Competing in an Era of Turbulence and Transition*

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I would like to first thank the Institute for Global Economics and President Lee for his leadership and, of course, Dr. SaKong, Chairman of the National Competitiveness Council that President Lee established last year. We were delighted in Washington when we heard about the creation of the National Competitiveness Council. And I read in the paper recently that Dr. SaKong will step down and be in an advisory role. I know he got it started and I look forward to seeing him today to discuss how we can collaborate.

Clearly, this is a time of turbulence. It is a time of transition but, more exciting, this is a time for transformation. As many of you know, Washington is preparing for the inauguration next week of President-elect Obama. My office happens to be very close to where he is staying at the Hay-Adams Hotel, so it is taking us two hours each way to get into the city. But it is really an exciting time, with a lot of energy and a lot of renewal and, of course, that is very much a part of competitiveness and what I am going to talk about.

For those of you who don't know about the Council on Competitiveness, we are a unique organization in the United States, founded about 22 years ago by John Young, who was the then President and CEO of Hewlett-Packard. Our organization is the only group in the United States that brings CEOs from every sector of our economy together with our leading university presidents and labor leaders to understand the drivers and factors influencing U.S. productivity growth, how we maintain a rising standard of living for all our citizens, and how we compete in global markets.

I was in the Reagan White House when the U.S. government's Council on Competitiveness was formed, during a time of great technology and trade competition and conflict between the United States and Japan. That was really the genesis for the creation of our private, non-profit council. We are bipartisan, and we work with both parties on all of our issues. In addition to our flagship

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product—the Competitiveness Index that we have done for many years in collaboration with Michael Porter at Harvard—we have a robust action agenda that we present to political leaders, to governors, and to influence the things that industry, academia, labor, and society at large do to make sure that the next generation of Americans will be prosperous and that we continue to be a global leader in advancing global growth, prosperity, and security.

What I want to do today is focus on the changing competitiveness landscape that we are all dealing with and also focus on what are some of the longer-term challenges and strategies that we need to deploy. Then I will talk a little bit about some of the immediate issues that we are dealing with in this tremendous global financial crisis, which many CEOs in the United States say is the worst they have seen, not only in their lifetime but also perhaps since the depression.

We are in an era of turbulence and transition driven by eight major shifts. Any one of these shifts alone would have had a significant impact. But, taken together, their effects are monumental.

The digital revolution has been an epochal force of change. The share of information and communications technology capital in the world capital stock has risen rapidly over the past 20 years across all global regions. In the United States, from 1986 to 2006, gross private domestic investment in computers and software grew from $7.8 billion to $393 billion. From 1992 through 2006, U.S. industry purchases of IT equipment and software exceeded industry spending on all other types of capital equipment, accounting for 57% of all industry investment in 2006. By 2016, U.S. private investment in computers and software is expected to reach $863 billion.

Now, of course, the impact of this has been the productivity boom we had in the latter part of the 20th century across every sector of our economy, which enabled Wal-Mart and Starbucks to become leading technology companies in addition to deploying their prime businesses. And, of course, Korea also has been a tremendous leader in the IT revolution, starting up the chain from lower value consumer electronics to now having many corporations like Samsung which is leading the frontiers in visualization, broadband, and other digital capabilities.

Rapid advances in computing power, software, and communications have formed a set of powerful complementary innovations—transforming trade, labor markets, and the ways in which production and services are organized. Time and distance are compressing, knowledge is

diffusing rapidly, and global commercial connectedness has increased at a mind-boggling level and pace.

We have seen the impact of IT and communications in the financial crisis. In a positive sense, this led to the integration of global financial markets. But I will also say, being on the technology side, that some of the complexities of obscure financial instruments, and some of the modeling and simulations in the hedge funds perhaps played a negative role in this context.

Today we see that even entrepreneurs and small firms can have a global footprint, and reach globally for employees and customers through e-mail, Internet marketing, Amazon, eBay, and Google. We now have social networking sites. But also there is the dark side of how this inter-global community has an impact on national security.

The second major shift is the rapid advance and power of emerging economies, who but 20 years ago competed on natural resources and low-skill commodity goods, slowly working their way up the economic development curve. But that curve has been shattered.

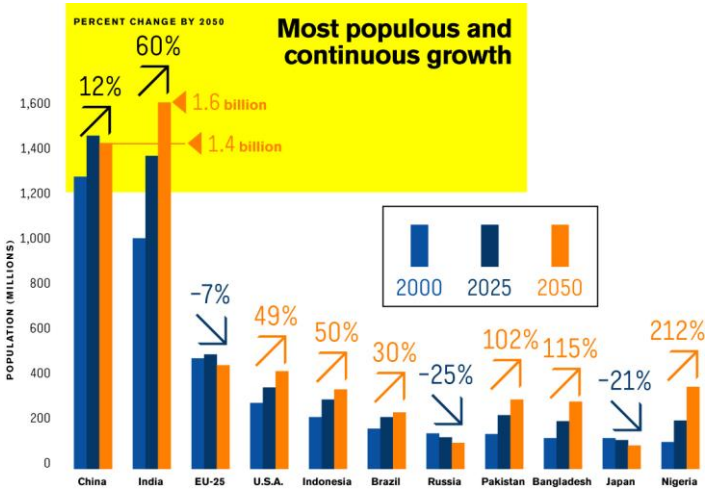
The digital revolution enables access to know-how, modern business tools, and connections to advanced economies and their businesses. Emerging economies can integrate into global value chains. And they are increasingly the favored location for foreign direct investment. Many of these countries seek to follow the path of the world's innovators. They are adopting innovation-based growth strategies, boosting government and private R&D spending, building research parks and regional centers of innovation, and ramping up the production of scientists and engineers.

