

The 2004
Robert S. Hatfield
Fellow in Economic Education

Jeffrey R. Immelt
Chairman
and Chief Executive Officer,
GE

April 15, 2004
Cornell University
Ithaca, New York

“THE INNOVATION IMPERATIVE”

I want to start by saying how much GE values our incredibly strong and productive association with Cornell. In fact, there's probably no institution that we have a more complete relationship than we have at this great institution. Some 513 Cornell grads are GE leaders. Three are officers of the company. Fifty-four students will be joining us this year – and we expect them to be major contributors to the future of our Company. It's a great tradition.

And it's based on the fact that you produce a great product. And you're a great collaborator. In addition to hiring Cornell grads, we have awarded \$3 million in grants over the last 8 years. We especially value our association with both Frank Rhodes and Bob Swieringa. Being a Board member these days is a tough job, and we've really

benefited from their wisdom, focus, and commitment to GE, not to mention they have strengthened our association with Cornell.

It's such a great honor to be associated with people like Mr. Hatfield and Mr. Johnson. It's the twentieth anniversary of the Johnson School and I think in many ways both the company and the family represent many things that are great about capitalism. Mr. Johnson has taken his company from \$171 million in sales to \$6 billion, and at the same time has shown how to be both a *great* Company and a *good* Company, which I think is extremely important. It's my honor to be associated with people like Mr. Johnson, and it's great for me to be here today.

There are two very closely related topics on my mind these days. One is how a company can continue to grow in uncertain times. The other is creating the innovation that enables that growth. I want to touch on both today, starting with a quick look at the world we live in.

The economy is probably better than it's been since the first half of 2000. The consumer remains very strong and people are spending money again. Declining interest rates look like they're going to be heading the other way. Global economies are getting better: Japan is probably having its first growth year in some time, Europe is slowly recovering, and China is a very strong. Our government has basically got every stimulus known to man at work in the economy today. These are the good things.

We still have some issues. There's a bit of inflation creeping in, there is still excess capacity, and we are in a political year. And that means volatility. But in general, this is a good time.

I see five big trends that frame why innovation is so important. They are going to shape the world as we see it, and they shape how I think about GE.

First: we live in a slow growth time. Consumers are spending about as much money as they can, and there is real capacity overhang in most of the world – putting pressure on growth, which puts pressure on jobs.

Number two is the changing face of global competition. Twenty years ago when I joined GE, I went to study Japan – because conventional wisdom said they were going to conquer us. They were going to own us. So we changed and became competitive. Now the competition comes from places like China, India, and Eastern Europe. It's a different competition than anything we've seen. That is because it's based on intellect. American companies want to tap into that intellect. I don't want to debate whether that is a good thing or a bad thing. It's just the world that we live in – a world where competitiveness demands ideas, a world where you go where you have to in order to get the best ideas.

Number three, some of the biggest transformations in the last decade have been distribution based: Wal-Mart, eBay, Dell. Given the new power of distribution, the notion of having to sell undifferentiated products is just brutal. Unless you can differentiate yourself, unless you can present yourself to customers, you can't make margins and you can't make money.

The fourth trend is demographics. Healthcare, for instance, is going to be 20% of the U.S. GDP in the next decade, as an aging population demands more and better care. There are also demographic forces around China, around security, around many other areas. If you want to grow you have to be positioned today in some of the big demographic trends of our time. When I speak to college students I say that no matter what you are going to do, you should learn about two things: healthcare and China. Healthcare because you are going to be paying for mine -- and I want to make sure you really understand it. China because if you are 22 years old and you're going to work for 40 years, by the time you retire, you are going to see China become either the first or second biggest economy in the world.

The fifth thing is that we live in this incredibly volatile world. So I'm constantly thinking about ways to bring cultural and financial stability to our company.

Against that background, my message to you today - whether you are a company, a school, a businessperson, or a student - is that the tide isn't going to raise every boat universally in the next 10, 15 or 20 years as it did in the last decade. Some will win. Some will lose. Some will grow. Some will not. GE plans to win. And we plan to grow.

To do that, I start with the premise that GE has to have a business model that both drives productivity and generates cash that we can reinvest in the future. We've got to be totally consumed with global competitiveness. We've got to be totally focused on making our company more competitive each and every year.

