



Jack Welch: General Electric's Revolutionary

In 1993, Jack Welch might be satisfied that the ultimate arbiter of value, the stock market, seemed to appreciate GE's achievements under his leadership. From a multiple of 7 in 1982, the price/earnings ratio had climbed to 16—a clear signal that the stock market was enamored with the changes Welch was making at GE. Over a period when the S&P 500 had risen 326%, GE market value had grown 498%. (See **Exhibit 1**.) If GE was not yet as “lean and agile” as Welch might want, it was surely a far more nimble giant than the company he had inherited from the “management legend” Reg Jones.

In fact, as GE entered its twelfth year with Welch at the helm, the company was once again being studied widely as a model of how a giant corporation ought to be managed. Fundamentally, Welch appeared to be pulling off the impossible. He was making one of the largest, most complex companies in the world perform like a growth company. At first, the accomplishment was merely discounted. By 1993, however, Welch was being credited with a world-class achievement in management. Having concluded that Jack Welch had done the impossible and transformed giant GE, everyone interested in management wanted to know whether it was fluke of personality or whether generalizable principles, useful for all, underlay Welch's achievement. Had Jack Welch presided over the invention of a new approach to managing a complex organization?

GE as an Inventor

Founded to exploit Thomas Edison's patents, the company that later became GE soon assembled a range of businesses, wide for the time, dedicated to the generation, distribution, and use of electric power. Later, businesses such as aircraft engines, engineering plastics, nuclear power and computers were added to the basic businesses of generators, transformers, wire and cable, lighting and home appliances.

Professor Joseph L. Bower, assisted by Research Associate Jay Dial, prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. It is based on earlier cases: “General Electric: Strategic Position 1981 (No. 381-174) and “General Electric 1984” (No. 385-315) prepared by Professors Francis J. Aguilar and Richard Hamermesh and Research Assistant Caroline Brainard as well as “General Electric: Jack Welch's Second Wave (A)” (No. 391-248), prepared by Research Associate Kenton W. Elderkin and Professor Christopher A. Bartlett. It also draws on “Speed, Simplicity, Self-Confidence: An Interview with Jack Welch” by Noel Tichy and Ram Charan, Harvard Business Review, September-October 1989.

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GE's size and complexity had always proved a challenge for its leaders. In the 1930s to help control its diversity, GE had developed a powerful financial staff. Later, in the 1950s in order to develop a more entrepreneurial culture suited to diversification, profit centers and group staff were introduced by CEO Ralph Cordiner. As the post-war trendsetter of divisionalization, GE was broken up into more than 100 businesses. When these grew large, they were again broken up. Cordiner's organizational arrangements for managing diversity became a role model and were widely copied. In the 1960s, to provide substantive analysis to deal with the stagnant profits that resulted from the consequent dispersion of resources, Fred Borch used his planning staff and leading consulting firms to develop PIMS and portfolio strategic planning. Once again GE's innovations were widely imitated by companies around the world.

Borch's consultants argued that allocating resources on the basis of projected ROI led to waste because incremental investments almost always looked attractive even when the business was poor. But there was no system for looking at businesses. The consultants recommended that GE should reorganize completely into what they called Strategic Business Units (SBUs). The special characteristics of an SBU were a unique set of integrated strategic plans and the ability for the unit manager to "call the shots" on all the factors crucial to the success of the business. Thus, where there had been profit centers for ranges, refrigerators, and dishwashers, there would now be only a home appliance SBU.

The Jones Legacy

When he was named GE's new chairman and CEO in 1972, Reg Jones took over a company consisting of 10 groups, 46 divisions and 190 departments. These were organized into 43 SBUs that were intended to provide a basis for better planning and investment. Jones asked each to hire a strategic planner.

By the mid-1970s, some GE managers believed that SBU planning, while helping to strengthen GE's competitive positions and to improve profits, was also leading to a balkanization of the company. GE appeared to be moving in the direction of becoming a holding company.

In Jones' mind, another problem was that corporate review of SBU plans also suffered from overload. He explained:

Right from the start of SBU planning in 1972, the vice chairmen and I tried to review each plan in great detail. This effort took untold hours and placed a tremendous burden on the corporate executive office. After awhile, I began to realize that no matter how hard we would work, we could not achieve the necessary in-depth understanding of the forty-odd SBU plans. Somehow, the review burden had to be carried on more shoulders.¹

In 1977, Jones announced a "sector" organization structure as a new level of management that represented a macrobusiness or industry area. Jones' objective was to spread the review load, and also to add more value at the corporate level. After allowing time for the six sector structure to take root, Jones concluded, "The sector approach . . . exceeded my expectations. Now I can look at six planning books and understand them well enough to ask the right questions."² *Fortune* anointed Jones a "Management Legend" for his accomplishments.

Jones also had a private reason for this organizational change. He thought it time to consider succession and the sector executive position would provide visibility for the candidates in a horse race for CEO. The position also enabled him to broaden the managers by assigning them responsibilities for businesses new to them. Jack Welch, for example, was reassigned from engineering plastics where he had succeeded in building up a magnificent high-tech business to sector executive for home appliances. From that position he was elected CEO.

A Harvard Business School professor who had invited Welch to his class on a number of occasions during the 1970s later wrote:

“Welch’s youth, extremely high energy level, candor in responding to tough questions, and obvious leadership qualities combined to captivate my students. Welch was engaged in a horse race, and I told my students that. In the class following each of Welch’s appearances, I asked the students whether they thought he would be the next chairman of GE, winning out over six other candidates. Knowing nothing about the other six candidates, my students, each time, concluded that Welch did not fit their stereotype of GE’s CEO, and the job would probably go to someone more conventional. Welch was a maverick, he let the students know it, and they loved him for it, but that’s what happens to mavericks. I didn’t know the other candidates either, but I shared my students’ view, and was astonished at the announcement in December 1980 that Welch had won the race. The outcome that I admire is that somehow the officers and directors of GE were able to select a new CEO who was more likely to make difficult changes than some of the other contenders for the job. The core issue in CEO selection is the tension between continuity and change. In this case, GE was able to select an ‘outsider’ from inside.”³

Welch’s Background⁴

According to Welch, most of his values and beliefs had been shaped during his childhood years:

I was an only child. My parents were about 40 when they had me, and they had been trying for years 16 years. My father was a railroad conductor, a good man, hard working, passive. . . . [My mother] always felt I could do anything. It was my mother who trained me, taught me the facts of life. She wanted me to be independent. Control your own destiny—she always had that idea. Saw reality. No mincing words. Whenever I got out of line, she would whack me one, but always positive, always constructive, always uplifting. And I was just nuts about her.⁵

One of Welch’s high school classmates described him as “a nice, regular guy, but always very competitive, relentless, and argumentative.” A college classmate said, “The desire to win was in his eyes. He was always looking one step ahead.” Another classmate said, “He hated losing—even in touch football,” and another said, “Jack wasn’t blessed with a lot of grace or athletic ability. He trounced people by trying harder.” One of Welch’s most remembered comments was, “We’re still friends?”⁶

Years later, a colleague would claim that Welch’s management style was built on his hockey-playing years. “Hockey is the kind of game where people bang you up against the boards and then go out and have a drink with you after,” he said. Using “constructive conflict”

Welch often forced managers to defend their views, even if that meant getting into shouting-match arguments. “Jack will chase you around the room, throwing arguments and objections at you,” said one executive. “Then you fight back until he lets you do what you want, and it’s clear you’ll do everything you can to make it work.” According to another manager, “If you win, you never know if you’ve convinced him or if he agreed with you all along and was just making you strut your stuff.”