Of course, Korea has been a phenomenal success in the post-World War II era. I first visited Korea back in 1986 on a trip with then Secretary of Commerce Malcolm Baldrige. I remember meeting with the then leaders of Korea's science and technology enterprise, and what Korea has achieved since that time is very remarkable.

Now, of course, with China, the acceleration is even greater. Its investment in R&D grew from $12 billion to $86 billion, putting China in third place in R&D spending, behind only the United States and Japan.

Demographics are playing a huge role in emerging economies; they are the markets of the future. By 2020, 80% of middle class consumers will live outside the developed world, and these will be prime markets for innovative products and services. These countries are our partners, our competitors, as well as powerful consumers who have the choice to determine what, where, and when they will buy. Interestingly, if you look at Figure 1, the United States has a 49% population growth projection. We are the only advanced country in the world that has positive demographics going forward. Even though we have an aging population, we still have a dynamic youth population, and this is going to be very important for the future.

<Figure 1> Emerging Markets Already Have the Largest,
Fastest Growing Populations



On current growth trajectories, Goldman Sachs estimates that, by 2039, the combined economies of Brazil, Russia, India and China (the BRICs) could be larger than the combined economies of the United States, Japan, the UK, Germany, France, and Italy.

As a result of this rapid advancement, in just one generation, emerging economies' shares of global imports, global exports, and foreign direct investment have nearly doubled. They are having a large impact on global production and trade. Many have already become leading producers and exporters of high technology products. For example, China's domestic high-tech production is twice that of Germany, and nearly the same as Japan's. And you can see on Figure 2 that Korea ranks fifth behind Germany with $167 billion in high-tech exports.

The third major transformation is the emergence of the integrated global enterprise. In the first 20th century model of a global company, headquarters' operations oversaw regional operations. The model evolved as global companies replicated their operations in standalone "mini companies" in places around the world where they sought to do business.

<Figure 2> Emerging Markets Now Number
Among the World's Leading Technology Exporters

Now we have the 21st century globally integrated enterprise. This is a seamless, digitally enabled enterprise of companies, foreign affiliates, suppliers, contractors, and even workers. Their supply chains are global. They are building global talent networks for innovation. They assemble the right combination of knowledge and skills needed for projects and developing new innovations. This is creating multiple locations for and a dispersion of innovation.

This development is changing the nature of trade. 20 years ago, trade was about goods moving physically across national borders. But today's global enterprises increasingly develop products and services, and serve customers through foreign affiliates and foreign business ventures. For example, sales from foreign affiliates of U.S. companies are more than three times greater than U.S. exports of goods and services, which means that their wealth is being created outside of the United States. We do not have data on how much of that wealth actually returns back to the United States. But for us, at the Council, one of our big goals is to ensure that we continue to be the place that attracts this high value investment for high value innovative activity.

In the fourth transformation, a global "trade in tasks" is emerging. Billions of people in emerging economies have entered global commerce. As a result, the effective global labor supply

quadrupled between 1980 and 2005, and there is a growing global talent pool of professional workers. Many educated and skilled people in emerging economies are competing to perform the world's work. So, for the first time in human history, there is global "trade in tasks," and what we call at the Council on Competitiveness, 24-7 global labor arbitrage. This means that, within a 24-hour period or less, a company can determine who is going to do the work and in what part of the world. Every day it is easier to ship work around the globe in bits and bytes. So if work is routine and rule-based, if it can be digitized, there's a low cost source of labor somewhere in the world to compete for that work and those jobs. And quite frankly, for countries like the United States and Korea, trying to compete on routine, standardized work and low labor costs is a downward cycle that takes you nowhere.

So when companies decide to go and invest, or establish advanced activities or any activities, what do they look at? Well they consider the exchange rates. There is the knowledge base, where are the smart people? There are labor rates, availability, and labor flexibility. Labor flexibility is a challenge for Korea, and a huge asset in the United States. We have what we call "labor churn;" while we lose lots of jobs, we are continually creating jobs and this is part of "creative destruction." The regulatory environment is absolutely critical. Companies also look at the quality of local management and tax treatment.

One of the roles I happen to serve—I don't know if it is a reward or punishment—but I have an eight-year term as a Senate-confirmed appointee to the U.S. Internal Revenue Service Oversight Board. And for the first time, our new commissioner is moving out globally to look at tax, to look at how companies are either shirking or not shirking, how to be a positive player in global tax treatment, and how taxes play a role in investment.

Also, companies will consider market proximity and the incentives countries offer to lure global investment and business. And we now have the story of Ireland, which through tax incentives, a high skilled workforce, and positive regulatory environment has transformed itself; now, 1 out of 3 Irish workers are working for advanced U.S. companies. But now their strategy is no longer operative, and Ireland has to come up with a new model and that model has to be innovation.

The recent news we have heard about India, and the illegality and fudging of books that happened at their major IT outsourcer Satyam is going to have a huge impact, not only on

India's brand, but also on outsourcing and who is going to trust financial data in the hands of companies who do not have a high standard of corporate governance or transparency.

In the fifth transformation, we are on the cusp of profound technological development. The digital, biotechnological, and nanotechnology revolutions are rewriting the rules of production and services in digital code, genetic code, and atomic code. These technologies will create profound and disruptive effects, and will alter every industrial sector. And they are the enablers for new business formation, the platforms for new industries and new markets, and they will unleash vast opportunities for innovation.