When I think about building the company, five traits are critical: lead in technology, own the customer interface, build a strong global foundation, create multiple revenue streams that give us balance through cycles, and create superior capital efficiency. In executing that strategy, we've made big investments in areas like healthcare and entertainment and we divested some businesses that didn't fit the model. We've increased technology funding to \$5 billion per year from \$3.5 billion three years ago. We've invested broadly in services, in ways to get ourselves on the same side as the customer. We have five thousand more marketing and sales people today than we had three years ago. The nineties was the decade that emphasized finance and financing. This decade is going to emphasize approach to customer, approach to markets, and the ability to grow. We continue to globalize. China is going to invest \$300 billion dollars in infrastructure in the next decade. Right now in China there are 25 airports under construction. There was only one new airport built in the United States in the last 25 years. So focusing on energy and healthcare development in places like China is going to be extremely important. I'll stop with just that flavor for our strategy, because I want to move to what drives and supports it: innovation. Or more specifically, how we are answering the innovation imperative.

The first step is to focus on people and processes. That required some changes. When I became Chairman of GE three years ago, of the 175 officers of the company, seven were engineering leaders and 17 were lawyers. Now – I have nothing against lawyers. But if you want to have an innovative culture, unless your innovation is going to be around suing people, that ratio is not indicative of a company that's going to be well positioned in the future. So we've made tremendous changes in who is running the businesses. We put Scott Donnelly into the research labs. We now have about 15 officers in engineering leadership posts. The people who are going to be running the company in the next 5 to 15 years are going to have commercial and technical backgrounds, because that's how you drive growth.

Turning to process, every year we do a very detailed, very focused, strategic plan. We used to start that plan with financials and end with maybe a brief discussion of products, markets and other areas that are outside the numbers. Now we have two meetings. In the first, we don't talk about a single number. We dissect our competitor's products. We talk about customer base. We talk about technology. We talk about who's winning and who's losing. We talk about what the big trends are in the market. And then, we talk about the numbers --- 30 days later.

If I was ever going to write a book - and if things work out for me, I never will – one of the chapters would be called: “Two million dollars from greatness.” That's because I can't tell you how many leaders – good leaders – have told me that if they only had another two million dollars they could fund this project or that project that would create leadership. I tell them to go back and find a way. And they do.

I now have 40 projects that I call “Imagination Projects.” I track them myself and I personally review them. They connect directly to a front line person. I can sit there and talk about their project, and how we're going to drive it. It has given me a sense of how hard it is to create growth, working through the levels of a big company. And it gives me ideas about what I can do to clear the way.

The second key to the innovation imperative is placing the right bets. Innovation in the past couple decades has mostly been about information technology. We see that making room for other critical areas. One is energy. So we're spending a lot of time and effort on energy and, increasingly, renewable energy – which is going to be critical to both growth and addressing some of the world's most pressing problems. Another area is healthcare: making it more affordable and, most importantly, making it more effective. The 20% that healthcare will make up of the U.S. GDP is not a very effective 20%. So there is going to be lots of research and effort put on making healthcare more effective, and turning personalized medicine into a reality. We've made big investments in molecular medicine and making healthcare more readily available. For obvious reasons, security will be an unbelievably big and fast growing sector of this economy – and we're investing there. We see a coming shortage of water, and we've made huge bets there. We think the most important facilitating technology of the next decade is going to be nanotechnology. It's going to allow us to make products with less weight, less material. It's going to revolutionize the way products are engineered. It's going to mean whole new kinds of products. Obviously, few places are better positioned to help shape and drive that trend than Cornell.

The third part of our innovation strategy is making sure we use our size to our advantage, while making sure it never becomes a disadvantage. We want to be able to take many businesses from a million dollars to a billion dollars – and we want to be better at that than anyone in the world. We use our distribution, our balance sheet, our ability to fund risks and the other benefits of scale and reach to take small ideas to big places. We also make sure that bureaucracy doesn't kill them on the way. One of the key parts of this strategy is to reach outside GE -- through collaborations with universities and start up companies.

We spend a lot of time through our technology and business development resources to broaden the scope of GE to try to come up with new ideas, and take bets and broaden the intellectual power of the company – and we do that on a global basis.

We're able to make those bets for the long term and stick with them. For example, we recently invested \$15 million to buy a company out of bankruptcy in Delaware. I don't know if this technology will pan out. But I do know we have the capability to find out, because \$15 million dollars for a company our size is not that much money and so we can afford to make the investment to see where the technology takes us. We literally have hundreds of these things like that going inside our company on any given day.