Welch was the first engineer to earn a Ph.D. from the University of Illinois in only three years. Graduating in 1960, he joined GE’s plastics division in Pittsfield, Massachusetts. In 1968, at age 32, he became the youngest division manager in GE. Because people neither really knew what the unit was doing nor had high expectations for it, Welch got a considerable degree of freedom and responsibility. Starting with the Detroit automakers, he rapidly expanded his sales to OEMs worldwide. Overseas operations reinforced his autonomy, allowing him to transform the small plastics operation into a \$400 million business. Always open, he distrusted anyone who hoarded information or surrounded themselves with staffs.

Transferred to corporate headquarters in Fairfield, Connecticut in 1977, Welch was astonished at the Byzantine nature of GE’s bureaucracy. In his view, corporate staff was interfering too much in line activities—requiring presentations, demanding reports—but doing little to create or sell more products. He felt that this led line people to waste their time playing political games with corporate staff in the hope that they would receive some benefit. He cringed as he recalled the \$30,000 the light bulb business had spent to produce a film in order to make its case with corporate for a new piece of production equipment.

Jack Welch Takes Charge

Jack Welch took office in April 1981 shortly after his forty-fifth birthday. As the new chairman and chief executive officer of General Electric, he described his vision for GE:

A decade from now I would like General Electric to be perceived as a unique, high-spirited, entrepreneurial enterprise . . . a company known around the world for its unmatched level of excellence. I want General Electric to be the most profitable, highly diversified company on earth, with world-quality leadership in every one of its product lines.⁷

Welch, in his 1989 *Harvard Business Review* interview noted: “In 1981, when we first defined our business strategy, the real focus was Japan. The entire organization had to understand that GE was in a tougher, more competitive world, with Japan as the cutting edge of the new competition. Nine years later, that competitive toughness has increased by a factor of five or ten.”⁸ Also, when Welch took office, the U.S. economy was in serious decline aggravated by soaring interest rates and a strong dollar.

In terms of GE’s strategic response, Welch told an HBS audience that “you can’t set an overall theme or a single strategy for a corporation so diverse as GE.” Instead, Welch determined that the goal was to be number one or number two in every business the company was in. Achieving this required a common concern for quality and excellence. “To me, quality and excellence mean being better than the best. . . . If we aren’t, we should ask ourselves ‘What

will it take?’ then quantify the energy and resources to get there. If the economics, the environment, or our abilities determine that we can’t get there, we must take the same spirited action to disengage ourselves from that which we can’t make better than the best.”

As GE built and exited businesses, Welch found that he needed a concise way to give strategic meaning to his actions. In 1983, he developed the “three circle concept” as it came to be called (after a drawing he made for a reporter). All businesses were divided into (1) core, (2) high technology, or (3) service areas. Only the fifteen businesses that dominated their markets would be placed in a circle. (See **Exhibits 2 and 3**.) The others either had to come up with a strategy for achieving dominance or be divested. Welch decreed that core businesses were to focus on “reinvestment in productivity and quality,” and the high-tech businesses were to “stay on the leading edge” through acquisitions and large R&D investments, the services were to grow by “adding outstanding people who create new ventures and by making contiguous acquisitions.” Welch noted that “we have our hands on a simple, understandable strategy for where we are, where we are not, where we can’t find a solution, and where we have to disengage. We have to get used to the idea that disengaging does not mean bad people or bad management; it’s a bad situation, and we can’t tie up good dollars chasing it.” The major moves Welch made into and out of businesses in order to be number one or number two are shown in **Exhibit 4**. Profits from divestitures were used to fund acquisitions and growth of remaining businesses.

To deal with a corporate bureaucracy that seemed out of place in the new GE, he emphasized what became known as “destaffing.” From 1980 to 1984, the total workforce was reduced from 402,000 to 330,000. While the press nicknamed him “Neutron Jack,” after the neutron bomb which wipes out people but leaves buildings intact, Welch believed the label to be exaggerated. He was convinced that a company the size of GE needed to stay “lean and agile” to be competitive. He acknowledged that becoming lean required destaffing, but he stated that the company had no intention of becoming “mean” in the process.

Welch also believed that the planning system had evolved from being fresh, idea-oriented and effective to becoming bureaucratic and inhibiting. To increase candor and constructive discussions, planning reviews were restructured so Welch and the two vice chairmen talked with individual SBU managers privately and informally. Rather than focusing on comprehensive strategic documentation or planning concepts, Welch directed the review around the key issues for each business. Welch cut the 200-person corporate planning staff in half by 1984. His objective was to get “general managers talking to general managers about strategy, rather than planners talking to planners.”⁹

GE’s Cultural Change

Going for the Leap

By 1984, in spite of substantial accomplishments, Welch claimed that he was only at the 15% mark of what he intended to do. Said Welch: “A company can boost productivity by restructuring, removing bureaucracy and downsizing, but it cannot sustain high productivity without cultural change.” Addressing GE employees in 1985, he suggested.

“For me, the idea is: shun the incremental and go for the leap. Most bureaucracies—and ours is no exception—unfortunately still think in incremental terms rather than in terms of

fundamental change. They think incrementally primarily because they think internally. Changing the culture—opening it up to the quantum change—means constantly asking not how fast am I going, how well am I doing versus how well I did a year or two before, but rather, how fast and how well am I doing versus the world outside. Are we moving faster, are we doing better against that external standard?”

“Changing the culture starts with an attitude. And I would suggest it starts at the top—with the CEOs and the boards of directors that are charged with leading our institutions. More boards have to be thinking: how much can this organization take, how much can it absorb, is it being stressed too little or too much—constantly challenging the pace. How does an institution know when the pace is about right? I hope you won't think I'm being melodramatic if I say that the institution ought to stretch itself, ought to reach, to the point where it almost comes unglued.”¹⁰

Welch's People

In his *Harvard Business Review* interview, Welch stated:

“Good business leaders create a vision, articulate the vision, passionately own the vision, and relentlessly drive it to completion. Above all else, though, good leaders are open. They go up, down, and around their organization to reach people. They don't stick to the established channels. They're informal. They're straight with people. They make a religion out of being accessible. They never get bored telling their story.”

