

SIEMENS

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Success requires innovation

- Check against delivery -

The power of innovation at Siemens:

Innovation means growth and success to a company. Siemens relies on the power of innovation in order to take the lead in global competition.

- Current innovations:
 - Piezo injector for diesel engines (German Innovation Award 2005)
 - Somatom Definition (first computer scanner with two exposure sources and considerably less radiation exposure)
 - Energy-saving motors (up to 40 per cent less power loss)
 - The largest and most powerful turbine in the world (pollution reduction by as much as 40,000 tons CO₂ per annum)
- With sales of over 87 billion euros, Siemens is the number two worldwide among electrical and electronic companies.
- Siemens holds over 62,000 patents and ranks among the top in terms of new patent applications every year.
- In fiscal 2005/2006, the company invested 5.7 billion euros in research and development or 23 million euros per working day, employing almost 50,000 people, almost half of whom are working in Germany.

Innovation strategy at Siemens:

- In-depth knowledge of customers' businesses and processes
- Technological leadership
- Strong patent portfolio and leading role in standards
- Leveraging synergies / platforms
- R&D in leading markets
- Optimized innovation processes
- Cooperation with international public research
- Decisive innovation culture, excellent staff
- Future scenarios for a strategic innovation management
- Focus on megatrends
 - Megatrend: urbanization
 - Megatrend: demographic change

Visions of the future – “Pictures of the Future”

- Extrapolation of today’s business into the future using roadmaps
- Identification of major trends and megatrends
- Development of scenarios for the future for individual activities
- Deducing future customer demands and markets from these scenarios
- Retropolation of these scenarios back to the present time in order to find paths and technologies from the present into the future

Pictures of the Future – in the “Automotive” field

- **Trends:**
 - Increasing mobility: In countries such as China and India, in particular, demand for cars will rise; demographic changes will require new vehicles and technologies for both the younger and the older generation.
 - Diminishing resources: Natural oil resources will be the main source of energy dominating the market in 2020. However, the demand for renewable sources of energy will continue to rise, and they will see their market share rise.
 - Growing environmental protection
 - Increasing need for safety and information
 - Population figures in developing countries and newly industrialized countries will rise rapidly, whereas they will remain static or decline in the industrialized nations.
 - Urbanization in the world: more and more people will migrate into ever larger megacities (> 10 million).
- **The resulting key trends and needs for Automotive:**
 - environmentally compatible mobility
 - increasing need for safety and information
 - the trend towards closer networking of technologies within individual vehicles, between vehicles and between vehicles and infrastructure
 - growing technological complexity of vehicles

- **Key technologies required for the car of the future**

- The car of the future will have an environmentally compatible engine causing no emissions. With our advanced fuel injection systems including high-precision piezo valves and smart drive and gearbox functionalities and our research on integrated starter generators and hybrid drives, we are already pointing the way to the future.
- In the future, cars will be more secure and comfortable than before. Smart assistance systems will help the driver parking. Night vision systems or a lane changing assistant will help prevent the driver from making severe mistakes. Accidents will be a thing of the past.
- Infotainment will play a central role in the car of the future. Mobile communication and entertainment systems will be integrated into the car and ensure wireless connectivity. Drivers will be online all the time, wherever they may be, and the car will be in constant contact with other cars and with infrastructure.
- All on-board control units will be interconnected to reach the targets of “zero emissions” and “always on”. We are already working on developing personalized control units supporting the driver in driving his car in an optimized way, keeping fuel consumption and emissions low. As founding members of the AUTOSTAR consortium, we are playing an active role in establishing standards for the electronics of the future.

Pictures of the Future – in the “Healthcare” field

- **Trends:**

- Life expectancy will rise in the industrialized nations while the birth rate continues to drop.
- Cost pressure on the health system will continue to rise.
- Devices in both office and private use will increasingly be equipped with information and communication technologies and networked.

- **The resulting key trends and needs for Healthcare:**
 - The demand for medical care will continue to rise.
 - In the future, medical products and services will only survive in the market if they also help reduce the cost of general healthcare.
 - Within the healthcare system – from the hospital to the local physician, to the patient – will be interlinked.

- **Key technologies required for the healthcare system of the future**
 - In-vitro diagnostics will help bring about personalized medication in the future. The selection of active ingredients and their dosage will be matched to suit the individual patient.
 - With its workflow system “Soarian”, Siemens is continuing to work on interlinking all hospital areas. Physicians, therapists and nursing staff will be able to obtain quick and easy access to an electronic patient file containing all data relevant to the patient's status.
 - New imaging processes will image and localize molecular processes and help pave the way toward molecular medicine involving new pre-clinic methods and biomarkers.