Villach Economic Conference
Chief Executive Officer of Siemens AG
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Check against delivery!
I’ve always known that Siemens plays an important role in Austria. But I didn’t know exactly how deep our company’s roots go in Austria until I was enlightened on this score by the CEO of our Regional Company, Ms. Brigitte Ederer.

**Siemens is the most popular company in Austria**

I had only been in my new post for a few weeks when I visited the Regional Company in Vienna. In addition to many other things we discussed, Ms. Ederer told me about the results of a study which indicated that Siemens is the most popular Austrian company among Austrian college students. And that makes us both very, very proud!

Yes, and this pride is the product of a success story that began more than 150 years ago. Siemens has been doing business in Austria since 1858. Thus, Austria was part of the Siemens story almost from the beginning. At that time, we opened a branch office in Vienna. Today, we’re represented in all the federal states of Austria. With more than 8,000 employees, we’re one of the country’s biggest employers. With revenues of nearly €3 billion, we’re a major force in the Austrian economy. In fact, this figure represents about one percent of the country’s gross domestic product. Austria is the home of one of our key centers for software development. Furthermore, the Regional Cluster of Central and Eastern Europe, which today comprises 17 countries, is managed here in Austria. Some 50,000 employees work in this Cluster, generating revenue of about €10 billion. That translates into 13 percent of our total revenues and 12 percent of our total workforce. All this by way of a brief introduction to Siemens in Austria.

**Megatrends as an opportunity in global competition**

The first topic I’d like to talk about today – and discuss with you afterwards – is "opportunities in global competition."

My comments on this subject are divided into three main parts. First, what are the critical trends that will affect the entire world in the coming decades and what are the consequences of these trends? Second, I’d like to offer a few examples of the opportunities these trends pose for
businesses. And third, what are the prerequisites that will enable us in Europe to take advantage of these opportunities?

But before I proceed to these issues involving Europe’s role in the globalization process, I’d like to make an observation about globalization in general. If you read the newspapers these days, you’ll probably see only the bad news about globalization: financial crisis, economic crisis, growing unemployment, etc. These are the headlines that readers are confronted with of late.

In my opinion, however, an objective consideration of the facts does not support this exclusive focus on globalization’s negative impact. And my own life experience also tells me it cannot be true. To the people of Villach, the opportunities spawned by internationalization are like mother’s milk. We know that – to be successful on a lasting basis – commerce should not be restricted to a small area. A global economic downturn does not alter this fundamental truth. Fortunately, it appears that the anti-globalization sentiment of the last few months is slowly subsiding. At least, that was the impression I gathered at the World Economic Forum in Davos two weeks ago.

Only a year ago, the predominant mood at Davos was one of uncertainty regarding the future direction of the global economy. There were some participants who couldn’t see even the smallest wisp of danger on the economic horizon; but there were others who could see nothing but rolling, black thunderclouds. Still others warned of the coming storm, but also warned against an attitude of panic; and I was one of those. This year, at least, there was clarity at the World Economic Forum. The Damocles sword of economic crisis had finally struck! Though it did not kill anyone, everyone was affected by it. Now we need to contain the damage as quickly as possible and orient our actions to the future, to ensure that sustainability takes precedence over short-term profits, responsibility takes the place of speculation and measured caution replaces irrational exuberance. If I had to describe the mood at Davos this year in one word only, it would be: sobriety. Everyone realizes the party is over, and now we need to roll up our sleeves and get to work! And for those who are able and willing, there is plenty of work to do.
The coming decades will be dominated by three megatrends

And so I come to my first point, the major trends and their consequences that will shape the world in the decades to come. A few years ago, we launched a project aimed at making Siemens fit for the 21st century. In order to identify the most important trends that will influence the future development of humanity, we defined three simple criteria. First, they must be trends that affect all the world's people. Second, they must be trends that will be critically important in shaping developments in the coming decades. And third, they must be trends that can no longer be halted.

Based on these criteria, we came up with three so-called megatrends. The first is demographic change: The worldwide population is growing and people are growing older. The second trend is increasing urbanization, meaning the growth of cities. And the third is climate change. Let me begin by listing some illustrative facts. That will make the opportunities arising from these challenges much more obvious. Let’s start with demographic change.

Demographic change: Average life expectancies are increasing around the world

The United Nations anticipates that world population will grow from its current level of six billion people to eight billion people by 2025. By the year 2050, there will be more than nine billion people in the world. In Europe, however, the opposite will occur: The population of the European Union will decrease slightly more than ten percent to 450 million people by 2050! Austria is an exception, as the statisticians predict the country’s population will grow to 9.5 million people by the year 2050. And there are certainly no signs of depopulation in Villach. In fact, there has been a steady increase in the inhabitants of this city over the last twenty years, bringing us to the current level of about 60,000 people.