The fourth pillar of innovation is the ability to make money. It sounds simple, but in the late 90's, we forgot all about that one. Innovation without a customer is nonsense; it's not even innovation. So we are always thinking about how to put food on the table today and how to build innovation for the long term. We make sure we have a pipeline of products and services that can constantly fund innovation, not just for the short term but also for the long term. For example, we just invested more than \$10 billion dollars in molecular medicine, and we've got a 15-year pipeline of technology that I can look out and see that we are going to be able to bring in.

If I went to my investors and said, "I want you to close your eyes for fifteen years, don't look at any of our numbers and I'll get back to you," I'm not going to be around very long. So we try to fund things both for the short term and the long term to make a difference in the continue pull through.

I think the last thing that's important is developing our people and culture. In the world I described, with the imperatives I described, we've got to rethink what it means to work at a company, and what it means to be a manager. GE is known for professional management. The problem is -- I hate the words "professional management." It sounds bureaucratic. It sounds like people who don't know how to grow anything. It sounds like hired guns who have no real stake in what they're doing. I can be a professional manager, but I don't want to be a professional manager. I don't even want to be around professional managers. My fear is that we have a generation of people growing up in companies, and a generation of people going to schools who think that's what they want to be. I work at GE because I want to grow things, not manage things. I want people to

join GE because they want to grow things. That is the only way we are going to be successful in the future. So we're stirring things up. We're rethinking what our leaders have to be.

I'd like to leave you with some thoughts on what tomorrow's leaders need to be. We need people to live in the world. To know what it feels like to pick up external trends. To be equally comfortable in Chicago, Beijing, and Paris --- everywhere in the world --- and who constantly have their antenna up to see what they can learn.

We need people who are really decisive and determined. We can't have people who wobble, and who aren't willing to stand up and make big bets. Dave Calhoun, who ran our Aircraft Engines business said on September 12th of 2001, "We are going to spend a billion dollars on technology the next two or three years because we are going to come out of this down turn stronger." We did that, and we beat our competition that didn't. We still made our numbers because we took other things off the table, we cut costs elsewhere.

We need people with imagination, who know how to take risks.

We need people who are willing to try new things, whether they're in the academic setting or in a business world.

We need people who know how to be inclusive, who know how to engage everybody around the world, know how to engage suppliers and partners, and know how to engage joint venture people and others

We need people that can learn and teach, whether you are 65 years old or 25 years old. The day you stop learning is the day you cease to become valuable in an innovative culture.

Lastly, and I think most importantly, we need people who can combine passion with process. Schools like Cornell and places like GE are excellent at teaching process. But we both need to do more to give people a sense of how it feels to win and lose -- and to have the passion that makes them want to see their visions become reality more than anybody else.

The growth, innovation and passion to win that I've been talking about is not just important at GE or Cornell. It's important to our society. It's important to societies around the world. No one guarantees GE the future. No one guarantees Cornell the future. No one guarantees anyone the future. You have to fight for it.

The job of Cornell is to create great products -- people who know how to compete, and love to compete. The job of a company like GE is to refine and direct that ability -- and to make sure there is room in their skill and spirit of competitiveness for compliance and compassion. And by that I mean understanding the responsibility to make us a *great* company and a *good* company.

My notions of growth and innovation are not just about GE and they are not just about Cornell. The countries, the towns and the businesses that can grow through innovation and technology are those that are going to be competitive and standing tall in 5, 10, 15, 20 years. For those that fall behind, it's going to be tough getting back in the race, let alone move up to be with the leaders.

This is really an incredible time we live in. I see nothing but opportunity and I see nothing but risks --- both at the same time. You see these incredible sets of decisions to make every day that all have such tremendous consequence. I think it's an incredible amount of fun to make those decisions with confidence, backed by the work of teams of people who work with a love of challenge and change and a passion for what they do.

GE has benefited in so many ways from our Cornell graduates. You are producing employees with a sense of confidence and a passion for learning. I see it in the alumni

that are here today, and I see it in the students we see. It's this confidence, this willingness to compete, and this willingness to play for an unbelievable future that's going to be challenging, fun and rewarding all at the same time

It's a great pleasure for me to be a Hatfield lecturer and Fellow. Thank you very much.