An example in the energy space, Craig Venter—who is very famous as one of the creators of the whole mapping of the human genome—is now out in Silicon Valley. He has a focus on creating software, and on bio-organisms to create limitless supplies of bio-energy. That is an example of where all these disciplines are fusing together. These are also going to be the way to solve the problems of humankind. So that, for the first time, not in our lives but in the lives of our children, every human being will be able to have food, every human being will be able to have water, every human being will be able to live in a home and be safe and secure.

In the sixth transformation, we see that the nature of innovation and who contributes to innovation are changing. Our concepts of innovation have revolved largely around science and technology embedded in hardware, products, and processes. But, we now see new forms of innovation emerging, such as web-based businesses and hardware tied to services. The iPod, iPhone, and iTunes have revolutionized the distribution of music, broadcasting, and movies. Google is revolutionizing marketing. And the social networking sites and co-creating that goes on in YouTube is revolutionizing media creation and distribution.

I don't want to pick out just one Korean company, but I am very knowledgeable about what Samsung is doing in the frontiers of visualization and visualization technology, and it is very much a part of this new innovation world.

I always like to use Starbucks as an example of 21st century innovation. They sell a commodity product, coffee, but none of their value comes from the coffee. It comes from everything around it—the mystique, the service, and the experience of going to Starbucks. The young people at our Council never hesitate to go out three times a day and spend 5 or 6 dollars a time on these

crazy coffee concoctions. And somehow Starbucks has managed to get the price for this. Whether you are in Beijing, Boston, or Buenos Aires, people are willing to pay for this Starbucks experience. That is a very great example of 21st century innovation.

Now innovation is becoming more multi-disciplinary, occurring at the intersections of disciplines and different spheres of activity. For example, biomaterials meld design, fabrication, and the life sciences. Digital animation fuses the skills of computer graphics specialists with skills of storytellers and actors. I think you all know that Japan is a leader in digital animation with Nintendo and others. I have asked the Japanese, how do you create these animators because these are wild people? And one of the things I have learned is that most of these great animators in Japan are outside of the system; they don't go through the Japanese education system at all. But somehow they have managed to capture that creativity and deploy it in world-class products.

Biomimicry is a new driver for innovation, as biology and nature displace the machine as the model for design. We are seeing developments such as more efficient batteries enabled by viruses; swimsuits that replicate a shark's skin; and strong, lightweight steel sheets inspired by bird bones. One example that I love, is that we have a close relationship with the Brazilian Competitiveness Council. I learned that a team of Brazilian researchers at the University of Sao Paulo has discovered a new insect in the Amazon, a species nobody knew about. This insect is very beautiful, its wings bring together the colors of sapphires, emeralds, and rubies, and it is translucent. And what are they studying from this insect? The frontiers of optical computing. Who would have thought even ten years ago that would have been possible?

Who are the innovators? The expanded scope of innovation, and its increasingly multidisciplinary character have enlarged the skill base needed to develop innovative products and services. No one organization or discipline has all the necessary resources for high value innovation. The skill base must span arts and humanities, social sciences, business, design, marketing, and management, as well as the sciences and engineering.

Professionals must come out of their disciplinary stovepipes. Different disciplines must converge on problems and solutions, learn from each other, and apply models from one field to another. We need engineers that think like artists, and artists that think like engineers. We need to bring the artist to scientific visualization, the materials scientist to fashion, and the cultural

anthropologist to market research. We need platforms, learning and working environments in which different disciplines can come together in a “cauldron of creativity” to fuel an explosion of ideas and innovations.

One of the great examples in the United States of a company that does this and has been unique in what they have produced is Dreamworks Animation. For any of you who have children and have seen the film *Shrek,* in *Shrek 2* they have a trailer at the end of the DVD which shows all these crazy people working together—supercomputing experts, designers, and musicians. They put these people together, and they come up with things like the story of *Shrek 2,* that depends on the use of supercomputers to show the emotion and feelings of human beings.

We see a new kind of economy emerging—a conceptual economy—an arena of ideas, learning, and delivering new kinds of value to the marketplace. Ideas rather than materials or physical brawn have been by far the greatest contributors during the past half-century to U.S. increases in real gross domestic product. Intangible assets are a growing share of corporate value. 30 years ago, about 80% of the market value of the S&P 500 was represented by tangible assets—brick, mortar, equipment, and inventory. Today, we estimate about 80% of the value is represented by intangible assets—patents, trademarks, brands, research, software, and the cultural assets of people and how they can work together.

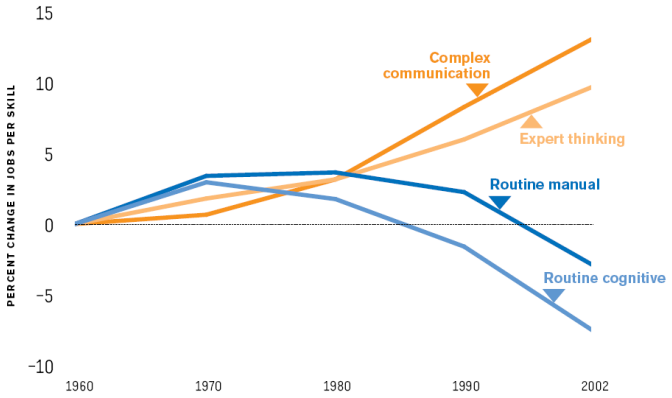
Just this morning, I heard that there is a new initiative in Korea on brands, which I think is very important. I have mentioned what happens when you hurt your brand, and we in the United States have hurt our brand. We have hurt our brand tremendously in how our global financial services have behaved, and that is taking a huge toll on us.

