

SIEMENS

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Head of the Motion Control Systems Division
Success through innovation and customer focus

- Check against delivery -

Ladies and Gentlemen,

A most cordial welcome to today's press conference anticipating this year's EMO. Once again this year, we want to continue our tradition of informing you about the market situation, trends and highlights in our business in the run-up to the EMO. I am pleased to see that so many of you have accepted our invitation.

EMO 2007 – Leading trade fair for the machine tool industry

We are all aware of the significance of this European machine tool exhibition. Since its inception in 1975, EMO has developed into the world's largest fair for metalworking and automation. For Siemens A&D, EMO also deserves a special note in our calendar since it showcases, in an international arena, innovative products and solutions documenting the technological performance of mechanical engineering and current technological trends. We at Siemens A&D are expecting to gain new insights from this year's EMO, new stimulating ideas that confirm and continue to strengthen the confidence placed in the performance of the German and European machine manufacturing industry and its automation partners.

Siemens A&D Motion Control Systems

Since our last A&D MC EMO trade press conference held in July 2005, our business performance has continued to be very positive. Within the Automation and Drives Group, we have three business sectors dealing with Motion Control solutions. In one we address solutions for machine tools which we will be discussing at greater length a little later; in the second we cover solutions for production machinery for specific industries typically relying on motion control; the third sector includes hoists and cranes.

The first part of my presentation will be devoted to describing the current situation in the machine tool manufacturing industry and the need we see for closing the

ranks between machine manufacturers and automation partners. In the second part I would like to discuss the current situation in our business sector and our prospects.

Following that Mr Uwe Häberer, head of the machine tool sector, will be explaining the main aspects of our product strategy and our main highlights at EMO 2007.

Despite the fact that some of the overarching messages may sound familiar to you, they nevertheless remain valid and are borne out by market trends and technical innovations in the machine tool industry. It remains a fact that the competitiveness of European machine tool manufacturers depends heavily on both innovative power and a short time-to-market. One central element is certainly close cooperation between automation partners and OEMs, an approach which we have always favoured. The relationship between automation supplier and user, however, is also moving into sharper focus for various reasons. Firstly, in the light of the service package we provide to users, and secondly because of the close coordination required with operators and their needs.

Even if we run the risk of repeating one or the other message from previous years, this does not mean that we have run out of product innovations or technical innovations. Rather, the market requirements described here are evidence of the fact that we have taken the right approach for achieving sustainable success in the future. Technical innovation in automation systems, as you know, is not an end in itself but makes sense only as long as it helps increase the productivity of both machine manufacturers and machine users. But let me first turn to the general economic situation and market performance.

Machine tool market:

The Asian markets are the growth engines of our industry

The current economic situation and further performance of machine tool manufacturing are characterised by fierce international competition against an economic upward trend which has, however, so far remained stable. With the volume of the world market growing by 10 per cent, 2006 was an extremely favourable year for the international machine tool industry. VDW – Verein Deutscher Werkzeugmaschinenfabriken – indicates a production increase of 18 per cent CAGR for the period from 2004 to 2006. For the current year, 2007, expectations are equally high. The growth engine of the industry is the Asian region. For geographical reasons, Japanese manufacturers have a natural advantage here. Earlier than expected, a few years ago competitors from China also staked their claim on the market as serious suppliers. It is expected that China will also become more and more independent of imports also in the mid technological range. According to VDW, approximately 60 per cent of machine tools are currently imported, with German manufacturers accounting for almost 15 per cent.

China is the largest sales market for machine tools. In 2006, one fifth of all global sales (in value terms) were realised in China. German machine tool manufacturers supplied products worth 1.2bn USD. The main competitive advantage of machine tools manufactured in Germany has always been their precision, their long service life, and above all the automation components built into them. For the next few years, national industrial federations are expecting China's consumption of machine tools to continue to rise in double digit figures, though consumption is set to flatten because investments are increasingly flowing into upgrades rather than into new capital assets. Broader-based investment is gaining in importance, as exemplified by investment in the automotive supplies industry.

The continued dynamism of the Asian markets is mainly driven by India, South Korea, Japan and the Near and Middle East. South Korea ranks as the second most important sales market for machine tools after China. Exports to South Korea

rose by 35 per cent in 2006. The main buyers are the shipbuilding and automotive sectors.

