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From: [redacted]
To: "Jarvis-Shean, Elizabeth" <elizabeth_jarvis-shean@who.eop.gov>, "Jarvis-Shean, Elizabeth" <"/o=eop/ou=exchange administrative group /cn=recipients/cn=elizabethjarvisshean22135451">
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G.E. Goes With What It Knows: Making Stuff

By STEVE LOHR

TO train its future leaders, General Electric has rising young stars study and visit an array of different organizations, from Google to West Point.

What can managers at the 132-year-old industrial giant learn from Google? A corporate mind-set that prizes "constant entrepreneurship," says Jeffrey R. Immelt, G.E.'s chairman and chief executive, during an interview at his corporate headquarters in Fairfield, Conn.

And what wisdom is on tap at the United States Military Academy? "Adaptability" and "resiliency" amid uncertainty, says Mr. Immelt — skills as vital to surviving in business as they are on the battlefield.

Strategies are useful, he says, but only if they can quickly adjust to nasty real-world surprises. "In the words of the great philosopher Mike Tyson," Mr. Immelt says, smiling, "everybody has a plan till they get punched in the mouth."

Perhaps no company outside of the banking sector was hit as hard by the financial crisis as G.E., certainly none that seemed healthy before the economic tailspin. Its big finance arm, GE Capital, long a cash machine that bolstered the mother ship's bottom line, became an albatross, threatening to pull down the entire enterprise. G.E. cut its dividend for the first time since the Great Depression, lost its triple-A credit rating and hastily arranged a $3 billion investment from the billionaire Warren E. Buffett.

Having skirted disaster, G.E. is recovering gradually these days. Its finance unit is on the mend, with the size of its debts and troubled loans trending downward. Mind you, middling recoveries are a relative matter at G.E. After all, the company remains a colossus on track to deliver profits of more than $10 billion on sales of about $150 billion this year. But investors are used to getting more from G.E., which earned $22 billion on revenue of $173 billion in 2007.

So G.E. has revamped its strategy in the wake of the financial crisis. Its heritage of industrial

innovation reaches back to Thomas Edison and the incandescent light bulb, and with that legacy in mind, G.E. is going back to basics. The company, Mr. Immelt insists, must rely more on making physical products and less on financial engineering — a path that, he insists, is also necessary for the American economy as a whole.

Mr. Immelt candidly admits that G.E. was seduced by GE Capital's financial promise — the lure of rapid-fire money-making unencumbered by the long-range planning, costs and headaches that go into producing heavy-duty material goods. Other industrial corporations were enthralled with finance, of course, but none as much as G.E., which became the nation's largest nonbank financial company.

The big buildup of GE Capital occurred during the tenure of Mr. Immelt's famous predecessor, Jack Welch. But while Mr. Immelt, who took over in 2001, spun off the unit's insurance business, he also bulked up on commercial real estate and other loans. In 2004, G.E. even bought a subprime lender in California, WMC Mortgage, which it shed in 2007 for a $1 billion loss.

IN the buoyant years before the credit crisis, the company's finance arm contributed nearly half of G.E.'s overall profits. When Mr. Immelt had qualms about the unit's risks, he sought outside opinions, including ordering up a study by the consulting firm McKinsey & Company in 2007.

Sixty days later, the consulting team, he says, told G.E. that money from nations with a trade surplus, like China, and sovereign wealth funds, among other investors, would provide enough liquidity in the financial system to fuel lending and leverage for the foreseeable future. (McKinsey declined to comment on the study.)

Mr. Immelt and his advisers had plenty of company in missing the gathering storm.

"But clearly," Mr. Immelt concedes, "GE Capital was too big in the context of G.E." Going back to the early 1990s, he explains, anticipated returns — not so much market expertise — guided investment decisions. If a deal looked like a money spinner, he says, it got the nod. "And you don't have to build a factory," he adds.

Today, the financial unit is becoming smaller and focusing on fields where G.E. believes it has a competitive advantage. Those specialty areas include industries in which G.E. has a strong manufacturing presence, like power generation, aviation and health-care equipment, and lending to midsize industrial companies. Unless a deal is in a business where G.E. has distinctive skills, Mr. Immelt says he won't let GE Capital dive in.

"We're not going to do it, whether there are supernormal returns or not," he says.

He's most animated talking about heavyweight products that take patience and piles of cash to develop, weigh tons and last for years — next-generation jet engines, power turbines, locomotives, nuclear plants, water-treatment systems, medical-imaging equipment, solar panels and windmills. Mr. Immelt notes, for example, that the cost of a good-sized solar-panel plant, about $70 million, is more than twice the total investment in Google in the six years before it went public in 2004.

The costs and complexities of such businesses, he adds, make it hard for just any company to

compete. These are markets, he says, that have "big moats. They're tough to get in."