For every company in the world, if they don’t protect their brand, catastrophic effects can happen overnight. Intangible assets now underpin the value of nearly every high-tech company and industry, and many consumer product companies. Look at what happened to China’s brands in terms of quality. Everybody now is very scared of buying Chinese toys. We found out in the United States that Mars chocolate company was using Chinese powdered milk in their products. It had a huge negative impact. Mars had to do a whole new marketing campaign. So intangible assets, and the integrity of the supply chain and your product—you can’t pay enough attention to it.

Success—for countries, companies, and workers—will depend on their ability to work with intangible knowledge and idea-based assets, and the technologies and management systems used to create value from them.

Let's look at something about the conceptual economy. In the advanced economies, jobs that involve routine manual and routine cognitive tasks have declined. If you look at Figure 3, you see how routine cognitive and routine manual are going below the zero line, while expert thinking, complex communication, and how you fuse those are the skills of the future.

<Figure 3> Conceptual Economy



Lower skilled, routine manufacturing jobs have been lost to both imports from developing countries and to automation. And, today, many service industries use automation to do what people used to do. Of course, with higher order skills rising in value, the jobs we ought to be working on and training our young people for are: those that require complex communications—such as interacting with people to get information, explain it, or persuade others of its implications for action; and jobs that depend on expert thinking—solving problems for which there is no rule-based solution, and complex work that varies case-by-case. So far, machines aren't very good at doing these tasks, although that is the new frontier of research, how to bring intelligence and logic into the world of machines.

How do we prepare people for these jobs that require conceptual skills? I think this is an important concept. We are transitioning from an age in which physical resources were the main factors of production, to an age in which ideas, imagination, and creativity are the most important factors of production. We are transitioning from the brute-force economy to the brain-force economy. In the United States and seen in last year's election campaign, the fallout from

this transition is a major tension cutting through society and our political narrative—reflected in the discourse on individual economic security, free trade, the decline of manufacturing, education, jobs, income disparity, immigration, and off-shoring.

How do you compete in this kind of economy? The advanced nations cannot keep or replicate the advantages of emerging economies. We can't create more scientists and engineers than China or India. We cannot compete on low wages, commodity products, standard services, and routine technology development. Excellence in science and technology alone will not ensure success, because many nations are building-up their own assets. Because information and technology are increasingly commodities in today's world, rewards do not necessarily go to those who have a great deal of these things. Instead, rewards go to those who know what to do with knowledge, information, and technology once they get it. It is innovation and ideas that matter most and how you use that. For example, I like to look back at the time of the Soviet Union. I did a lot of work with the former Soviet Union when I was in the White House Science Office. They had more scientists and engineers, and very good ones, than any other country in the world. Did they create a competitive economy out of it? No.

The advanced nations have an "Innovation Imperative." They must reorganize around a new Age of Innovation, and become "Creation Nations." Three platforms will enable a high-performance innovation eco-system.

Talent is at the top of this list. In addition to scientists and engineers, we need a whole range of imaginative, creative, and skilled people to turn ideas, new knowledge, and technology into innovations. We need high skills and ability to change across the workforce broadly. And we need to foster that cauldron of creativity to produce an explosion of ideas that don't just sit on the shelf but get turned into products, services, and value.

In investment, we need to invest in leading edge R&D, so new knowledge, ideas, and technological advancements start within our borders. And we need to ensure that businesses and entrepreneurs have the capital they need to convert new knowledge, ideas, and technology into products, services, new businesses, and jobs. This is, of course, a big problem right now. I was just reading on the plane about the crisis in the venture capital world in Silicon Valley. We see it in the debt financial world. And we are going to have to get this financial capital issue solved in the next few years.

We need infrastructure, such as broadband access, so people can connect with business, market, job, education, and training opportunities that are digitally accessible. Korea has done a fantastic job with broadband and your digital infrastructure for all of your citizens.

We need policies and regulations that fuel, rather than impede, innovation. I know that is a big theme of your National Competitiveness Council, innovation-friendly regulation as opposed to innovation-stifling and hindering regulation.

The final shift I will describe is the need for international cooperation to solve global grand challenges such as energy, the environment, food and water shortages, pandemics, and security threats—from nuclear proliferation and terrorism, to long-standing rivalries in parts of the world such as the Middle East. I would also add to that list the global challenges of the world's capital system and global challenges around trade, market access, and liberalization. All of these issues transcend national borders, and all are linked to national and individual prosperity and security. One needs to look no further than the Wall Street crisis, and how that replicated very quickly into the international arena and threatened the stability of the world financial system.

One area I want to mention is the energy security and sustainability challenge. We are at a unique point in human history, where we are looking at the transition from the fossil-fuel world to the new non-fossil, renewable fuel world of the future. For every nation, reliable access to affordable energy is a basic need for economic growth, development, and improved standards of living. But the dynamics of energy supply and demand are changing—dramatically—and neither an affordable nor a reliable supply of energy is a given for any country.

