

SIEMENS

Mastering Global Challenges

Dinner speech by
Dr. Heinrich v. Pierer
Chairman of the Supervisory Board
Siemens AG

Global Engineering Excellence Initiative
of Continental AG
Hotel Intercontinental, Frankfurt
October 13, 2005

Mr. Sattelberger,
Ladies and Gentlemen,

Good evening. It is a great honor to be here with you today – and a privilege to address you. Being asked to speak at a company with such an outstanding reputation certainly will help my image. I just hope it won't harm the name of Continental!

My topic this evening is "Mastering Global Challenges." Like many other companies in Germany, we feel the impact of globalization every single day.

As many of you may know, Siemens has been driven by engineering since the company was founded nearly 160 years ago. Today, our more than 430,000 employees generate around 80 billion euros in sales. And about 80 percent of our business is done outside of Germany – in over 190 countries.

By the way – do you know which organization is the most widespread in the world? It is FIFA, the international soccer association – which operates in 204 countries. And in second place? It's the Catholic Church, which claims 202 countries. Then comes the United Nations. Followed by Coca Cola. And in the fifth place is Siemens. But we aren't jealous of Coca Cola – because we supply them with telephone systems. So where they go, we go along!

Over the past ten to fifteen years, the pace of globalization has continued to accelerate. And globalization is a phenomenon with political, with social, and with cultural consequences. It is changing the world in many ways. But above all, we – and other companies – have had to deal with the fierce and growing pressure of competition.

It is really remarkable – or should I say regrettable that in Berlin politics – and I specifically mean in the last election campaign – the theme of globalization was hardly addressed. It didn't play a major role. In fact, it was virtually ignored – even though adapting to globalization is one of the greatest economic challenges of our times – for our country as well as for many others.

All too often during the election we heard the message: Germany is the world leader in exports. Why should we worry? If we are not world champions in soccer, then at

least world champions in exports. I can well understand why politicians love to use that image. But it is in fact an illusion.

For one, the definition used for this title is a little strange – because it is our own definition and it completely excludes services. But let me make another point quite clear. And this is even more important. You can be the world leader in exports without having substantial value-added in your own country. Take the automobile industry, for example: Value added in Germany in some cases totals only 15 percent. Procurement is abroad, engines are made in low-cost countries, and so on. I am not making accusations here – but merely describing the actual situation. And the automobile industry is only one example.

The sobering and sad reality is that Germany is gradually losing jobs. Almost inevitably, many people say. This has had a very negative impact on the nation's mood and on the whole atmosphere. And the public's trust and confidence in politics – in the ability of politics to institute necessary reforms – certainly didn't grow during the election. It is obvious: Something must be done. But what?

* * *

Is there, in fact, a golden recipe for success?

The one I like best was described by J. Paul Getty – the legendary oil executive and art collector, and one of the wealthiest men in the world in his day. He once received a request from a business magazine. They wanted a short article explaining the secret of his success. And they enclosed a check for two hundred dollars. The multimillionaire replied in six words:

“Some people find oil. Others don't.”

At today's market prices, that recipe sounds pretty good!

But of course success isn't that easy. We have to deal with tough realities. And even if some people don't want to hear it anymore, we must admit that the greatest challenge is the cost situation.

Because of the nature of its business, my company depends on engineers. We have around 30,000 software developers, for instance – making us one of the world's biggest software houses. Well, in Germany an engineer costs around 80 euros an

hour – at least in Munich. In China, that same sum pays for up to six excellent engineers.

And such cost advantages continue on down the line in the workforce. Skilled workers in Germany cost roughly 40,000 euros a year – and only about 5,000 euros in China. Yes, there may be differences in qualifications – but nothing that would remotely justify this enormous cost discrepancy.

That isn't all: This cost difference is compounded by another element. In Germany, a factory employee works less than 1,600 hours a year. But in China, an average factory employee works nearly 2,000 hours a year.

And when it comes to education, the figures are even more impressive – and cause for concern. Each year, nearly 400,000 highly skilled and motivated engineers graduate from Chinese universities. Germany, in contrast, turns out about 40,000 a year on a comparable basis. I think the Chinese will reap the benefits reflected in their old saying:

“One generation plants the trees. The next generation enjoys the shade.”

I especially admire the Asians' thirst for knowledge, their determination to succeed and their unbelievable energy. And their unbelievable passion for hard work. The late Ephraim Kishon summed it up nicely with his typical humorous touch:

“The Asians are conquering the world market with unfair competition: They work during their work hours.”