In India too, direct investments by international conglomerates have stimulated this dynamic emerging market. Likewise on the Japanese market, German machine tool manufacturers were able to gain new ground. The 33 per cent increase in exports shows that thanks to their high degree of specialisation and innovation, European products can hold their own even in Japan. Let's not forget that Japan is the second largest market worldwide. But only 10 per cent of Japan's demand is met by imports.

Other markets besides Asia

Another positive factor influencing the machine tool industry in Europe is continued capital investment in the newly industrialised countries. Russia, Turkey, and Slovakia are developing their production facilities and thereby benefiting the machine manufacturing sector.

The VDW analysis indicates that the competitive advantage of German manufacturers lies in their great CNC expertise and their continuing innovation in all sales markets. Efficiency and a better total cost analysis are what determine the customers' purchasing decisions. At the same time, European machine tool manufacturers are expanding both their local sales and service networks and their local assembly capacities. Like machine manufacturers as a whole in Europe, machine tool manufacturers are having to cope with disadvantageous exchange rates. The high cost of steel and oil as inputs is an additional burden. Both of these factors have to be countervailed by a convincing productivity advantage for the customer.

The business cycle in machine tool manufacturing closely follows the general economic cycle and has therefore always been subject to cyclical fluctuations. Based on our analysis, this economic cycle is due to reach its climax soon, and this goes for almost all relevant countries. Business sentiment, seen as an early indicator of demand for capital goods, suggests either stagnation or decline. We are therefore expecting the growth curve to flatten and/or business to cool down in late 2007 and early 2008.

What can we do in this situation? On the one hand, the European machine manufacturing industry needs to operate in a setting which safeguards or further strengthens its international position in the global market. What is important here is what industry itself can influence. The key to success lies in innovative and high-quality technology, an excellent cost position, a commitment to venture into new markets, an enhanced customer focus, and a short time to market, i.e. from designing a machine to its mass production. As partners in automation, we are able to make a substantial contribution to making these success factors a reality.

The key to success in the global market:

Partnership with automation suppliers and machine manufacturers

As automation suppliers claiming to provide systems, solutions, and services that bring substantial customer benefits, we maintain very close relations in a partnership arrangement with machine tool manufacturers. We are convinced that business prospects are best if you work closely together in the battle against ever fiercer global competition. This is the only way for us to gain this leading edge, shorten time-to-market and bring out technical innovations to the user.

First and foremost, the chances of success lie in a high-quality product portfolio and secondly in our capability to bring powerful systems and solutions together, thus generating superior long-term benefits for our users. Another key success factor is to better muster all business-relevant processes, including cost optimization in all value-added stages on the one hand and a continually improved market and customer focus on the other. The third key factor I see is related to an even clearer focus on the emerging East-Asian markets and the BRIC countries, i.e. Brazil, Russia, India and China.

Of course, this does not mean that we are abandoning the local European markets - where we will have to deal with increasingly strong competitors from the countries I mentioned before. This applies as much to the countries which have recently joined the European Union as it does to the growth regions of Eastern Europe such

as Russia. We should not close our eyes to the fact, however, that this industry's growth in the next few years will be largely generated in countries such as China, Taiwan, Korea and India.

Our goal must therefore be to persist in opening up these markets with a customer-focused and innovative machine and automation strategy. As I mentioned earlier, the onus for action rests on both machine manufacturers and on us as automation partners.

Europe's machine manufacturers today have the potential and innovative power to position their high-performance machines as imports in these markets or to establish themselves in these countries, as some companies have already done. Thanks to our already established presence in these markets, we are set to offer our customers the best possible support.

Technological trends

Describing its future scenario, the German association of machine tool manufacturers outlined the factors which will ensure that Germany's manufacturing sector will remain competitive. The results of this analysis have been confirmed in a number of success stories. The gist was:

- 1.) One third of machine tools will come with functions such as self-monitoring, failure prediction and remote service,
- 2.) Modular design will increasingly enable "plug and produce".
- 3.) (Micro-)electro-mechanical systems will be used as active components.
- 4.) Software and communications capabilities will become increasingly important in plant and machinery, not least because security and safety requirements will become more stringent.

And:

- 5.) Technological differences will even out. This calls for enhancements in terms of both service provision and relations management.

Let me emphasize this point again: Out of all the chances and opportunities for German machine manufacturers suggested by the trends, only four are based on technology and innovation. These opportunities and the innovations and technologies require to capitalise on them are not just a matter of better factory systems

and better mechanical engineering expertise, but are largely based on innovative concepts of automation and serviceability. And it is here that we at Siemens can claim to be the ones who identified these significant trends several years ago. And we have already translated them into our automation solutions.