Let's first explore the demand for energy. Global energy demand is soaring, projected to increase 45% by 2030. Eighty-seven percent of this increase will come from non-OECD countries. Each year, for the past few years, China has added 60,000 to 90,000 megawatts of electrical generating capacity—roughly the equivalent of the throughput of the entire electrical grid of England. Transportation accounts for three-quarters of the projected increase in global oil demand, driven by growth of the car fleet, from an estimated 650 million vehicles in 2005 to about 1.4 billion by 2030.

On the supply side, tenuous access to oil and natural gas means energy could be very expensive, not to mention the fact that so many of the oil exporting nations are hostile to democracies around the world.

It is interesting that, last year, Petrobras in Brazil found one of the greatest deep oil supplies in the world. There is a great debate going on now in Brazil about whether they are going to exploit that just internally, or open it up to international investment. On a side note, when Chevron made a huge deep oil find in the Gulf of Mexico, the only reason they were able to find it and take the risk to drill was that they had modeled and simulated that using supercomputers.

We also have the environmental challenge, and I think we are all very much aware that this is a huge issue that has risen to the top of the global agenda. It is very much part of the Obama Administration's agenda.

We could see a 45% increase in greenhouse gas emissions by 2030, and 90% of this is projected to come from non-OECD countries. There is the potential for a doubling of emissions by the end of the century.

So, when we look at the upcoming post-Kyoto talks in Copenhagen, what is going to be the role of China and India? They have to be part of the solution.

I have some data on carbon emissions. For example, in 2005, carbon emissions in the OECD and non-OECD areas were about the same—14 billion metric tons. But, the U.S. Department of Energy projects that, by 2030, non-OECD countries could be emitting twice that—27 billion metric tons compared to 16 billion tons in the OECD.

We have a double dilemma on our hands: we must match energy supply and demand and, at the same time, cut greenhouse gas emissions substantially, perhaps as much as two-thirds or more. How big is that challenge? One model that explored a potential global energy system that could stabilize the concentration of CO2 by the end of the century offers a sobering perspective on the scale of the challenge. That model required deploying thousands of 1,000-megawatt nuclear power plants, and millions of wind turbines worldwide. The largest single crop covering the surface of the planet was bio-energy plantations.

Let's look at the energy and environmental challenges from the competitiveness viewpoint. There is no question that this is a huge trade and competitiveness issue. In the United States, in 2007, energy-related imports accounted for 36% of the U.S. trade deficit, up from one-fifth in less than two years. We heard already about the impact for Korea of being so dependent completely on imports. During January through April 2008, energy-related imports accounted for 47% of the U.S. trade deficit.

Notwithstanding the July-November collapse in the price of oil, U.S. dependency on foreign oil results in a tremendous transfer of wealth outside of the United States to many countries that are hostile to us.

Higher energy costs impact a wide range of business operations. Rising energy costs are increasing the costs of moving goods. This is changing the calculus of production slicing and diffuse global supply chains—leading to rearrangement of production among industries and countries. One good thing is that we are seeing a lot of manufacturers coming back to the United States because of energy. Proctor and Gamble, for the first time, is putting one of its most advanced manufacturing plants in the United States, building that infrastructure because of energy. Energy scarcity has also become a new driver in geopolitics.

The current trajectory of global energy trends is unsustainable—environmentally, economically, and socially. Energy security and sustainability are now first-tier economic, national security, and competitiveness concerns.

These challenges have created a perfect storm for innovation. The International Energy Agency estimates that, to reduce carbon emissions by 50%, the global economy would need to invest $45 trillion in alternative energy technologies by 2050. That's a lot of money to be sure. But, this level of investment could drive a new global energy revolution, leading to a complete transformation in the way we produce and use energy—if we do it right. We can move to a new era of technological advances, market opportunity, industrial transformation—and innovation of all kinds and at every scale. We can create a whole new industry for manufacturing clean, green power systems, appliances, homes, and cars.

We know that the clean energy world is projected to be a $1 trillion dollar market by 2030. The private sector in the United States, Korea, and all over the world are already making huge

investments. In 2007, new global investments in clean energy totaled $148 billion, 60% higher than in 2006. U.S.-based venture capital investments have quadrupled since 2000, and are up 70% over 2006-2007. At $2.7 billion, almost one in ten U.S. venture capital dollars now goes to clean energy.

In the United States, the U.S. government plans to invest more than $3 billion in 2009 in fundamental science, and technology development for alternative energies, advanced vehicles, clean coal, and nuclear energy. These U.S. government energy investments have increased 80% since 2006.

As a result of all of this public and private investment, we are already seeing: an expanded portfolio of energy resources such as solar, hydrogen, and biomass; new energy technologies such as hybrid vehicles and fuel cells; and new industries such as bio-plastics and agro-energy biotechnology. Dupont is already doing bio-fabrication, moving away from petrochemicals as the core feedstock for their manufacturing.

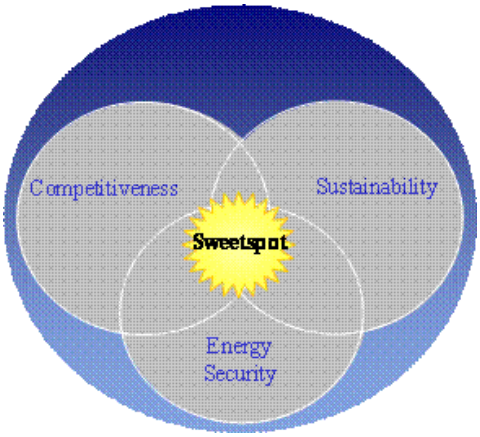
Also, we have to address the energy and environmental challenges in ways that will promote economic growth and poverty reduction in the emerging economies.