By the year 2025, the average age of the world population will increase by four years to 33. In Europe, the average age will increase from 39 to 44 years (48 years in Austria) over this period! That speaks for our quality of life. In the year 2050, nearly one in three Europeans will be older than 65. The same will be true of Austria. In Villach, by the way, one in six inhabitants today is older than 65. That speaks for the quality of life here.
Urbanization: For the first time, more people live in cities than in the country

The second global megatrend is urbanization, meaning the growth of cities. As of the middle of 2007, more of the world's people lived in cities than in rural areas – for the first time in human history. This trend has accelerated substantially as a result of the tremendous growth of cities in Asia and Africa, especially megacities with more than 10 million inhabitants each. In 2015, for example, there will be just as many people in Tokyo as there are in the entire country of Poland today. And in Seoul, there will be three times as many people as there are in Austria today.

This trend will also affect Europe, albeit on a much smaller scale. By the year 2030, the urban population of Europe will increase by around three percent. On the other hand, more than three quarters of Europe's population today already lives in cities! The main factors driving the growth of cities are the enormous economic importance of urban areas and the opportunities for people they provide. For example, 40 percent of Japan's gross domestic product is generated in the Greater Tokyo Bay area. And Dhaka accounts for 60 percent of the economic output of Bangladesh. Here in Europe, 30 percent of France's GDP is generated in Paris and 15 percent of Great Britain's GDP is produced in London. In Austria, Vienna accounts for 28 percent of the country's GDP.

The downside of all this economic productivity is the growing environmental crisis in many cities, including the detrimental effects on the global climate. Already today, about 80 percent of all greenhouse gases are emitted in cities or in the process of supplying cities.

Climate change will lead to a substantial reduction of the world's gross domestic product

This fact leads me to the third megatrend, climate change. In this respect, there's no shortage of apocalyptic scenarios, which I am neither able nor willing to judge. But I believe that one consequence in particular is not stressed often enough, namely the costs of climate change. A widely respected study by the former Chief Economist of the World Bank, Sir Nicholas Stern, placed particular emphasis on this aspect. The scenarios examined in his study are based on a global temperature rise of 5 to 6 degrees by the year 2100 – if we fail to act.
Based on these "business as usual" scenarios, Stern calculated that climate change will result in the loss of 5% of the world's gross domestic product. Including the indirect consequences, the GDP shrinkage could be up to 20%. To make it very clear, that would translate into approximately €8,000 billion. Every year! That is almost as much as the combined gross domestic products of Austria, Germany, Great Britain and France!

What are the consequences of these three megatrends? Of course, there are many direct and indirect consequences. I’d like to mention only three examples here today.

**Longer life expectancies necessitate high-quality healthcare**

First, an inevitable consequence of longer life expectancy is the growing need for improved healthcare. We all want to be healthy, fit and productive even in retirement age. However, improved healthcare comes at the price of rising costs. Therefore, providing high-quality healthcare at stable or even falling costs is one of the most important challenges facing the industrialized nations in the decades to come.

**Cities are the growth engines of the future**

Second, the promise of a better life is drawing more and more people to the cities. However, the building, transportation and energy infrastructures are hardly prepared for this onslaught. If we want to preserve the role of our cities as economic growth engines, we’ll have to make their infrastructures fit for the task.

**Smart energy mix and efficient energy generation are important levers for mitigating the consequences of climate change**

The third consequence – and one of the most pressing questions of our time – is the fact that global energy demand will increase 45% by the year 2030. If we wish to accommodate this demand while also limiting climate change, we’ll need a smart energy mix. An energy mix that comprises all possible sources – fossil fuels, renewable energy sources and even nuclear power.
But we shouldn’t forget that the most important, most secure and cheapest source of future energy is energy conservation. We can achieve this goal only by learning how to be much more efficient in generating, transmitting and consuming energy.

Energy and efficiency are crucial topics for many other companies in this area. But I don’t need to tell you that – not in a city in which Infineon Austria produces about 22 billion semiconductor chips a year, some of which are used in electronic control systems to increase the energy efficiency of electrical devices. The most recent example is the energy-saving lamps based on semiconductor technology. For certain of these lamps’ components, our subsidiary Osram is one of Infineon's bigger customers. In view of the EU decision to phase out conventional incandescent light bulbs, we’re optimistic that the market for energy-efficient lighting systems will experience a very positive development over the next few years. And LED-based technology will play a key role in this regard.

The challenges of the future can only be mastered through innovation

The challenges that I’ve just outlined are so daunting that some might be tempted to say we’re faced with squaring the circle and would be well-advised to postpone these problems for solution at a later date. But that, ladies and gentlemen, is not an option! We’re running out of time. The only way to meet these challenges is to seek refuge in the future, so to speak, through technological progress and innovation.