The big-moat businesses can also be quite lucrative. Mr. Immelt points to G.E.'s jet-engine business as an example, saying that it has higher profit margins and returns on capital than the leading banks. "It doesn't happen every quarter or every year," he says. "But over a 10- or 20-year time period, the businesses that are hard to do had the best returns. So the arithmetic works over time."

Technology-based manufacturing of all sorts, Mr. Immelt says, has to be a central part of reinvigorating the economy. In speeches and position papers, Mr. Immelt, a member of the White House's Economic Recovery Advisory Board, has called for doubling manufacturing employment in America, to 20 percent of the work force, which he concedes is an "aspirational" goal.

Making progress, he adds, will require significantly improving the nation's prowess as an exporter. G.E., by the way, happens to be America's second-largest exporter, after Boeing. So Mr. Immelt's views about what changes would benefit the economy would probably help G.E. as well.

"Many bought into the idea that America could go from a technology-based, export-oriented powerhouse to a services-led, consumption-based economy — and somehow still expect to prosper," Mr. Immelt said in a typical speech last year before the Detroit Economic Club. "That idea was flat wrong." He added: "Our economy tilted instead toward the quicker profits of financial services."

Mr. Immelt is backing his words with actions — plans announced over the last 18 months include the creation of more than 4,000 jobs in manufacturing production and research in the United States. They include new factory jobs in Kentucky, Ohio, New York, Alabama and Mississippi, for making products including energy-thrifty washers and dryers, fluorescent light bulbs, sodium batteries, environmental coatings and jet engines. And the company is opening a research center in Michigan for advanced manufacturing technologies.

"The underlying DNA of G.E., going back a century, has been to invest for growth in its technology base," says Noel Tichy, a professor at the University of Michigan business school who once ran G.E.'s management school in Crotonville, N.Y. "So by increasing R.& D. spending and with investments in manufacturing, Jeff Immelt is going 'back to the future' at G.E."

ABOUT 1,000 miles from corporate headquarters, inside a gleaming new plant that is the result of a $100 million, three-year investment, G.E.'s back-to-basics strategy is on display.

The spotless factory, in Batesville, Miss., spans 300,000 square feet — about five football fields — and cranes and bulldozers are already working on a 40,000-square-foot addition. The site makes strong, lightweight composite parts for a new generation of more fuel-efficient jet engines. Initial production began last year. It is an industrial symphony of materials science, high-tech machinery and hand craftsmanship. Computer-controlled machines cut carbon-fiber fabric precisely, but, as if it were in an industrial bakery, the fabric still has to be kneaded into shape and into molds by hand and then cured and baked in giant ovens.

The parts are for new versions of fuel-efficient, quieter engines that will be used in wide-body, long-haul planes like the Boeing 747-8 and the Boeing 787 Dreamliner. Passenger and cargo carriers have 1,300 of these engines on order, and about 80 percent of the production is for export.

For each job at the factory, there are about 30 applicants. The payroll has more than doubled this year, to 220, and is on its way to 450 by 2012. Everyone dresses in blue short-sleeve shirts with a G.E. logo and dark pants. Production is organized around the concept of "high-performance work teams," typically six to 12 workers.

It's a bottom-up approach that shuns hierarchy, and places most of the responsibility for continuous improvement on the teams. An egalitarian ethos is reflected in the job titles. The boss, Jeanne Edwards, is the "plant leader." Line workers are called "production associates." There are no supervisors here, only "leaders" and "coaches." There aren't many of those anyway — all but 29 workers are hourly employees, and production associates start at about $35,000 a year.

The team approach seems to be working. Workers and coaches steadily look for ways to tweak the production process for greater efficiency. Since production began last year, the manufacturing "cycle time" — from cutting carbon-fiber fabric to shipping a finished part — has been reduced by 80 percent, says Antroine Townes, 27, an engineer who guides process-improvement efforts.

To get hired at the Batesville plant, applicants must first take a reading, math and problem-solving test administered by the state employment agency. Candidates who do well are then invited for interviews at the plant and are evaluated in team settings. For example, they are placed in groups of four and told to assemble a Lego helicopter in 15 minutes.

"We want to see how they interact, how they work together," says Terry Collins, the plant's human resources leader. "We don't give a heck about making the helicopter."

The workers hired so far come from varied backgrounds, some from more regimented factory settings. Recruits from traditional factories, says Ms. Edwards, the plant leader, "often tend to have some trouble at first."

Audra Harris, 36, left a job as a machine operator at a commercial roofing manufacturer to come to the G.E. plant. In her first months, Ms. Harris says she initially found the team approach "very challenging," but adapted quickly. "Here you get to make a lot of decisions," she says.

Steve Lentz, 55, who had worked in a printing factory and a bottling factory before joining G.E, says the large investment in a high-tech facility proved that the company had a long-term commitment. "I figured I could wrap up my career here," he says. "At other places, you don't know when the shoe will drop."