“Real communication takes countless hours of eyeball to eyeball, back and forth. It means more listening than talking. It's not pronouncements on a videotape; it's not announcements in a newspaper. It is human beings coming to see and accept things through a constant interactive process aimed at consensus. And it must be absolutely relentless. That's a real challenge for us. There's still not enough candor in this company.”¹¹

“I mean facing reality, seeing the world as it is rather than as you wish it were. We've seen over and over again that businesses facing market downturns, tougher competition, and more demanding customers inevitably make forecasts that are much too optimistic. This means they don't take advantage of the opportunities change usually offers. Change in the marketplace isn't something to fear; it's an enormous opportunity to shuffle the deck, to replay the game. Candid managers—leaders—don't get paralyzed about the “fragility” of the organization. They tell people the truth. That doesn't scare them because they realize their people know the truth anyway.”

“We've had managers at GE who couldn't change, who kept telling us to leave them alone. They wanted to sit back, to keep things the way they were. And that's just what they did—until they and most of their staffs had to go. That's the lousy part of this job. . . . The point is, what determines your destiny is not the hand you're dealt; it's how you play the hand. And the best way to play your hand is to face reality—see the world the way it is—and act accordingly.”

“For a large organization to be effective, it must be simple. For a large organization to be simple, its people must have self-confidence and intellectual self-assurance. Insecure managers create complexity. Frightened, nervous managers use thick, convoluted planning books and busy slides filled with everything they've known since childhood. Real leaders don't need clutter. People must have the self-confidence to be clear, precise, to be sure that every

person in their organization—highest to lowest—understands what the business is trying to achieve. But it's not easy. You can't believe how hard it is for people to be simple, how much they fear being simple. They worry that if they're simple, people will think they're simple-minded. In reality, of course, it's just the reverse. Clear, tough-minded people are the most simple."¹²

"Simple doesn't mean easy, especially as you try to move this approach down through the organization. When you take out layers, you change the exposure of the managers who remain. They sit right in the sun. Some of them blotch immediately; they can't stand the exposure of leadership."¹³

Welch made similar statements at the 1989 GE shareholders meeting:

"We found in the 1980s that becoming faster is tied to becoming simpler. Our businesses, with tens of thousands of employees, will not respond to visions that have sub-paragraphs and footnotes. If we're not simple, we can't be fast . . . and if we're not fast, we can't win."

"Simplicity, to an engineer, means clean, functional winning designs, no bells or whistles. In marketing, it might manifest itself as clear, unencumbered proposals. For manufacturing people, it would produce a logical process that makes sense to every individual on the line. And on an individual, interpersonal level, it would take the form of plain-speaking, directness, honesty."

"But just as surely as speed flows from simplicity, simplicity is grounded in self-confidence. Self-confidence does not grow in someone who is just another appendage on the bureaucracy; whose authority rests on little more than a title. People who are freed from the confines of their box on the organization chart, whose status rests on real-world achievement—those are the people who develop the self-confidence to be simple, to share every bit of information available to them, to listen to those above, below and around them and then move boldly."

"But a company can't distribute self-confidence. What it can do—what we must do—is to give each of our people an opportunity to win, to contribute, and hence earn self-confidence themselves. They don't get that opportunity, they can't taste winning if they spend their days wandering in the muck of a self-absorbed bureaucracy."

"Speed . . . simplicity . . . self-confidence. We have it in increasing measure. We know where it comes from . . . and we have plans to increase it in the 1990s."

Welch wanted to keep directly in touch with the rich resource that he believed existed in GE's employees. For this reason, he retained the sophisticated management development process (known as CI and CII reviews) that had long been part of the company's tradition. For three hours each Spring and again in the Fall he met with each business to review their human resource potential and how it was being developed. He was a big supporter of Crotonville, GE's education center, but focused it more on specific company-related development activities.

Welch's Organization

In addressing the 1989 GE shareholders meeting, Welch also commented:

“We had constructed over the years a management apparatus that was right for its time, the toast of the business schools. Divisions, strategic business units, groups, sectors, all were designed to make meticulous, calculated decisions and move them smoothly forward and upward. This system produced highly polished work. It was right for the 1970s, a growing handicap in the 1980s, and it would have been a ticket to the boneyard in the 1990s.”

“So we got rid of it, along with a lot of reports, meetings, and the endless paper that flowed like lava from the upper levels of the company. When we did this, we began to see people—who for years had spent half their time serving the system and the other half fighting it—suddenly come to life, making decisions in minutes, face to face, on matters that would have once produced months of staff gyrations and forests of paper. But this transformation, this rebirth, was largely confined to upper management. In the 1990s we want to see it engulf and galvanize the entire company.”

One year later the 1990 Annual Report stated:

“The walls within a big century-old company don’t come down like Jericho’s when management makes some organizational changes—or gives a speech. There are too many persistent habits propping them up. Parochialism, turf battles, status, “functionalitis,” and, most important, the biggest sin of a bureaucracy, the focus on itself and its inner workings, are always in the background.”

Surveying organizational changes, Welch commented, “We’re now down in some businesses [from nine] to four [layers] from the top to the bottom. That’s the ultimate objective. We used to have things like department managers, section managers, subsection managers, unit managers, supervisors. We’re driving those titles out. . . . We used to go from the CEO . . . to sectors, to groups to businesses. We now go from the CEO . . . to businesses. Nothing else. There is nothing else there. Zero.”¹⁴

In the *Harvard Business Review*, Welch elaborated:

“Layers hide weaknesses. Layers mask mediocrity. I firmly believe that an overburdened, overstretched executive is the best executive because he or she doesn’t have the time to meddle, to deal in trivia, to bother people. Remember the theory that a manager should have no more than 6 or 7 direct reports? I say the right number is closer to 10 or 15. This way you have no choice but to let people flex their muscles, let them grow and mature. With 10 or 15 reports, a leader can focus only on the big important issues, not on minutiae.”