I want to mention that it is critical we get the U.S.-Korea FTA ratified in both countries. If we allow protectionism, shut the doors, and do not allow access to and deployment of these new clean energy technologies, we will cause great problems for the global economy and its recovery, and we will significantly retard the movement to the true 21st century world economy.

The Council on Competitiveness launched an important initiative two years ago—the Energy Security, Innovation, and Sustainability Initiative—chaired by the CEO of Caterpillar Jim Owens, the President of Rensselaer Dr. Shirley Ann Jackson, and the head of the Utilities Workers Union. We are making the business case for energy security and competitiveness. What are the drivers of private investment? What is the business case for changing energy usage? How can companies integrate energy and carbon management into their business strategy for competitive advantage? And what is the policy and regulatory framework needed to support energy investment and innovation?

We are focused on the link between energy security and U.S. competitiveness, and we are aiming for the sweet spot illustrated here in Figure 4.

<Figure 4> Driving Private Sector Demand for Sustainable Energy Solutions



So what did we do over the last year? We created a 100-Day Action Plan (it is on our website) released in September for the new Administration. We did not know who would win the election, but we are asking policymakers to have a very aggressive energy agenda going forward. This includes setting the global bar for energy efficiency, ensuring access to clean energy, jumpstarting energy infrastructure, supporting energy entrepreneurship, mobilizing a world-class energy workforce, and clearing obstacles to a national transmission superhighway.

The U.S. government has purchasing power, so one of the first things we are asking the new U.S. President to do is require that government purchases lead to energy efficient goods, services and facilities; green power; and advanced vehicles. We are asking that current tax policies—which inhibit the turnover of old, less efficient capital stock—be changed. We need a new vehicle for accessing debt capital, so we proposed the creation of a $200 billion clean technology bank. I was very excited on Sunday to see in *The Washington Post* that the Transition Team for President-elect Obama adopted our clean technology bank proposal, not at the $200 billion level investment, much more modest than that, but it is a major first step.

We recognize that, without major investment in the grid, renewable energy cannot be delivered to consumers. We must knit together the patchwork of regulations and oversight into a seamless electric power highway, with on and off ramps for all energy sources—just as we did when we created our highway system in the 1950s and 1960s.

In November, we issued our new Competitiveness Agenda for the new President, and it has some very exciting components. Under talent, it has a CompetePass. This is a very exciting new initiative in which our companies say what skills they want and put resources in for training in partnership with the government, and then any American worker who signs up for this will be guaranteed a job. We also want to ensure that our math, sciences, and R&D in our schools are aligned with 21st century challenges.

Under investment, we want to double our investment in R&D. Our current corporate tax rate is higher than in many other countries and this is not good for our competitiveness, so we want to cut it to 25%. We also want to make our R&D tax credit permanent.

On infrastructure, a very creative idea from the Council on Competitiveness is the CompeteAmerica Savings Bond to stimulate personal savings and fund projects to build next generation infrastructure in the United States. When I was a child and when I was in the government, we always deducted a part of our salary for Triple-E savings bonds, but people don't do that anymore. Our proposal is to have tax-free compete bonds that every American can invest in, and the proceeds be used to invest in the infrastructure we need for the future. Also, we must reassert leadership in global trade and development. This includes reigniting multilateral trade negotiations, and pursuing bilateral trade talks and agreements.

Last week, Charles Holliday—Chairman and CEO of Dupont, and Chairman of the Council on Competitiveness—and I went to see the leaders in our Senate and House of Representatives about our new initiative called "Rebound," a short-term proposal for stimulating our economy. Our CEOs have said that they are sitting on a lot of capital in cash. How can we unlock that capital to get the economy going? One thing we can do is change our depreciation schedules; instead of depreciating capital stock over a period of three to five years, allow companies to do that immediately. Other steps we can take are offer American consumers tax breaks if they buy energy efficient products, and we can invest in the next generation of infrastructure.

Let me conclude by saying that, as we go forward on our energy initiative, we want to include our global partners. In September, we are going to convene a National Summit, a National Day. I would like to formally invite Korean CEOs as well as Korean government leaders to participate with us. We are very excited to be able to take some competitive recommendations to

Copenhagen, and it is very important that business interests be represented there. And we are just very delighted that the governments of Denmark and Sweden have turned to the U.S. Council to be a partner in this. I will be working with my Korean partners here, so that you will be with us as we go forward on that. I also would like to say that, as the oldest competitiveness council in the world, the U.S. Competitiveness Council is in the process of putting together a global network of competitiveness councils from around the world. We are going to be convening a meeting of that network next year. Korea, again with your competitiveness council, will very much be part of the inner circle of this. We want to work very closely on this, as we do with our partners in Brazil, Mexico, in the EU as well as in China and India.

My final remark is that we want to look at competitiveness in a world of prosperity and growth, not in a world of scarcity and shrinking back. I am an archaeologist, and always look at the continuum of human civilization and progress. I specialize in the Bronze Age of the Mycenaean and Minoan Civilizations of the Greek World, and I look at what these great civilizations had that made them great, that made them game changers. They were all innovators. They created science and technology. They were also living on the cutting edge of art, architecture, and philosophy. They were fusers of knowledge, they were cauldrons of creativity, and they were crossroads of culture. They attracted the best and brightest to come and live. Your great civilization of the Shilla is a model of that. So let's all team together to look at the world as one of growth, prosperity, and opportunity, and come together to make this next generation the best in human kind. Thank you.