Jeffrey Parker, 29, was hired last year. A college graduate, he had never set foot in a manufacturing plant before and had worked as a mortgage broker for Countrywide Financial.

He says his perception of manufacturing work was laborers tethered to machines, doing boring

repetitive tasks in grimy factories. “I had a real rough, blue-collar view of what manufacturing life is like,” he says. “It’s not like that here.”

MR. Immelt says his broadest responsibility at G.E. is to “drive change and develop people.” Any executive who wants to change things, he says, should be guided by “a point of view about what’s going on in the world, and you invest around that point of view.”

One big trend that corporations must embrace, he notes, is the “reordering of the global economy.” In a talk to students at the Stanford business school this year, Mr. Immelt observed that when he was a young executive moving up the ranks at G.E. in the 1980s, developed nations accounted for 80 percent of worldwide economic growth. In the coming decade, he told the students, emerging markets are expected to deliver 80 percent of global growth.

Under Mr. Immelt, G.E. has sharply expanded its overseas sales, to $81 billion last year from $51 billion in 2001. But the company has fallen short of some of its ambitious goals for even higher growth, especially in markets like India and China. To accelerate the growth abroad, Mr. Immelt last month reassigned John G. Rice, a vice chairman, to Hong Kong, where he will oversee sales, marketing and operations outside the United States.

Mr. Immelt has expressed frustration about the difficulties of doing business in China, especially in industries that Beijing has marked as priorities to the nation’s economic development. In a meeting with a group of Italian business executives in Rome in July, he told the group, according to The Financial Times: “I really worry about China. I am not sure that in the end they want any of us to win, or any of us to be successful.”

G.E. has said the remarks were taken out of context and do not represent the company’s view.

And Mr. Immelt now offers a more subtle assessment, saying that China is too large and complex to approach in a cookie-cutter way. “I defy anybody to say they have a one-China strategy,” he says. “I defy anyone.”

In some markets in China, he says, G.E. will be guided solely by whether Chinese rivals are weak or strong. But in industries like solar and wind power that are a focus of Beijing’s five-year economic plans, for example, competitive tactics need to be fine-tuned to adapt to state policy.

“Is it a strategic industry or one that is going to be allowed to commercialize on its own?” Mr. Immelt says.

The approach to China, he says, isn’t so different from the approach used in foreign markets where G.E. has been for decades and prospered. “Is France a completely open market to G.E.? No, of course not,” Mr. Immelt observes. “I think we’re more discerning about China because it’s China, and they’re big and they’re more concerning. But the best global companies are ones that are nuanced.”

Being nuanced in foreign markets, he says, is a skill that “I think we’re pretty good at.”

Mr. Immelt also sees himself as the champion of what he calls “large-scale entrepreneurship” at G.E. By that, he means identifying long-term market shifts — “what’s next,” he says — and then

marshaling the company's research, manufacturing and marketing resources to capitalize on the opportunity. He firmly believes that corporate size, when focused, can be a crucial advantage in the high-tech industrial markets where G.E. competes.

"It's about using the scale of G.E., the majesty of the company, to drive growth and change," he says.

Mr. Immelt's leadership style, according to colleagues and advisers, is a blend of analysis, encouragement, cajoling and sometimes orders by decree. He grew up in Cincinnati, where his father, Joseph, once managed G.E.'s aircraft engine business. He attended Dartmouth College, majored in applied mathematics, was elected president of his fraternity, and played tackle on the football team.

Next came a short stint at Procter & Gamble. Nearby sat another aspiring business leader, Steven A. Ballmer, now chief executive of Microsoft. Mr. Ballmer recalls Mr. Immelt as bright, energetic and engaging company during after-work dinners and bar-hopping. After little contact for years, Mr. Ballmer says the two have "really reconnected" in the last decade after they both became chief executives of leading American corporations, getting together for dinners and rounds of golf, sharing thoughts on leadership and management.

Mr. Ballmer observes that they both took over from revered, successful leaders — Mr. Welch at G.E., and Bill Gates at Microsoft — just after the stock market had peaked and that investors have had lingering doubts about the outlook for both companies, despite solid results in most years.

"Even if you're doing a good job, it doesn't always get reported that way," Mr. Ballmer notes.

After P.& G., Mr. Immelt went to Harvard Business School for an M.B.A. A math whiz, his favorite subject was finance. But when he graduated in 1982, he turned down a job offer from Morgan Stanley, opting for an industrial company — and the one where his father had built a career — over Wall Street. At G.E., he began climbing the ranks.

Relaxed and affable, he is routinely described as "comfortable in his own skin." In his autobiography, Mr. Welch wrote that he selected Mr. Immelt as his successor because "I felt Jeff had the perfect blend of intelligence and edge and epitomized the trait that's so important to me — he was really comfortable in his own skin."