“We also reduced the corporate staff. Headquarters can be the bane of corporate America. It can strangle, choke, delay, and create insecurity. If you’re going to have simplicity in the field, you can’t have a big staff at home. We don’t need the questioners and the checkers, the nitpickers who bog down the process, people whose only role is to second-guess people who clog communication inside the company. Today people at headquarters are experts in taxes, finance, or some other key area that can help people in the field. Our corporate staff no longer just challenges and questions; it assists. This is a mind-set change: staff essentially reports to the field rather than the other way around. . . . Each staff person has to ask, ‘How do I add value? How do I help make people on the line more effective and more competitive?’ In

the past, many staff functions were driven by control rather than adding value. Staffs with that focus have to be eliminated. They sap emotional energy in the organization. . . .”¹⁵

“Cutting the groups and sectors eliminated communications filters. Today there is direct communication between the CEO and the leaders of the 14 businesses. We have very short cycle times for decisions and little interference by corporate staff. A major investment decision that used to take a year can now be made in a matter of days.”¹⁶

“I operate on a very simple belief about business. If there are six of us in a room and we all get the same facts, in most cases, the six of us will reach roughly the same conclusion. And once we all accept that conclusion, we can force our energy into it and put it into action. The problem is we don’t get the same information. We each get different pieces. Business isn’t complicated. The complications arise when people are cut off from information they need. That’s what we’re trying to change.”¹⁷

“We also run a Corporate Executive Council, the CEC. For two days every quarter, we meet with the leaders of the 14 businesses and our top staff people. These aren’t stuffy, formal strategic reviews. We share ideas and information candidly and openly, including programs that have failed. The important thing is that at the end of those two days everyone in the CEC has seen and discussed the same information. The CEC creates a sense of trust, a sense of personal familiarity and mutual obligation at the top of the company. We consider the CEC a piece of organizational technology that is very important for our future success. . . .”

“People always overestimate how complex business is. This isn’t rocket science; we’ve chosen one of the world’s more simple professions. Most global businesses have three or four critical competitors, and you know who they are. And there aren’t that many things you can do with a business. It’s not as if you’re choosing among 2,000 options. . . .”

“At our 1986 officers’ meeting, which involves the top 100 or so executives at GE, we asked the 14 business leaders to present reports on the competitive dynamics in their businesses. How did we do it? We had them each prepare one-page answers to five questions: What are your market dynamics globally today, and where are they going over the next several years? What actions have your competitors taken in the last three years to upset those global dynamics? What have you done in the last three years to affect those dynamics? What are the most dangerous things your competitor could do in the next three years to upset those dynamics? What are the most effective things you could do to bring your desired impact on those dynamics?”

“Five simple charts. After those initial reviews, which we update regularly, we could assume that everyone at the top know the plays and had the same playbook. It doesn’t take a genius. Fourteen businesses each with a playbook of five charts. So when [vice chairman] Larry Bossidy is with a potential partner in Europe, or I’m with a company in the Far East, we’re always there with a competitive understanding based on our playbooks. We know exactly what makes sense; we don’t need a big staff to do endless analysis. That means we should be able to act with speed.”

“Probably the most important thing we promise our business leaders is fast action. Their job is to create and grow new global businesses. Our job in the executive office is to facilitate, to go out and negotiate a deal, to make the acquisition, or get our businesses the partners they need. When our business leaders call, they don’t expect studies—they expect answers.”

“Take the deal with Thomson, where we swapped our consumer electronics business for their medical equipment business. We were presented with an opportunity, a great solution to a serious strategic problem, and we were able to act quickly. We didn't need to go back to headquarters for a strategic analysis and a bunch of reports. Conceptually, it took us about 30 minutes to decide that the deal made sense and then a meeting of maybe two hours with the Thomson people to work out the basic terms. We signed a letter of intent in five days. We had to close it with the usual legal details, of course, so from beginning to end it took five months. Thomson had the same clear view of where it wanted to go—so it worked perfectly for both sides.”¹⁸

Welch also made some important changes to GE's traditional personnel practices. To accelerate the change process, Welch believed that he had to overhaul the way the company compensated its managers and other employees. He wanted to give more recognition to individual contributors and higher rewards to those who produced superior results. He said:

“A flat reward system is a big anchor to incrementalism. We want to give big rewards to those who do things but without going after the scalps of those who reach for the big win but fail. Punishing failure assures that no one dares.”¹⁹

Breaking with tradition, Welch's redesigned bonus system reached deep into middle management but was much more discriminating. Widespread 10% to 15% bonuses at the top levels were replaced by 30% and 40% bonuses to fewer managers—and more who were awarded no bonus. Similarly, routine 4% to 5% pay increases were replaced by 10% to 15% raises for superstars, and only routine rewards for routine performance. Finally, he gave stock options as rewards to thousands of employees rather than reserving them for only the top echelon as had been the practice historically.

Many GE managers and workers had negative reactions to the changes. Some felt overworked, and some felt that the bonds of loyalty that made GE a great corporation were shattered by Welch's performance orientation. Trading the consumer electronics business for Thomson's medical systems struck many as the ultimate signal that anything was for sale. Welch was well aware of the existence of discontent but spoke passionately of the need for change. In his *Harvard Business Review* interview, he commented:

“Like many other large companies in the United States, Europe, and Japan, GE has had an implicit psychological contract based on perceived lifetime employment. People were rarely dismissed except for cause or severe business downturns, like in aerospace after Vietnam. This produced a paternal, feudal, fuzzy kind of loyalty. You put in your time, worked hard, and the company took care of you for life.”

“That kind of loyalty tends to focus people inward. But given today's environment, people's emotional energy must be focused outward on a competitive world where no business is a safe haven for employment unless it is winning in the marketplace. The psychological contract has to change. People at all levels have to feel the risk-reward tension.”

“My concept of loyalty is not 'giving time' to some corporate entity and, in turn, being shielded and protected from the outside world. Loyalty is an affinity among people who want to grapple with the outside world and win. Their personal values, dreams, and ambitions cause

them to gravitate toward each other and toward a company like GE that gives them the resources and opportunities to flourish.”

“The new psychological contract, if there is such a thing, is that jobs at GE are the best in the world for people who are willing to compete. We have the best training and development resources and an environment committed to providing opportunities for personal and professional growth.”²⁰

Work-Out

One dramatic step in bringing about cultural change at GE was Work-Out, a major effort to spread across the company the sort of rough and tumble approach to discussing and solving problems that Welch thought he experienced when he worked with groups of GE managers attending the general management course at the company's Crotonville management development center.

According to *Fortune*²¹, Work-Out is, essentially, a forum where three things can happen: participants can get a mental workout; they can take unnecessary work out of their jobs; they can work out problems together. Work-Outs started in March 1989.

“Initially, all followed the same format, which Welch likens to a New England town meeting. A group of 40 to 100 people, picked by management from all ranks and several functions, goes to a conference center or hotel. [Dress is informal.] The three-day sessions begin with a talk by the boss, who roughs out an agenda—typically to eliminate unnecessary meetings, forms, approvals, and other scutwork. Then the boss leaves. Aided by the outside facilitator, the group breaks into five or six teams, each to tackle part of the agenda. For a day and a half they go at it, listing complaints, debating solutions, and preparing presentations for the final day.”

“It's the third day that gives Work-Out its special power. The boss, ignorant of what has been going on, comes back and takes a place at the front of the room. Often senior executives come to watch. One by one, team spokesmen rise to make their proposals. By the rules of the game, the boss can make only three responses: he can agree on the spot; he can say no; or he can ask for more information—in which case he must charter a team to get it by an agreed-upon date.”