Ladies and gentlemen, innovation is Europe’s best chance in global competition. And our chances are especially good in the present economic crisis, when governments around the world are reconsidering the question of whether they should continue using their old, inefficient, costly and often environmentally harmful technologies; or whether they would not be better off with more efficient, environmentally friendly products and services that will cost them less over the long term.

It’s not even necessary to first develop these methods and technologies. We already have them!
They’re ready to use. On this point, I’d like to share three examples of how we can solve the problems facing the world in the areas of healthcare, transportation infrastructure and energy generation. Let’s begin with an example related to healthcare.

**The Railjet: High-speed trains custom-made for ÖBB**

With respect to healthcare, everybody agrees on one thing: The earlier we can detect illnesses, the better we can treat them. By means of this approach, we can enhance the patient's quality of life while also keeping healthcare costs down.

The second example is the Railjet, the new high-speed train operated by the Austrian national railway authority ÖBB. At a cost of €816 million, the Railjet is the biggest rolling stock renewal project in the history of ÖBB’s long-distance transportation operations. Drawn by a locomotive produced in the Siemens plant in Munich, this train has been traveling through Austria at speeds of up to 230 kilometers per hour since mid-December of last year. It will cut the travel time between Vienna and Salzburg to two hours 15 minutes. Obviously, one cannot cover this stretch of some 320 kilometers so quickly by road. If you ask the "Google maps" program, it'll say it takes a good three hours to make this journey – but that’s Google, after all. They don't actually have to make this drive themselves!

Be that as it may, the Railjet is already being planned for use on the route from Vienna to Villach and Venice. And that will make the advantages of train travel even more obvious. This is yet another example of a great solution "made in Austria," because the Railjet contains 80 percent Austrian content, generating about 300 jobs in Austria.

**World's most powerful and efficient turbine is up and running in Irsching, Germany**

The third example is the world's most powerful and efficient turbine. It’s currently undergoing a trial operation phase with our customer E.ON in the Bavarian town of Irsching, close to Ingolstadt. This turbine is 13 meters long and weighs 440 tons. Compared to that, even the Railjet, weighing only 330 tons, is something of a flyweight. The turbine has an output of 340
megawatts – enough electrical energy to supply a city like Vienna. In combined-cycle operation, it achieves an efficiency of more than 60 percent. And that is a world record!

Thanks to its heightened efficiency, the Irsching turbine emits 40,000 fewer tons of CO₂ a year. That amount is equal to the tailpipe emissions of 9,500 VW Golf cars traveling 20,000 km a year.

**Siemens boasts the world's biggest "green" product portfolio**

Some of you may not know that Siemens sells more environmentally friendly products than any other company in the world. Last year, we generated revenue of €19 billion on sales of our "green" products. The use of these climate-friendly products reduces annual CO₂ emissions by almost 150 million tons, an amount equal to the annual emissions of Austria and Switzerland combined.

Allow me to spend a little more time on the subject of sustainability and environmental protection. I believe this issue harbors the greatest potential for us Europeans.

The Europeans developed a heightened awareness for sustainable business practices earlier than most other people in the world. But sustainability does not mean holding back progress. On the contrary, we need more progress, more innovations in Europe. And we need to produce them more quickly if we’re to preserve – not to mention – our chances in global competition. On the other hand, innovations don’t fall from the sky. As Thomas Edison famously noted: "Genius is 1% inspiration, 99% perspiration!"

And now I come to the third point of my comments here today: What are the prerequisites that will enable us Europeans to take advantage of the opportunities presented to us? In my opinion, great attention should be given to two areas, in particular. The first is education: We need smart people from all over the world, who have the required knowledge, creativity and staying power to convert their ideas into marketable products and services. The second involves financial resources. Without the necessary funding, even the best researcher will not be able to accomplish much. It takes continuous research and development and specialized expertise to continually create new solutions.
**Innovation is the key to Siemens' success**

More than 32,000 Siemens employees are engaged in research at 150 development centers around the world. In Europe, about 20,000 Siemens employees are engaged in research and development. In Austria, the figure is about 2,700, most of whom work in software development.

Last year, Siemens invested approximately €4 billion – almost five percent of our total revenue – in research and development worldwide. These investments are paying handsome dividends, as evidenced by the fact that Siemens registers an average of 37 inventions every business day. And we hold about 55,000 active patents. That makes us No. 2 in Germany and No. 3 in Europe. So far, so good, but the bad news is, we have about 2,300 vacant positions in Germany alone. In Austria, we have 116 unfilled positions. There simply aren't enough skilled experts. There aren't enough engineers. There aren't enough smart people; and that applies to Europe generally. This deficiency poses a serious threat to our competitiveness.