Their skills, ambition and hard work are conquering the world market. Asian firms are pushing into the global market with growing confidence – and with good products. The days of low-cost means low-tech are long gone.

The Chinese automobile industry, for example, is now set to move into Western markets with enormous price advantages. We saw the first modest step this year at the International Motor Show here in Frankfurt. Most of us have never even heard the names of the Chinese automobile manufacturers – let alone have an idea of what they are producing or planning to export. But I'm afraid this situation will soon change.

We may want to smile right now at these first – perhaps clumsy – efforts. But the truth is: The Chinese government has given its domestic automobile industry a clear

order: Put a competitive car on the market within five years. An internationally competitive car. And I am pretty sure they will succeed.

If China alone isn't enough to deal with, we have India coming along. With strong growth rates, a middle class of 200 million and a huge pool of talent. Over 300,000 engineers graduate every year in India. Their cost level is close to China's. And there is absolutely no question about qualifications: Indians, for example, are the biggest foreign community in Silicon Valley. To sum it up: Indians are on the move.

Is that all? No. China and India are by no means the only challenges coming from Asia. We should not ignore other potential in the region. Various dynamic countries – particularly in Southeast Asia – will be coming on line as economic competitors and further intensify pressure worldwide. Perhaps not tomorrow, but certainly in the foreseeable future.

But we don't have to look that far away from home to feel that competition is getting tougher and tougher. European companies face another challenge – right at our doorstep. We are seeing a kind of mini-globalization within the expanded European Union itself. Right now, business conditions in Central, Eastern and Southeast Europe – and in the Baltic republics – are more similar to Asia's than to our own. Strong growth rates. Attractive, low tax rates. And highly competitive labor costs. In Hungary, for instance, a skilled worker costs only one-quarter of an equivalent German. And a software developer in Romania costs only 27 euros an hour, compared to the 80 euros in Munich

I already mentioned. We employ nearly 1,000 in Romania, by the way.

These pressures will keep mounting. The winds of competition gradually grow into a storm and then turn into a raging hurricane. Some new competitor – either companies or locations – will always be appearing on the scene. And they will be cheaper, bigger, tougher, better or faster.

In a way, it's like having a chicken farmer roll a huge ostrich egg into the henhouse and say to the hens:

“Ladies, this is what the competition is doing!”

The big question is: What can we do?

Better said: What must we do to prevail in this almost Darwinian environment? One thing is certain: We cannot allow ourselves to resign to the situation – like a union representative who visited China and came home with the sad message:

“We have lost out against the Chinese anyway – no matter what we do.”

Nonsense. And this kind of resignation is, of course, not acceptable. It would be good to talk about political framework conditions and what we all hope and expect from the Grand Coalition. But I’m not here to discuss politics. Rather, I want to talk about what we in industry are doing – or must do to cope with these challenges. And I want to concentrate on two main points: costs and innovation.

One obvious answer to the competitive cost situation is to improve our own cost side. And with every economically sensible instrument available. That is absolutely necessary – and German industry has been pursuing this path for quite some time now. But I believe there is an area where not enough has been done. We have not yet exploited all possibilities for making work time more flexible and achieving a more flexible labor market in general.

Some of you may remember that Siemens took the initiative in these areas in the past year. At some locations, we reached agreements with works councils and unions to extend working time. At individual locations we managed to return to the 40-hour week – without additional compensation. I personally proposed that solution. Because I am convinced it is easier for people to work more without earning more – than to work less for less money.

More work for the same money. I know that isn’t a patent recipe for every situation. But in concrete cases it can help strengthen a company’s competitiveness. And I think this is very important: It can help secure jobs.

At any rate, we need flexible labor agreements. And I agree, of course, in some cases a shorter working time can also help, but then naturally with lower compensation. Such local job pacts increase the chance to slow down the shift of industrial jobs we are experiencing right now in Germany.

And I am absolutely serious about this: We are determined to fight for jobs in Germany – and not simply stand by and watch as more and more jobs leave the country. Obviously, we prefer fighting this battle arm-in-arm with the unions. But if all

else fails, we then sometimes have to fight against them. Because we are fighting a very crucial battle here – for Germany’s future viability.