“I was wringing wet within half an hour,” says Armand Lauzon, the burly, blunt-spoken head of plant services at the GE Aircraft Engines factory in Lynn, Massachusetts. His employees had set up the room so that Lauzon had his back to his boss. “They had 108 proposals; I had about a minute to say yes or no to each one, and I couldn't make eye contact with my boss without turning around, which would show everyone in the room that I was chicken shit.” Ideas ranged from designing a plant-services insignia as a morale booster to building a new tinsmith shop, and Lauzon said yes to all but eight.

“Electrician Vic Slepoy makes no apology for the ordeal Lauzon suffered: ‘When you've been told to shut up for 20 years, and someone tells you to speak up—you're going to let them have it.’ Lauzon is not complaining. Work-Out proposals will save plant services more than \$200,000 in 1991. The biggest hit: a yes to letting Lynn's tin knockers bid against an outside

vendor to build new protective shields for grinding machines, based on a design an hourly worker sketched on a brown paper bag. They brought in the job for \$16,000 versus the vendor's quoted \$96,000."

"These first sessions are really about building trust. Says Welch, 'You have to go through the administrative part of it. If you jump right into complicated issues, no one speaks up, because those ideas are more dangerous.' That's because they cross functional boundaries where people feel their turf is being encroached upon. To make that step, the Work-Out process changes. Later Work-Outs are still 'unnatural acts,' but now they're 'in natural places,' in [one of the Work-Out facilitator's] words—meaning that teams are made up of people who work together day to day or who are involved in different steps of the same process, like packers and shippers or purchasing agents and parts managers. Often they are commissioned at town meetings to gather data on a knotty problem."

"Technician Al Thomas led one such team at GE Plastics' Burkville, Alabama, plant which makes Lexan, a polycarbonate used in auto bumpers and milk bottles. Its mission: to increase the 'first-pass yield'—the percentage of resin that ends up as salable pellets without having to be melted and run again through the factory's extruders. 'There were no home runs,' Thomas says, but the team hit 26 singles. They installed a computer terminal on the extrusion floor to give workers early warning of problems upstream where resins are made. They realigned pipes that pour pellets into cartons to reduce spillage. They vetted the procedures manual; a Post-it note on one page reads, 'This procedure is totally unnecessary and useless.' Hourly workers, not engineers, are writing a new version. The team met daily for three months and spent about \$10,000. When they were done, 37% of the waste was gone. And, says Thomas, it was fun: 'We learned a lot without bosses looking over our shoulders.'"

"Now Work-Outs are enrolling customers and suppliers as well as colleagues. A team in the locomotive paint shop in Erie, Pennsylvania, found that a major cause of delays and rework was inconsistency in the paint because GE was buying it from two suppliers. Team members persuaded their boss, Ralph Schumacher, to use just one, Glyptal Corp., and asked its chemist to join up. Together they wrote standards for color and consistency, eliminating the need for dual inspections, and hooked up a direct phone line between the two shops. A paint job now takes ten shifts, down from eleven or twelve before. GE's Monogram Retailer Credit Services, which manages Montgomery Ward's charge card business, teamed with Ward to tie its cash registers directly to GE's mainframes, cutting the time for opening a new customer account from 30 minutes to 90 seconds."

In his *Harvard Business Review* interview, Welch elaborated:

"Work-Out has a practical and an intellectual goal. The practical objective is to get rid of thousands of bad habits accumulated since the creation of General Electric. How would you like to move from a house after 112 years? Think of what would be in the closets and the attic—those shoes that you'll wear to paint next spring, even though you know you'll never paint again. We've got 112 years of closets and attics in this company. We want to flush them out, to start with a brand new house with empty closets, to begin the whole game again."

"The second thing we want to achieve, the intellectual part, begins by putting the leaders of each business in front of 100 or so of their people, eight to ten times a year, to let them hear what people think about the company, what they like and don't like about their work,

about how they're evaluated, about how they spend their time. Work-Out will expose the leaders to the vibrations of their business—opinions, feelings, emotions, resentments, not abstract theories of organization and management.”

“Ultimately, we're talking about redefining the relationship between boss and subordinate. I want to get to a point where people challenge their bosses every day: ‘Why do you require me to do these wasteful things? Why don't you let me do the things you shouldn't be doing so you can move on and create? That's the job of a leader—to create, not to control. Trust me to do my job, and don't make me waste all my time trying to deal with you on the control issue.’”

“Now, how do you do get people communicating with each other with that much candor? You put them together in a room and make them thrash it out.”²²

“We have to apply the same relentless passion to Work-Out that we did in selling the vision of number one and number two globally. That's why we're pushing it so hard, getting so involved.”²³

Best Practices

Best practices was, according to *Fortune*²⁴, another assault on business-as-usual. Again, the impetus was Welch's pursuit of ideas to increase productivity. It was Welch himself who first voiced what later seemed obvious. Other companies get higher productivity growth than GE. Why not kick their tires?

“The assignment went to the business development staff in Fairfield, which scrutinizes acquisition candidates and thus has wide knowledge of other companies. In the summer of 1988, the group began scouring the business press and canvassing GE executives, looking for companies worth emulating. From an initial list of about 200, they found two dozen that had achieved faster productivity growth than GE and sustained it for at least ten years. Half of the survivors agreed to the proposition GE made: Let us send some people to your shop to learn about your best management ideas; in return, we'll share the study with you and let you ask about our methods. Participants included electronic components maker AMP, Chaparral Steel, Ford, Hewlett-Packard, Xerox, and three Japanese companies. The Project, which GE called Best Practices, took more than a year.”

“Basically, GE's question was, ‘What's the secret of your success?’ Surprise: the answers were remarkably similar. Almost every company emphasized managing processes, not functions; that is, they focused less on the performance of individual departments than on how they work together as products move from one to another. They also outthusted their competitors in introducing new products and treated their suppliers as partners. And they managed inventory so well that they tied up less working capital per dollar of sales than GE.”

“The implications of the Best Practices study were earthshaking. GE realized it was managing and measuring the wrong things. The company was setting goals and keeping score; instead, says business development manager George Zippel, ‘we should have focused more on *how* things got done than on *what* got done.’”

“Best Practices provided an empirical basis for changing what GE manages. The corporate audit staff—[since the 1930s]—GE’s fearsome cadre of traveling checkers—altered its methods. Auditors, youngsters picked for their high potential, used to come from finance backgrounds; now half are operations or information systems experts. Says audit staff head Teresa LeGrand: “When I started ten years ago, the first thing I did was count the \$5,000 in the petty cash box. Today we look at the \$5 million in inventory on the floor, searching for process improvements that will bring it down.”

“Crotonville turned the Best Practices findings into a course, which it gives to a dozen people a month from each of GE’s ten manufacturing businesses. The service businesses, which need to pay special attention to issues like managing information technology, have their own course, based on research at non-manufacturing companies like American Express.”