The situation at A&D Motion Control Systems:

Strategy and prospects

I am firmly convinced that the reason for the excellent situation we are in today lies in the fact that Siemens anticipated these technical trends many years ago and that we fine-tuned our product portfolio to respond to what we saw coming.

The Motion Control Systems Division is a system provider for automating machine tools, automating production machinery across the manufacturing spectrum, and automating harbour and industrial cranes. Based on this portfolio, we achieved significant year-on-year growth in 2005/06. Our business in the current fiscal year is also giving us reason for optimism.

We estimate that the world market for machine tool equipment – our highlight at this year's EMO – has a volume of roughly 5.1bn EUR. Western Europe accounts for roughly 40 per cent of this market, Asia/Pacific for 49 per cent, and America for roughly 11 per cent. In 2006, our share of the global market in terms of volume was well over one quarter.

In Europe we are clearly the number one, that is, the market leader. At the global level, we are still to be neck-and-neck with our main competitor, Fanuc. We are trying to compensate the, for us, disadvantageous exchange rates for the dollar and the yen by strengthening our commitment to staging a worldwide presence and by supplying a convincing system portfolio which covers the full life cycle of every machine.

In the field of machine tool equipment, we expect an average annual market growth rate of approximately two per cent in real terms. We are set to outperform the market. By consistently building on our strengths:

- innovation leadership,

- customer focus, and
- a worldwide presence,

we will continue to seize all available opportunities for further profitable growth.

The mainstays for securing our international competitiveness include the joint ventures with Yaskawa and our development and production facilities in China. In addition, we are building up our solution competence in the most important regions of the world.

One important element will be on show here at this site ready for you to view and appreciate after this press conference. This new building, our Technology and Application Center (TAC), was especially designed for contact with our users. It is here that users learn more about the functionalities and advantages of Siemens control products and systems. This new Technology and Application Center is an important milestone, giving momentum to our contact particularly with small and medium-sized enterprises. Besides showcasing our systems and solutions and emphasizing our continued efforts in the field of simulation tools, this Technology and Application Center is a significant contributor to strengthening and broadening Siemens' position as the world market leader in motion control. As you will see, both machine tools and production machines have been installed in the machine halls. Automation solutions can be tried out and enhanced here with the support of the machine manufacturers. At the same time, these machines are also used for operator and user training purposes.

We also regard the investment here in Erlangen as a clear sign of our commitment to Germany as a manufacturing base and to the German machine manufacturing industry. That Germany really is a competitive industrial location has been confirmed by the fact that our Gerätewerk Erlangen won the "Factory of the Year 2006" award. Here again, you will have an opportunity after the press conference to look at our production and the underlying design principles.

To further strengthen our customer and industry focus, we have recently added another module to our concept by setting up our Aerospace Competence Center, pooling all our expertise in this specific sector. This is where customers will find

direct contacts speaking their language and adjusting our product portfolio to exactly meet their specifications. Together with Automotive, Aerospace is an innovation driver in the machine manufacturing industries.

Back to our product portfolio. At this year's EMO you will again see excellent examples of our power of innovation. As mentioned earlier, Uwe Häberer will be presenting the details of our innovations shortly.

We are poised to continually expand and strengthen our activities in the end-user segments such as automotive and aerospace. And we continue to rely on a mighty service concept that incorporates our new technologies, with our Condition Monitoring Services as part of the ePS electronic Production Systems being but one example.

Innovation leadership and user focus

Machine manufacturing has significantly advanced in recent years, opening up new productivity opportunities for both machine manufacturers and machine operators. Machine manufacturers benefit from the much greater possibilities inherent in the modular design of mechatronic components, enabling them to design and develop a new machine within much shorter time frames and with greater model diversity. Past and future advances have been and will be largely inspired by new mechatronic concepts, by microelectronics and software technology.

In the factory environment, the main requirements include integrated process chains, quick diagnosis and networking. To increase machine productivity and efficiency, the classical levers still apply: high-speed main spindles, high axis speed and axis acceleration, as well as high data communication speeds. Improved surface quality, shorter machining times and enhanced process safety and security are required to optimise the machining result.