Questions & Answers

Q Thank you for your insightful presentation. I had an impression that your presentation is general advice for the whole world. I have one question, what is your advice to the outgoing Bush Administration, what will be your advice to the incoming Obama Administration and, in addition, what is your advice to the Korean government?

A We are very fortunate that, on competitiveness issues, there is a very broad bipartisan support for a lot of what we are talking about. When the Council on Competitiveness did our Innovation Summit back in 2004—which was chaired by the CEO of IBM Sam Palmisano, the

President of Georgia Tech, and other great leaders—our agenda called Innovative America became the baseline for the National Academy of Sciences to do some recommendations. And what was very exciting was that the Bush Administration embraced that agenda, as did the Democratic and Republican leaders of Congress, and legislation was passed, the America COMPETES Act. It is not yet fully funded. But there is a lot of consensus on that. The area where there is difference is on tax policy, and that is a big issue.

We remember in the campaign that Obama was very much against any breaks for corporate America, and was projecting a lot of tax increases. Now, with the global financial crisis, we are seeing projected tax cuts. But I think that the big differences are on the tax and regulatory issues.

Another area, and the one negative development during our campaign, was the very bad talk about trade. And I will say this again, as a historian, as an archaeologist, there is no great civilization in history, ever, that has looked inwards and shut its doors. They have all been traders that have looked out. And for the United States to not see its role as leading and shaping the global economy through increased trade is very shortsighted and, quite frankly, goes against the facts on global prosperity and everyone's interest. I will give this example: why in the United States should we be concerned about roses coming into our country from Colombia? They are great. Why are we worried? That does not detract from our prosperity, but builds up global prosperity through trade. I think the new Administration, with the appointments they have made which have been very good, will come back to the middle on that. There may be some adjustment, but we will see the revitalization of that in our leadership. I am very hopeful on that.

The other area that will be a big departure is linking the energy transformation with the environment and climate change. The appointee for the new Secretary of Energy—Dr. Stephen Chu, a Nobel Prize Winner—has been on the Steering Committee for the Council's energy project. We are very pleased he announced that on his official biography. John Holdren, the new science advisor, has been very active with us. Governor Napolitano—who is the new Secretary-designate for Homeland Security—created her whole initiative as head of the National Governors Association around regional innovation, and came to the Council for help in designing it. So I think we are going to see a lot of great continuity on competitiveness, but there will be change on energy and environmental issues and moving aggressively out on that.

Q Thank you, Dr. Wince-Smith. You have given us a lot, perhaps years of work of the Council through this morning's presentation. Particularly, your coverage in the latter part of the lecture about energy security struck a cord on this government's so-called "Green Growth" Strategy. And I think there is a lot from our perspective.

My first question is, you have introduced a new word, "conceptual economy," is that conceptually different from what now passes as a "knowledge-based economy?" And my second question is I think President-elect Obama revealed during his election campaign some misunderstandings about the impact of the Korea-U.S. FTA, as well as the problems the U.S. auto industry faces. Actually, one impact of the Korea-U.S. FTA was to help alleviate the problems that the U.S. auto industry is suffering from. My question is what do you think should happen to the U.S. auto industry and what will happen to the U.S. auto industry?

A Well, first, on a "conceptual economy." I came up with that. I don't know if it will have any attraction, but I think that conceptual is a very powerful word that takes you places. But knowledge, once we get it, we have it, but then we have to use it. What I am trying to convey is that knowledge moves so quickly all over the world, everybody has it almost instantaneously. That is not a bad thing, that is a good thing. We want to have a baseline of knowledge. We want people to know all these things. But it is what you do with them, and that is where you have to conceive of things, look at things from different perspectives, and be creative. Now, you can be very creative. But, if you don't have the infrastructure and platform to do something with it, then they are just ideas. So that is just the thinking behind the conceptual economy.

Now on the auto industry, that is a really long story. I am not an expert on the auto industry but, in their relationships with organized labor during the flush years, they would just throw them red meat, whatever they wanted. And the health care packages are unbelievable. If you are a retired autoworker and you go in for a little sneeze, it is costing them tremendously. The data is all there on how much that is costing them, compared to the Japanese and other automakers.
The other thing is they have spent a lot of time fighting against emission standards they didn't like, and they rode a long time on the SUVs and big cars people wanted. When I was in the Commerce Department during the first Bush Administration, I remember going to see one of the

first prototype electric cars and driving it, and they gave that up. They didn't have the long-term vision of where the future is going to be.

The irony is, do you know who makes all those flex-fuel engines and who is the biggest market for General Motors, where all the profits are coming from? Brazil. They make all the engines and everything that enables bio-fuel transportation systems. They didn't make them in the United States.

I don't know what is going to happen going forward. But we cannot, for political reasons, see that industry just totally go away; it is just too important for the economy. I think this bailout, or whatever you want to call it, had to be done. And given the amount of money we have done on the financial side, this is a small amount of money. I am not an expert on how the Korean component of this fits in. But the extent to which it does to make the U.S. auto industry competitive, I hope that the FTA gets ratified between our two countries.

Q I understand that the U.S. has made great efforts to promote the use of renewable energy. Could you explain in more detail which sector your government will focus on out of several sectors such as bio-fuel, solar, wind power, etc? And what kind of support will your government provide to the private sector in the renewable energy sector?

