

[5] Spencer Ante, "The New Blue," *BusinessWeek*, March 17, 2003.

[6] R. Austin and R. Nolan, "IBM Corporation: Turnaround 1991–1995," HBS Case No. 600-098 (Boston: Harvard Business School Publishing, 2000), p. 4.

[7] Ibid., p. 3.

[8] Ibid., p. 4.

[9] The VAX was a Digital Equipment Company midrange computer that gained wide popularity in the 1980s; platforms in the VAX family, from high to low end, were based on the same architecture and interoperated well. This degree of interoperability was unusual at the time the VAX was introduced, and it provided a flexible and cost-effective alternative to mainframes for many applications.

[10] R. Austin and R. Nolan, "IBM Corporation: Turnaround 1991–1995," HBS Case No. 600-098, p. 5.

[11] J. Stafford, "IBM's plan to win VAR 2000," *VarBusiness*, May 24, 1999.

[12] Author interview, April 2004.

[13] "The customer drives everything," *Maclean's* magazine, December 16, 2002.

[14] R. Austin and R. Nolan, "IBM Corporation: Turnaround 1991–1995," HBS Case No. 600-098, p. 7.

[15] Ibid., p. 9.

[16] Ibid., p. 8.

[17] TCP/IP (Transport Control Protocol/Internet Protocol) is the standard used to communicate and share information on the Internet.

[18] Author interview, January 2004.

[19] Author interview, January 2004.

[20] "The customer drives everything," *Maclean's*, December 16, 2002.

[21] Author interviews, August 2003 and December 2004.

[22] Author interview, January 2004.

[23] Gary Hamel, "Waking up IBM: How a gang of unlikely rebels transformed Big Blue," *Harvard Business Review OnPoint*, 2001, p. 6. This section draws on the information in this article.

[24] In May 1994, Kohnstamm, who had worked with Gerstner at American Express, in what *The New York Times* called "the largest shift in advertising history," reallocated all of IBM's advertising budget of approximately one-half billion dollars from an assortment of 40 different agencies to a single agency, Ogilvy and Mather Worldwide. By the end of 1994, the team had launched the award-winning "Solutions for a Small Planet" campaign, which captured the One IBM theme.

[25] Lou Gerstner, "*Who Says Elephants Can't Dance? Inside IBM's Historic Turnaround*" (New York: Harper Business,2002).

[26] Gerstner picked Sam Palmisano to run IGS from 1996 to 1999. "Services is the part of the business that saved Gerstner's job. Palmisano is the guy who made it work," said *Wall Street Journal* reporter William Bulkeley. "IBM's next CEO may be the one to bring change." *The Wall Street Journal Europe*, May 22, 2001.

[27] Fuscaldo, "IBM Chairman Gerstner calls 2000 a good year for Big Blue," IBM press release, 2000.

[28] This section draws on D. Garvin and L. Levesque, "Emerging Business Opportunities at IBM (A)," HBS Case No. 304-075.

[29] A. Deutschman, "Building a better skunk works," *Fast Company*, March 2005, p. 68.

[30] A. Deutschman, "Building a better skunk works," *Fast Company*, March 2005, p. 68.

[31] D. Garvin and L. Levesque, "Emerging Business Opportunities at IBM (A)," HBS Case No. 304-075, p. 2.

[32] Ibid.

[33] M. Baghai et al., *The Alchemy of Growth* (Reading, MA: Perseus Press, 1999).

[34] D. Garvin and L. Levesque, "Emerging Business Opportunities at IBM (A)," HBS Case No. 304-075, p. 5.

[35] Author interview, February 2004.

[36] Author interview, January 2004.

[37] S. Palmisano, "Letter to Shareholders, *IBM Annual Report*, 2003.

[38] D. Kirkpatrick, "Inside Sam's $100 billion growth machine," *Fortune*, June 21, 2004, p. 98.

[39] S. Palmisano, "Letter to Shareholders, *IBM Annual Report*, 2003.

[40] Applegate, L. and Harreld, B., "Don't Just Survive—Thrive: Leading Innovation in Good Times and Bad," *HBS Working Paper* # 09-127.