Sometimes we hear that a highly developed country like Germany needs to be transformed. That is, industrial jobs will be replaced by jobs in the service sector, like in England. And factories in Germany? Can that work? When many companies are shifting labor-intensive work to Central and Eastern Europe and to Asia?

Of course, such a trend is unavoidable if you look at the cost situation. But that certainly does not mean the end of manufacturing in Germany. We can find innovative solutions. For example, a company can set up intelligent and creative job-sharing between high- and low-cost locations. My company recently did this with a plant in Würzburg. The site will soon have a sister location in the Czech Republic. Würzburg will be used as a frontrunner producer of highly innovative products. The sister plant in the Czech Republic will take over labor-intensive parts of the production.

And there is another key reason to keep manufacturing capacity in the country. It is our experience that if we have no factories, at some point we will lose the capability to generate new ideas. Our R&D people depend on constant interaction not only with customers, but also with production. They are often right on the spot in the factories – fine-tuning and learning ways to make future products even better and more efficient. I am totally convinced: If we would give up production in Germany, the development of products – which means R&D – would soon follow.

And my idea of manufacturing doesn’t quite match that of an American businessman. He joked:

“The factory of the future will have only two employees – a man and a dog. The man will be there to feed the dog. The dog will be there to keep the man from touching the equipment.”

We still have quite a way to go in optimizing labor costs in Germany. Some of you may have been following the recent discussion about how unit wage costs in Germany are improving. Yes, it is true we have made progress.

Yet despite such progress, we have to be realistic. Germany still ranks worldwide at the top of the list when it comes to labor costs – along with Norway. And does anyone really believe Norway is our strongest competitor in the world?

At the same time, no one expects Germany will move far down the ranks in costs. So what then? Well, if we have to pay top wages and the associated labor costs, then we must offer top technologies. Nothing less. The only way we can continue attracting and keeping customers around the globe is by securing – and sustaining – technology leadership through innovation.

A competitive edge in innovation requires intensive – and expensive – efforts. At Siemens, for example, we invested over 5 billion euros in R&D last year. More than 45,000 researchers work at 150 facilities in over 30 countries to keep us at the forefront. As part of our internationalization strategy, we are currently building up R&D centers in China, India and Russia to complement and support our excellent facilities in Germany. This global network taps the creativity of people everywhere – and channels it to where it can be most effective.

And these efforts are paying off: Last year we reported around 8,200 inventions worldwide and submitted two-thirds of them for patents. We are the leader in patent statistics in Germany and Number 2 in Europe. And we are ranked among the Top Ten companies in the U.S. In fact, we were granted more patents in the U.S. than that well-known American competitor. You know – the one with two letters. Overall, we now hold 48,000 patents worldwide. And we use them to create customer benefit.

I would like to mention only two of these innovations. One is already on the market, the other one is coming up soon.

In the field of automotive electronics, we are a leader in piezo-based fuel injection systems – for gasoline as well as diesel engines. The diesel injection system, by the way, has been nominated for the 2005 German Future Prize – which will be awarded by German President Köhler this November.

Also especially exciting, I think, is the development of the electromechanical wedge brake – a system that will revolutionize car brakes. The EWB is far more efficient than today's hydraulic system, reacts faster, uses far less energy, and is much

smaller and lighter than traditional brake units. This pioneering innovation was presented at the International Motor Show a couple weeks ago.

I think it is well known that Siemens and Continental are both strong competitors as well as good business partners. It's a healthy situation. This keeps both of us on our toes – and ultimately strengthens the automotive electronics industry in Germany.

In pursuing innovation, German companies have to keep their priorities right. Like it or not, the days of extravagantly over-engineered products are over – or at least numbered. Companies increasingly must design-to-cost – and produce what the customer will pay for. If they don't – others will. This message is sinking in everywhere.

Someone described the problem this way: If you ask a Western engineer to design a product, he will ask for the specifications and then work to achieve the highest quality with the best materials. An Asian engineer, in contrast, will first ask what quality is wanted for what price. And then design something that meets those requirements. Nothing less, but also nothing more. We have to learn from these people.

Innovation, of course, depends on a general environment of support in a country. Without the backing of the political, scientific, business and educational communities – very little could be accomplished.

To achieve innovation and growth, we must do a better job. But it is clear: We also need better framework conditions. And one key factor here is education.

This is one of Germany's prime challenges. We have seen how our lower schools perform in international comparisons. We need to improve.