A I think the important point to leave you all with is that no one believes there is one single source of renewable energy that will solve the problem. There is no single bullet. We need to exploit and use all sources of energy in a way that is environmentally correct and reduces the carbon footprint. To give you an example, the United States is the Saudi Arabia of coal. We have so much good coal. So does that mean we are not going to use coal anymore? No. What it means is that we have to develop and deploy systems for carbon capture and sequestration, and produce energy from coal in a way that does not have detrimental or harmful effects on the carbon footprint. And there is a lot of research on how to do that.

On nuclear, there is clearly a reassessment in the United States and in Europe on nuclear power. And, quite frankly, in our national laboratories we have the technology now for how to deal with the waste and storage, and the actual conversion of this waste into energy. This issue is very politically driven, not scientifically driven. And I think that, with the new Science Adviser

and the new Energy Secretary being experts, we are going to get through that on the nuclear side.

On the solar and wind side, you have to have the storage capability and get it on the grid. So that is another innovation frontier; you need a seamless ability to deploy this energy. I think what you will see on the R&D side is a lot of focus on storage and batteries, as well as transmission and getting a national transmission system that is not cut up by each one of the states. That will be sensitive politically because we have this State's Rights issue. But when you look back, and when I was a child, we built highways that went across the states. You didn't come to the Ohio-Indiana border and then have a whole new highway. So we have got to do that with energy too.

On bio-fuels, corn-based bio-fuel is not really the path for the future. Cellulosic, algae, all of those things are the real frontiers of bio-fuels. And I think we will see economics driving that, as well as the impact on food supplies.

Q Thank you for your insightful presentation this morning. The Obama Administration, as well as the Lee Myung-Bak Administration, is promoting a "Green Growth" strategy. Do you recommend a carbon tax or cap and trade scheme, because we are talking about a "Green Growth" strategy but we are more or less silent in this general scheme? What would be your recommendations?

A That is a hard question, so I would have to answer this personally and not represent a formal position of the U.S. Council on Competitiveness. So this is my person view, and the view and analysis that most economists will say and believe. In terms of transparency and efficiency, not favoring any one sector of the economy, and having the predictability of putting a transparent price on carbon, it should be a tax. On the cap and trade system, we have done a lot of studies on how it is working in Europe and there are a lot of problems with it. Now, it is fashionable to do cap and trade. But, I think if you still have not made that decision here in Korea, you ought to think carefully on that. In a lot of times in cap and trade, you are just moving things around a lot. There are some exchanges and things that are making a lot of money from that. But we will not make a specific recommendation for the tax or the carbon trade. Rather, there is a need for having a transparent price on carbon that is predictable around which companies can then plan and make their investments.

One thing I will say on the European experience, and I have asked some European ministers about this and without mentioning any countries, they have lost a lot of significant advanced manufacturing just over cap and trade. In this crisis with all the job loss, how you handle it is a very serious issue.

Q My question is about the evaluation of national competitiveness. Annually, some institutes like the World Economic Forum and IMD publish some rankings of national competitiveness. Not only Korean journalist, but also Korean policy makers are sensitive over the ranking of Korea. Does your Council or others take seriously these rankings of competitiveness, or does your Council analyze the status of the national competitiveness of other countries?

A In our Competitiveness Index that has focused on measuring U.S. performance, obviously we have to bring in the whole global environment to benchmark ourselves. One of the things we are doing, and this is something we would like to have Korean partners with us in a leadership role, we are just beginning to put together the process for our next index. It takes us usually two to three years to do this because it is hard. But what we want to do, and this is the exciting part for economists and researchers, we want to develop with our global partners a whole new set of metrics on how you understand and measure competitiveness, not just the traditional input metrics such as how many scientists and engineers you have, how many patents, etc., but also really look at how we begin to understand these intangible assets.

I will give you Singapore as an example. Singapore always gets high ratings in things and it's great. Singapore is a city-state. I have tremendous admiration for what they have done, but what are the great Singapore brands? What are they apart from Singapore Airlines? I heard a brilliant person say that Singapore is a very important piece in global production slicing but, in terms of what we are dealing with here, is Singapore really going to surpass the United States or Korea in terms of overall competitiveness? I don't think so. Finland is, Finland will surpass the United States. And yet Finland gets a lower ranking. I don't want to say that these rankings are spurious because there are many good things about them. But we need to look at them in a different way.

The United States always gets a bad ranking on the role of women because we don't give as much maternity leave as the Europeans do. Well I am going to brag here, but in my generation,

there is no country in the world that has women who are at the highest-level of every sector, in government, in industry, and we have more women university presidents. But we get a low ranking for the role of women in the United States because we don't give enough maternity leave.

Also, culture is so important. How do we capture some of those things about culture?

Q To what extent will President-elect Obama seek to build a world without violence, terror, and war in the coming years in your view?

A Well, he was having some security briefings when he was a candidate. But once he became President-elect, there is a whole different world in terms of access to information about what is going on in the world. I think his election and what it means for our country, to have an African-American become President with his youth and his energy is very symbolic, not just for our country but for the world. It is very significant. I do not think that there will be a drastic change in national security policy as some might want. I think that his appointments, choosing as national security adviser General Jim Jones—who is one of our great military leaders and former head of NATO—is very significant, as is choosing Admiral Blair of the same stature and keeping Secretary Gates. It does not mean there is not going to be a change from what happened in the Bush Administration, but there is going to be continuity. And, at the end of the day, the ultimate responsibility of a President is to keep a nation safe. That is at the top of his agenda. But reaching out, negotiating, and communicating in a different way with his personality will be part of that. So there will be change, but some continuity.