THE G.E. campaign to promote energy-efficient products, begun in 2005 and called ecomagination, is a model of Mr. Immelt's efforts to push large-scale change. It began because he believed that energy efficiency and alternative energy sources were growth markets and that G.E. should capitalize on those trends.

To find new ideas, Mr. Immelt spends much of his time traveling and talking to customers, industry partners, government officials and analysts.

Mr. Immelt, according to Beth Comstock, senior vice president and chief marketing officer at G.E., is constantly scouting for opportunity. "He says, 'Hey, I think there's something here,' " Ms. Comstock says. "Let's see what we can do." When he gets excited, teams are dispatched to

assess markets, products and research and technology trends, typically in a few weeks or less.

When the campaign began, some inside and outside of G.E. dismissed it as a marketing gimmick, and internal employee surveys found little enthusiasm for it. "Ecomagination had a favorability rating of like one when it started, maybe two, me and Beth," Mr. Immelt recalls, amused. "So it was like two against 300,000 the first day."

But momentum built gradually, especially as more G.E. products delivered energy savings and market acceptance. Today, products that qualify for the ecomagination label total $20 billion in sales. One example: G.E. not only sells a hybrid locomotive, but also is building a battery plant in upstate New York that will employ 350 workers. Its production is intended for fuel-efficient locomotives and backup power supplies for data centers and telecommunications switching stations. G.E. hopes to make industrial batteries a $1 billion-a-year business.

"That was totally Jeff Immelt," says Mark Little, who oversees G.E.'s research efforts and led the locomotive effort. "The kinds of things that cut across business units — or have no natural home in a business — are not natural acts for us. And he makes sure they happen."

Occasionally, Mr. Immelt just issues an order. After a trip to Brazil in January, he became convinced that the country was rapidly advancing in technology and that G.E. should place a research lab there. When he returned to the United States, he told Mr. Little, as Mr. Immelt recalls, "Hey dude, you're going to put a global research center in Brazil. Pick a good place." Last month, G.E. announced it would build a research center in Rio de Janeiro.

Leadership by fiat when done in moderation, Mr. Immelt says, can drive change and set a course. "I think that if you run a big company, you've got to four or five times a year, just say, 'Hey team, look, here's where we're going,' " he says. "If you do it 10 times, nobody wants to work for you. If you do it zero times, you have anarchy."

Despite the financial crisis and recession, Mr. Immelt has kept investing for the long haul. Research and development spending increased last year to $3.3 billion, and will be still higher this year. "It would have been easy to say times are tough and we'll pull back on research spending and long-range projects, but he didn't do any of that," says Vijay Govindarajan, a professor at the Tuck School of Business at Dartmouth and a former consultant to G.E. "Jeff Immelt really held onto his technology-led-innovation agenda."

G.E.'s management traditions emphasize patience and its leaders typically have long tenures. Mr. Welch was at the helm for two decades, and Mr. Immelt, 54, has been in charge for nearly a decade. A winter or two of discontent is not cause for dismissal. But the stock price, which closed at $16.78 on Friday, is less than half its level when Mr. Immelt took over in 2001. The stock has barely budged in the last year, as G.E. slowly climbs back from the financial crisis.

There is no indication of a restive board. Yet shareholders are waiting to see better days from the battered stock of G.E., long the bluest of blue chip companies. Under Mr. Immelt, the company has pared its offerings — the plastics business was sold off, the majority stake in NBC Universal is being sold to Comcast, and, of course, GE Capital has been whittled down.

THE near-term prospects for G.E.'s stock seem to depend, if not on financial engineering, then at

least on financial moves that might lift the dividend back toward its pre-crisis levels. The NBC sale to Comcast could bring $8 billion in cash. And negotiating with Mr. Buffett to buy back his $3 billion in preferred stock, which pays a 10 percent dividend, could free up $300 million in yearly fees. Those steps could clear the way to raising the dividend and making the stock fetching again for investors.

"That's the fulcrum for G.E. stock until the economy strengthens and the industrial business really gets rolling again," says Nicholas Heymann, an analyst for Sterne, Agee & Leach.

Mr. Immelt observes that G.E.'s stock, which climbed above $40 in 2007 before the crisis kicked in, has mirrored how investors have viewed financial services over the last decade. That's a perception Mr. Immelt hopes to change as he re-emphasizes G.E.'s manufacturing prowess and reins in the financial operation.

"As we come out of the recession, we're going to see if the moves to streamline the portfolio will pay off," says Steven Winoker, an analyst for Sanford C. Bernstein & Company. "We haven't seen positive results yet."

For his part, Mr. Immelt is an optimist. "We're going to be one of the companies that comes out of the crisis stronger than we went in," he says. "I think that is something that is ultimately going to be good for employees and investors."