And the same is true for our universities. Don't get me wrong: I certainly don't believe everything is bad. On the contrary: Our engineering studies rightfully enjoy a good reputation worldwide. And quite a bit is being done in the universities to increase their attractiveness for high-potentials – from Germany and abroad. With English-language curricula, for example, or internationally compatible Bachelor's and Master's degrees.

But there is always room for improvement. What about introducing greater competition among the universities? And competition can only work if we grant

greater autonomy to the universities. Or is the life-time tenure of professors really reasonable? Why shouldn't we have tuition? The federal courts have paved the way for introducing them.

I personally could never understand why my daughter has to pay rather high kindergarten fees for her kids – and I never had to pay university tuition for my children. A rather strange idea of social justice, I would say.

And we should keep another aspect of studies in mind – an aspect that is especially important in educating engineers. Of course – we want world-class excellence in subject matter. And yes – we want a healthy mix of practical experience and theory. But increasingly, we – and other companies – are looking for additional dimensions in education. An understanding of business administration. A strong dose of economics. Social skills such as teamwork and managing people. These dimensions transform pure engineers into all-round businessmen- and women. And further boost a company's competitiveness.

In the end, we have to keep reminding ourselves that a hard global competition has long since begun for the best educational system. And this competition will decide the future for coming generations.

Henry Ford once said:

“A country's competitiveness doesn't begin in the factory hall or in the research lab. It begins in the classroom.”

Every time I am in China, I am amazed at the enthusiasm – even fanaticism – of young people in pursuing a good education. In China – and throughout large parts of Asia – education is given absolute priority. Everything is sacrificed to give children a first-rate education – so they have a chance to get a better job.

Education does not – and cannot – stop with the awarding of a degree. Companies must keep their people state-of-the-art by providing continuing education and training opportunities at every level. Career-long learning is the key to mastering the demands of accelerating technology trends and changing business needs. And only as a side remark: We also need in this regard a new form of cooperation with the unions.

I am hopeful that we will make further progress in the right direction under the new government of Angela Merkel. She is planning to establish a “Council for Innovation and Growth.” This Council will bring together representatives from major companies, small- and medium-sized firms, the scientific community and politicians.

The general goals are ambitious. Germany must spend more money on research and development. I am especially pleased that the coalition partners have already agreed on one key point: increasing Germany’s R&D budget to 3 percent of the GDP.

But the decisive point is how the money is spent – and on what. There is a growing conviction that we have to focus more on future-oriented technologies. I’m thinking, for example, of biotechnology, gene technology, nanotechnology, materials science, medical engineering, IT and communications, and the field of energy. All of these technologies will play decisive roles in the future – and will be the source of growth and jobs.

It is a widely recognized fact that we have an excellent scientific landscape in our country. But what we urgently need is a better and clearer cooperation between the scientific community, the universities, politics and industry. We have to achieve a faster transformation of excellent ideas into concrete products. And we must quickly overcome the barriers that are still present at many levels.

We have to know what is being done – and coordinate the work to achieve maximum effectiveness. And we also should use all opportunities in cross-European partnerships to strengthen – and sustain – technological leadership in Europe.

In the future we will face even stronger competition from all parts of the world, especially from China. And we should remember: China and India are producing 700,000 engineers every year. France and Germany together turn out only one-tenth that number, or 70,000. This demonstrates how vital it is to join our forces in Europe – and in the field of R&D as well.

Another issue faced by the new Council will be to eliminate major obstacles to good working conditions in Germany. And this is cost-free. The ten-hour limit for a day’s work, for example, may make sense for a worker in a factory, but is highly counterproductive for those who work in the field of R&D.

And, of course, the Council will have to encourage the search for answers to the megatrends that are having a huge impact on our societies. Aging populations – particularly in Europe – is one such critical issue.

* * *

Ladies and gentlemen,

Let me briefly summarize what must be done to meet – and master – the challenges of globalization.

First: We have to get our costs under control – and to a point where we can retain key industries and the know-how associated with them. Labor-intensive work will continue to be shifted elsewhere – but we must provide a viable basis for keeping high-tech manufacturing in the country.

And second: We have to impress one fact on the public consciousness: Innovation – and only innovation – will ensure our enduring success.

And I am convinced: We can be among the winners in globalization. It is in our hands. We know what to do.

But we should also bear in mind the words of Erich Kästner:

“Es gibt nichts Gutes es sei denn man tut es”

or in English:

“There is no good unless you do it!”