“Nowhere have GE’s new management techniques come together more impressively than in the appliance business. A year ago senior vice president Gary Rogers toured the Montreal plant of GE Appliances’ Canadian subsidiary, Camco, to see how it had adapted the ideas of a small New Zealand appliance maker, Fisher & Paykel. Camco’s manufacturing head, Serge Huot, had found a way to transfer Fisher & Paykel’s job-shop techniques to the high-volume Canadian factory, automatically speeding operations. The change hadn’t been trouble free—Camco had problems making all models available at all times—but the normally taciturn Rogers was excited.”

“What happened next shows how GE’s new management techniques work. Rogers called a town-meeting Work-Out to introduce the ideas and the vision—which amounts to a build-to-order manufacturing style. For example, building a dishwasher takes just hours, but it takes about 16 weeks for a change in the pattern of consumer demand to affect the product mix at the end of the assembly line in Louisville. The goal: reduce that cycle by 90% while actually increasing availability—the odds that a given model is on hand when a customer orders it. Finance manager David Cote assembled a cross-functional team to install Camco’s system, now called Quick Response. Work-Out teams began sticking process maps on the walls—more than 500 in all. One result among many: workers in the distribution center now get production schedules in a new way that allows them to tell truckers well in advance when their loads will be ready—a simple change that will save almost a day’s time and will cut \$3 million in inventory.”

“More than 200 Louisville managers and employees toured the Montreal operation. Others took a GE jet to Crotonville to take the Best Practices course, including a group with two shop stewards from the refrigerator plant. The trip was meant to show union and management leaders the potential payoff from process-oriented, non-hierarchical cooperation and to help soften a relationship that had become a rigid that’s-not-my-job-description face-off. Another purpose was to study companies—one of them a textile manufacturer—that had mastered high-volume, build-to-order manufacturing.”

“Since implementing Quick Response in January, GE Appliances has cut its 16-week cycle by more than half while increasing product availability six percent. Inventory costs have plunged more than 20%—a major reason the group has weathered the recession with steady profits despite a 5% decrease in volume. The program has cost less than \$3 million, Roger says, and has already returned a hundred times that.”

“That’s not counting the benefits to other GE businesses. Quick Response, the result of a Best Practice from an outside company, has made Appliance Park the hottest destination on GE’s internal Best Practices circuit. Two years ago the business’s combination of low margins,

tough unions, and brutal competition made Louisville the last place an ambitious GE manager wanted to be—an isolation ward,' says one. Now groups from every other GE business have taken up residence there to learn how to adapt the process to their needs."

"The revolution at General Electric is still fragile, and middle management is one of the weaker points. David Genever-Watling, senior vice president of industrial and power systems, says, 'You need unselfish, open-minded executives to run the process,' and they are still a rare breed at GE or anywhere else. . . . The same goes for workers. In Schenectady, New York, union business agent Lou Valenti says, 'I'm behind the process 200%,' and was reelected without opposition last year; in Lynn, workers who went through Work-Out were told by colleagues that it's a ploy to win votes for the new contract—but in July the Lynn local approved a three-year national pact for the first time since 1982."

"Welch can point to results where they will always matter most at GE, in the numbers. Productivity—which GE measures by dividing real revenues (with price increases factored out) by real costs (after discounting for inflation)—will rise 5% in 1991, according to Welch, 'with almost no layoffs and, due to the recession, no increase in volume.' GE expects to get five dollars in sales for every dollar of working capital invested—16.3% more than in 1988, the year before Work-Out and Best Practices began."

"Welch admits that it will take a decade before GE's new culture becomes as hard to change as the one it is supplanting. By then, he says, GE's hierarchies could actually wither away.

Boundary-less Integrated Diversity

In the 1990 GE Annual Report, Welch put forth yet another challenge for his organization, intending to make GE into a truly "boundary-less" company.

"In a boundary-less company, suppliers aren't outsiders. They are drawn closer and become trusted partners in the total business process. Customers' vision of their needs and the company's view become identical, and every effort of every man and woman in the company is focused on satisfying those needs."

"The boundary-less company blurs the divisions between internal functions; it recognizes no distinctions between 'domestic' and 'foreign' operations; and it ignores or erases group labels such as 'management,' 'salaried,' and 'hourly' which get in the way of people working together."

An additional challenge was to link GE's 13 businesses, through what Welch termed "integrated diversity," the ability to transfer the best ideas, most developed knowledge and most valuable people freely and easily across businesses in a boundary-less company. For Welch, the learning associated with the Quick Response project—from the New Zealand supplier, to Canadian subsidiary, to Louisville, to the rest of GE—was an apt illustration of the concept.

Both insiders and outsiders had reservations about how much change these initiatives could achieve and how quickly. Said one senior manager, "Of course Jack has to make it seem achievable—even easy. But it's not. It's one thing to study another company's best practices—it's quite another to transplant that change into a company like GE."²⁵

In his *Harvard Business Review* interview, Welch was asked, "When will we know when these changes have worked?" Welch responded:

“A business magazine recently printed an article about GE that listed our businesses and the fact that we were number one or number two in virtually all of them. That magazine didn't get one complaint from our competitors. Those are the facts. That's what we said we wanted to do, and we've done it.”

“Ten years from now, we want magazines to write about GE as a place where people have the freedom to be creative, a place that brings out the best in everybody. An open, fair place where people have a sense that what they do matters, and where that sense of accomplishment is rewarded in both the pocketbook and the soul. That will be our report card.”²⁶

Endnotes

1. "General Electric: Strategic Position, 1981" (HBS Case No. 381-174), by Professors Francis J. Aguilar and Richard G. Hamermesh. © 1981 by the President and Fellows of Harvard College.
2. Ibid.
3. Richard F. Vancil, *Passing the Baton* (Boston, Mass.: Harvard Business School Press), 1987.
4. This section has been taken from "General Electric: Jack Welch's Second Wave (A)" (HBS Case No. 391-248), by Research Associate Kenton W. Elderkin and Professor Christopher A. Bartlett. © 1981 by the President and Fellows of Harvard College.
5. Stratford Sherman, "The Mind of Jack Welch," *Fortune*, March 27, 1989.
6. Marilyn Harris, et al., "Can Jack Welch Reinvent GE?" *Business Week*, June 30, 1986.
7. "General Electric: 1984" (HBS Case No. 385-315), by Professors Francis J. Aguilar and Richard G. Hamermesh and Research Assistant Caroline Brainard. © 1985 by the President and Fellows of Harvard College.
8. Noel Tichy and Ram Charan, "Speed, Simplicity, Self-Confidence: An Interview with Jack Welch," *Harvard Business Review*, September-October 1989, p. 114.
9. Information in the preceding three paragraphs is drawn from "General Electric: 1984," op. cit.
10. Tichy and Charan, op. cit., p. 112.
11. Ibid., p. 113.
12. Ibid., pp. 113-114.
13. Ibid., p. 116.
14. Anonymous, "GE Chief Hopes to Shape Agile Giant," *Los Angeles Times*, June 1, 1988.
15. Tichy and Charan, op. cit., p. 114.
16. Ibid., p. 115.
17. Ibid., p. 116.
18. Ibid., pp. 115-116.
19. Ibid.
20. Tichy and Charan, op. cit., p. 120.