So it is both these market requirements and technological possibilities which are setting trends which concern machine manufacturer and automator alike. The

example I would like to give you here for machine manufacturing includes high speed, full and dry machining which, for Siemens, translates into distributed intelligence, horizontal and vertical networking, new forms of human-machine communication, direct drive technology, and machine and process simulation. And it is only in a sound and trusting relationship between automation specialist, machine manufacturer and user that the challenge of rapidly translating new ideas and requirements into systems and solutions can be met.

To us, this is what innovation leadership is all about: to identify these trends, to correctly analyse and assess them, and to turn them into marketable products, solutions and services.

The goal is to optimise

- the machine's entire life cycle, i.e. from inception to use and retrofit (total cost of ownership);
- the process chain in production, i.e. from work piece design to finished product, and
- integration of the machine's data system into the production environment, i.e. from feeding the NC program to tool management or web-based maintenance management.

So innovation to us is not an end in itself but an ongoing process to increase the competitiveness, productivity and profitability of our customers and end-users. Innovations without customer benefits are a waste of R&D money. That is also why it is of eminent importance to us to understand our customers' requirements in the most varied technologies, since these requirements provide the basis on which we develop new systems and further develop existing products. We have therefore worked very closely with machine manufacturers and users over the years, a fact which, below the line, may be one of the reasons for our success in the market.

Shorter time-to-market and a shorter prototyping phase are the buzzwords pointing the way to where innovation is heading in our industry. We are here to provide the appropriate solutions in the form of our tried and tested simulation tools and also tools for use in the digital factory. Last but not least, I would like to give you an outlook and relate that to our integration of UGS.

Digital factory

The success of a manufacturing company is largely a function of how quickly it is able to respond to new market requirements. New plants need to be set up rapidly and with great planning reliability. At the same time, cost pressure is rising and forcing everyone to increase productivity throughout the entire production life cycle. The idea of a digital factory is to virtually visualise and simulate a very detailed model of the real factory during the planning phase, before the plans are translated into bricks and mortar. Designers and plant engineers initially design the virtual products on the screen, and any subsequent plant design modifications are incorporated automatically. Products are approved and released only after having successfully passed through the digital factory and after having exhausted all optimisation options for both product design and production process. The digital factory effectively dovetails product development and production planning.

The services and products around production and machine tool simulation have significantly reduced prototype costs and time-to-market as well as training outlay, especially for small and medium companies. The integration of CAx applications is now the next step in the productivity chain for the SME user. Many interfaces today are only in top-down design. Reverse engineering, i.e. from an optimised prototype back to the original design, is impossible. We see new productivity potentials here on an as yet incalculable scale. Although small and medium-sized enterprises have the greatest difficulty in responding to changing market conditions and requirements - such as product diversity, smaller batch sizes, personalised designs and flexible adjustment of production patterns - these small enterprises will also now be able to derive the full benefit from optimising design layouts, work pieces and manufacturing processes in a virtual setting, i.e. in a digital factory, before starting real production. This saves prototyping costs and considerably shortens time-to-market.

Simulation

Simulation has a decisive role to play when it comes to testing new design concepts. For example, hydraulic or even conventional mechanical drives can be replaced by high-performance servo drives with intelligent Motion Control. We have supported our customers in a large number of projects, providing wide-

ranging mechatronic machine simulations, thus identifying and optimising, at the virtual stage, any and all critical parameters. In many cases we were able to exceed the specified productivity gain with the very first real machine built, definitely saving one or more prototyping loops.

With our simulation tools we have been focusing on the machine's life cycle. With machine-oriented MES solutions, our Manufacturing IT, we provide shop floor solutions for both individual machines and entire plants, optimising processes, planning and process analysis. We have achieved full integration into MES via Simatic IT. With the acquisition of UGS, we have filled the last gap and have come full circle in Product Life Cycle Management (PLM).

Summary

Ladies and Gentlemen,

Siemens A&D Motion Control Systems provides a full range of high-quality products, solutions and services around machine tools. We are the automation partner for the machine manufacturer. This partnership extends from working together on a new machine design – the buzzword here being Mechatronic Support – to rapid support with spare parts and expertise around the clock, worldwide.

In a continued effort to give our customers value added – value added in terms of more advanced technologies and value added in terms of their position vis-à-vis their competitors – we are poised to systematically translate market requirements into innovations.

We are convinced that our philosophy of creating innovations to increase customer benefit will further strengthen our position as a leading automation supplier.

I trust I have been able to wet your appetite for EMO. We are looking forward to the pleasure of meeting you at our booth.

Thank you for your kind attention.

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