Naturally, Siemens is working hard to correct this problem. The Siemens Stiftung supports a wide range of educational initiatives. Under the auspices of our Generation 21 program, we’re reaching out to students everywhere, from preschool to college. Besides whetting young people's interest in science and technology, we’re training teachers and conducting cooperative projects. But taken alone, these activities are little more than a drop in the bucket. What we need is a collective effort, supported by business, government and society in general.

Such an effort is needed also when it comes to funding. And that brings me to the second major prerequisite for improving Europe's chances in global competition. The European Union has formulated the goal of increasing research and development expenditures to an amount equal to three percent of gross domestic product by 2010. Germany and Austria are already well above the EU average, with R&D expenditures equal to 2.5 percent of their respective GDPs. In terms of absolute numbers, this means that Germany has invested about €50 billion in research and development over the last three years; in Austria, that figure was more than €5 billion a year. In Germany, an increase of 0.5% would translate into additional spending of about €10 billion. Per year, mind you! That won't be easy, especially not at the moment. But it's nonetheless necessary!
On the other side of the Atlantic, the corresponding amounts are on a much higher order of magnitude. Before the economic crisis, the United States spent about $330 billion or about €250 billion per year on research and development. That translates into about 2.7 percent of their GDP. Based on the announcements of President Obama, we can safely assume this percentage is more likely to increase rather than decrease. The goal that was formulated by President Obama in his inaugural address is no less than to raise the United States to the pole position in this respect. Allow me to quote from his speech of January 20:

“We will restore science to its rightful place, and wield technology’s wonders to raise health care’s quality and lower its cost. We will harness the sun and the winds and the soil to fuel our cars and run our factories. And we will transform our schools and colleges and universities to meet the demands of a new age. All this we can do. And all this we will do.”

As the Apollo mission demonstrated, at the latest, we know what the United States is capable of when her people are motivated to work for a shared vision. Aside from the Americans, however, we can also observe rising ambitions in the East as well, and most especially in China.

The Chinese have been working very hard on research and development. The Chinese government has quintupled its research spending since the mid-1990s. And by the year 2020, the Chinese government wants to double its R&D expenditures to an amount equal to 2.5 percent of gross domestic product. These are huge sums of money, especially considering that the still dynamic economic growth of China acts like a turbocharger. As their GDP grows, so does the amount of money devoted to research and development. From my many discussions with the Chinese leadership, I know that the people there are accustomed to meeting, if not exceeding their goals.

That means we’ll need to make a tremendous effort in Europe to keep pace with these other countries. Collective investments in research and development are an absolute necessity! All of Europe’s governments and businesses must do their part. That goes for national governments, large corporations and small to medium-sized enterprises. And of course it goes for regional and local governments as well. In fact, these lower-level entities are often the catalysts that spark a country’s innovations.
Villach Technology Park combines research, teaching and industry

It makes me very proud and happy that Villach is exemplary in these respects. Starting with the funding that Villach provides every year for innovative projects and educational initiatives, on top of the state and federal budgets for this purpose. The city also promotes the cause of education through its own school system, its 10 vocational schools, distance learning university and the Technical University of Carinthia. The city of Villach is also a partner of the "Build!" center, which provides assistance to entrepreneurs who wish to start up a new business in Villach. As a shareholder in the biggest non-university research center in southern Austria, Carinthian Tech Research, Villach promotes the development of knowledge related to intelligent sensor systems. Furthermore, the city is receptive to the concerns of its citizens and businesses. In honor of their highly efficient work, the city of Villach recently received the "Government Innovation Award for Carinthian Towns and Cities." Last but not least, the city is a partner of the Villach Technology Park, along with the Carinthia Development Agency.

The Villach Technology Park, which covers 30,000 square meters of space, stands for research, teaching and business, concentrated expertise and high-tech industry in the Alpine-Adriatic region. That’s exactly the kind of synergies we need! In this context, I’d like to mention yet another initiative coming out of Villach. We just heard a brief presentation of the me2c [micro] electronic cluster. I consider that to be an excellent initiative.

In my opinion, clusters create excellent working environments for participating businesses. Everyone learns from everybody. Cooperating, you can share the work and costs, enhance your expertise, creativity and ideas, and end up with better results than you would have obtained on your own. These are the reasons why Siemens implemented the cluster model for its regional entities.

Innovation is the only way to overcome a crisis and invest in the future

Allow me to recap. First, nearly every society today is faced with the same choice: Do we merely repair what has since proven to be unsuitable for the future; or do we strike out in new directions and invest in sustainable methods and technologies? Second, we need to continue making huge
investments in building up our innovation capacity – not in spite of the economic crisis, but precisely because of it. This is the only way to overcome the difficult situation we find ourselves in now while also investing in the future. Third, we cannot lose sight of what is most important: our responsibility to preserve our world as a livable place for future generations.