21. Thomas A. Stewart, "GE Keeps Those Ideas Coming," *Fortune*, August 12, 1991.
22. Tichy and Charan, op. cit., p. 118.
23. *Ibid.*, p. 118.
24. Stewart, op. cit.
25. Elderkin and Bartlett, op. cit.
26. Tichy and Charan, op. cit., p. 120.

Exhibit 1 General Electric's Performance in Three Eras (millions of dollars)

	Borch			Jones			Welch		
	1961	1970	CAGR	1971	1980	CAGR	1981	1992	CAGR
Sales	\$4,666.6	\$8,726.7	7.2%	\$9,557.0	\$24,959.0	11.2%	\$27,240.0	\$57,073.0	7.0%
Operating profit	\$ 431.8	\$ 548.9	2.7%	\$ 737.0	\$ 2,243.0	13.1%	\$ 2,447.0	\$ 6,273.0	9.9%
Net earnings	\$ 238.4	\$ 328.5	3.6%	\$ 510.0	\$ 1,514.0	12.8%	\$ 1,652.0	\$ 4,725.0	10.0%
ROS	5.1%	3.8%		5.3%	6.1%		6.1%	8.4%	
ROE	14.8%	12.6%		17.2%	19.5%		18.1%	20.1%	
Stock market capitalization	\$6,283.7	\$7,026.7	1.2%	\$10,870.5	\$12,173.4	1.3%	\$13,765.4	\$68,594.7	15.7%
S&P 500 Stock Price Index—									
Composite	65.7	83.0	2.6%	97.9	119.4	2.2%	126.4	413.0	11.4%
Employees	279,547	396,583		402,000	366,000		404,000	231,000	
U.S. GNP (\$ billion)	\$ 523.0	\$ 982.0	7.2%	\$ 1,063.0	\$ 2,626.0	10.6%	\$ 2,708.0	\$ 5,951.0	7.4%

Source: GE Annual Reports, Moody's Industrial Yearbook, Survey of Current Business

Exhibit 2 General Electric Company Worldwide Business Profile^a

GE is committed to enhancing the global competitiveness of its 13 key businesses through internal growth, acquisitions, and joint ventures and by eliminating the boundaries that exist among its businesses, customers, suppliers, and employees.

Aerospace A leading U.S. provider of satellites, radar systems, integrated software systems, and other advanced technologies for use in defense, space, and aviation.

Aircraft Engines The world's leading manufacturer of large jet engines for commercial and military aircraft, and the supplier of both large and small engines powering nearly 18,000 aircraft in service today.

Appliances A world leader in major appliances for the home, providing high-quality products under the GE, Monogram, RCA, and Hotpoint brand names.

Capital Services One of the largest and most diversified finance companies in the United States, providing financial products and services tailored to customer needs through GE Capital, Employers Reinsurance, and Kidder, Peabody.

Industrial and Power Systems A global leader in providing utilities and other customers with products that generate and deliver electricity as well as systems that improve air quality.

Lighting Not only the originator of the incandescent lamp but also now the world's biggest supplier of lightbulbs and a global leader in lighting technology.

Medical Systems The global leader in diagnostic imaging systems used by hospitals, clinics, and health care professionals to provide the best health care possible for their patients.

NBC The top-ranked television network in the United States in 1990 in terms of viewer ratings and advertising revenues.

Plastics A world leader in high-performance engineering plastics that can be used in innovative ways to replace metal, glass, and other traditional materials.

Information Services Helping customers worldwide to be more productive through the use of computers, teleprocessing networks, satellites, cellular phones, and other information technologies.

Electrical Distribution and Control An industry leader in products that distribute, control, and protect electrical power and a supplier of factory automation equipment.

Motors The U.S. market leader in energy-efficient motors and one of the largest suppliers of AC and DC electric motors in the world.

Transportation Systems One of the world's largest manufacturers of diesel electric locomotives and a leading supplier of propulsion systems for rapid transit cars and electric wheels for off-highway vehicles.

^aDescription of business position and GE's strategic position as described in GE's 1991 Annual Report.

Exhibit 3 General Electric—Industry Segment Information

	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981
Revenues												
Aerospace	NA	NA	12.5%	12.4%	13.3%	13.0%	11.8%	10.5%	9.1%	7.5%	NA	NA
Aircraft engine	18.3%	19.6%	16.7	16.1	16.1	16.7	16.3	15.8	12.9	12.4	11.5%	10.8%
Appliances	13.2	13.2	12.5	13.2	13.1	11.7	11.8	12.4	12.6	11.1	10.1	11.5
Broadcasting	8.4	7.9	7.2	8.0	9.0	8.0	4.9	NA	NA	NA	NA	NA
Industrial	17.2	17.1	14.8	16.6	17.5	16.4	12.8	13.7	13.6	14.0	17.3	19.7
Materials	12.1	12.0	11.5	11.6	8.8	6.8	6.3	8.0	7.3	7.1	6.6	7.5
Power systems	15.8	15.6	12.5	12.0	11.9	12.3	14.3	18.4	20.0	20.5	22.4	22.1
Technical products and services	11.6	11.8	9.5	10.7	11.0	9.1	8.2	17.1	15.8	13.6	13.0	11.0
Corporate items and eliminations	-0.9	-1.2	-0.6	-3.3	-3.7	-3.2	-2.9	-3.1	-3.5	-2.8	-2.3	-3.0
Total GE	40,254	39,594	44,879	42,650	40,292	40,516	36,728	29,272	28,936	27,681	27,192	27,240
GEFS												
Financing	57.2%	61.4%	60.9%	56.6%	54.7%	42.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Insurance	20.9	18.2	19.3	20.9	23.3	27.0	NA	NA	NA	NA	NA	NA
Securities broker-dealer	21.8	20.4	19.8	22.4	21.7	30.3	NA	NA	NA	NA	NA	NA
Total GEFS	18,440	16,399	14,774	12,945	10,655	8,225	5,814	499	448	397	286	239
Consolidated revenues	57,073	54,629	52,619	55,595	50,947	48,741	42,542	29,772	29,384	28,078	27,478	27,479
Operating Profit												
Aerospace	NA	NA	8.9%	9.5%	11.2%	13.6%	14.1%	10.7%	8.8%	NA	NA	NA
Aircraft engines	23.4%	26.3%	17.1	15.4	17.5	21.2	20.2	16.5	12.2	13.4%	NA	12.1%
Appliances	7.1	8.1	6.3	5.9	1.1	11.0	10.7	0.5	0.4	12.7	NA	0.0
Broadcasting	3.7	3.9	6.5	8.9	9.4	11.3	5.6	16.2	12.6	NA	NA	NA
Industrial	16.3	15.6	11.4	12.5	14.0	6.8	13.3	9.8	10.1	6.3	NA	18.6
Materials	13.6	14.9	13.8	15.5	12.8	11.4	9.8	8.1	11.8	10.9	NA	0.0
Power systems	19.1	17.3	10.0	7.5	8.8	4.5	8.2	18.2	14.5	23.6	NA	16.8
Technical products and services	16.8	13.9	8.1	8.7	8.5	6.2	2.6	0.5	-0.2	12.8	NA	9.4%
Total GE	5,441	5,377	7,385	6,801	5,715	4,440	4,310	4,068	3,779	3,009	NA	2,600
GEFS												
Financing	59.2%	70.0%	90.8%	101.2%	87.5%	111.2%	162.3%	118.2%	125.4%	100.0%	NA	100.0%
Insurance	40.8	30.0	32.8	31.7	32.5	32.0	-216.4	10.6	0.8	NA	NA	NA
Securities broker-dealer	CF	CF	-3.9	-4.7	6.2	-4.0	-136.1	0.0	0.0	NA	NA	NA
Total GEFS	2,307	1,895	1,395	1,138	1,027	572	-62	424	354	290	NA	129
Consolidated operating profit	7,748	7,272	8,780	7,939	6,742	5,012	4,249	4,492	4,133	3,299	NA	2,789
Depreciation												
Aerospace	NA	NA	11.2%	10.0%	11.2%	9.8%	7.6%	NA	NA	NA	NA	NA
Aircraft engines	19.8%	20.6%	19.0	17.9	16.5	15.7	13.3	13.1%	12.4%	11.9%	9.6%	9.8%
Appliances	7.1	7.4	6.5	7.3	6.9	6.0	6.5	6.4	6.8	6.3	7.6	0.0
Broadcasting	5.5	5.9	5.5	5.2	4.6	4.1	1.9	NA	NA	NA	NA	NA
Industrial	19.0	18.3	16.9	16.3	16.4	20.4	13.4	13.3	13.7	14.6	14.4	10.5
Materials	26.5	25.8	21.2	20.9	16.6	13.1	17.9	19.9	18.8	18.7	12.4	0.0
Power systems	10.7	10.1	9.1	8.9	9.1	10.5	11.8	13.5	16.3	16.0	19.2	20.5
Technical products and services	5.0	6.9	6.6	10.1	11.0	11.0	12.7	19.2	15.1	11.4	11.0	11.8
Corporate items and eliminations	6.0	6.2	4.3	3.3	6.7	5.4	3.6	4.0	3.1	4.0	3.1	2.2
Total GE	1,483	1,429	1,534	1,524	1,522	1,544	1,460	1,226	1,100	1,084	964	882
GEFS												
Financing	94.3%	94.8	93.9%	92.8%	93.4%	88.1%	92.3%	NA	NA	NA	NA	NA
Insurance	1.0	0.7	1.1	1.1	0.8	1.1	1.1	NA	NA	NA	NA	NA
Securities broker-dealer	2.5	3.1	3.2	4.4	4.3	7.6	3.6	NA	NA	NA	NA	NA
Total GEFS	1,335	1,225	976	732	744	369	365	NA	NA	NA	NA	NA
Consolidated depreciation	2,818	2,654	2,333	2,256	2,266	1,913	1,460	1,226	1,100	1,084	964	882

Source: General Electric Annual Reports

Exhibit 4 Restructuring at GE, 1981-1993

ACQUISITIONS

- 1981**
 - Calma Company, CAD/CAM supplier
 - Intersil, semi-conductor manufacturer
 - Structural Dynamics Research Co. (48%)
 - 4 niche software companies
 - Air pollution control business from Envirotech
- 1982**
 - 16% share of GEISCO (GE Information Service Co.) owned by Honeywell
 - GEVENCO (GE Venture Capital Co.) invested in 7 new businesses
 - 17.5% of Gearhart Industries
- 1983**
 - AMIC Corp., mortgage insurer
 - Reuter-Stokes, high-tech niche instruments
 - Rail car management company
 - GEVENCO invested in 10 new companies
 - GEVENCO increased investments in 15 companies
- 1984**
 - Employers Reinsurance Corp.
- 1985**
 - RCA
 - Kidder Peabody (80%)
- 1986**
 - Tungram Co. of Hungary, lighting (50%+)
 - FGIC Corp., (remaining 62%)
- 1987**
 - Montgomery Ward Credit Corp.
 - Roper Corp., appliances
 - Borg-Warner chemical business
 - Baltica-Nordisk Insurance of Denmark
- 1988**
 - Financial News Network
 - EMI Thorn, U.K., light source business
 - British Airways engine overhaul facility
 - Chase Manhattan leasing operation
 - Bank of New York
 - Itel Corp.
 - CMV Leasing
- 1989**
 - Kidder Peabody (remaining 20%)
 - MNC Financial leasing operation
 - Burton Group of U.K.
 - Travelers Mortgage Services
 - ELICO Leasing Corp.
 - Repurchased 38 million GE shares
- 1990**
 - Kidder Peabody (remaining 20%)
 - MNC Financial leasing operation
 - Burton Group of U.K.
 - Travelers Mortgage Services
 - ELICO Leasing Corp.
 - Repurchased 38 million GE shares
- 1991**
 - Columbia Home Video IV

Jack Welch takes office as CEO in April, 1981



DIVESTITURES

- 1982**
 - Pathfinder Mines Corp.
 - Central air conditioning business
 - Mining products business
- 1983**
 - Utah International
 - Housewares business sold to Black & Decker
 - 8 radio and 2 TV broadcasting stations
 - Family Financial Services
 - Data Communications Products
 - Trapper Mines
 - 17.5% interest in Gearhart Industries
- 1984**
 - GE Cablevision Corp. merged with United Artists Cablesystem
- 1985**
 - Australian Coal Properties
 - Remainder of GE Cablevision operations
- 1986**
 - Consumer electronics business swapped to Thomson of France
 - NBC radio networks
 - NiCad battery, ballast lighting, nuclear waste and HVDC power transmission businesses
 - Donated David Sarnoff Research Center to SRI
- 1987**
 - RCA Global Communications
 - GE Solid State, semiconductor business
 - Sadelmi-Cogept, foreign construction firm
- 1988**
 - GE Aerospace, GE Government Services, Knolls Atomic Power Labs combined with Martin Marietta
- 1989**
 - GE sold businesses making up 25% of 1980 sales

SUMMARY

1981-85 GE acquired over 300 businesses

1985-90 GE acquired over 70 businesses
GE divested over 200 businesses

1981-90 GE invested over \$17 billion in acquisitions
GE received over \$9 billion from divestitures
GE sold businesses making up 25% of 1980 sales