



Siemens China

The largest Siemens data center in Asia – cutting-edge technology with a “green” balance

Siemens China’s commitment to helping the country achieve sustainable growth is supported by Siemens IT Solutions and Services, which provides the entire IT and communications infrastructure for the state-of-the-art, environmentally friendly HQ that opened in Beijing in 2008. The project also included the Beijing Data Center, the company’s largest and most advanced data center in Asia. It provides capacity and performance for both Siemens and its external customers in China and Asia and, thanks to the consistent use of modern efficiency concepts and technologies, is a sustainable success model for a “green” data center.

The project

The subsidiary in China is strategically important for Siemens, as it houses the data center that functions as the regional level 2 hub and provides all Siemens subsidiaries in Asia with computing power and storage space. The infrastructures for the IT and voice services of more than 70

locations in China and Mongolia are concentrated here. Immense growth in China over the past few years has led to a rapid increase in demand for IT capacity. As a result, Siemens China decided to build the new data center. Siemens IT Solutions and Services was chosen as the partner for this project due to the vast amount of experience it has with the planning and operation of data centers, as well as its expertise in using and implementing innovative technologies and sustainable projects.

The challenge

The growing demand for computing power and the rapid increase in data volumes, partly due to extended legal retention requirements for data, are placing new demands on data center operators. This increased demand has led to a rise in energy requirements, which in turn has resulted in growing energy costs and stricter regulations regarding CO₂ emissions. As a result, Siemens China required a new, high-capacity data center with low energy consumption and a favorable energy



Siemens has been a major player in the Chinese economy for some time now and a reliable, committed and trustworthy partner to the country. The company employs around 40,000 people in China and posted revenues of nearly 4.9 billion Euros in 2008.



balance. Additionally the data center also had to ensure the long-term provision of IT services to Siemens, as well as to its customers and fast growing business needs across Asia. It also required a modular structure and needed to support the IT facilities' different power supply and cooling systems.

The solution

The data center, which opened in May 2008 in Beijing, is an excellent example of a Transformational Data Center (TDC). It is designed to contain 100 racks, 630 servers and covers an area of 490 m² in phase one while in phase two the capacity is expected to double. The development, as well as the design and operation, are ecologically oriented. For example, it utilizes open-air cooling, low-energy lighting and servers needing 36.78% less energy.

Behind the TDC lies a trend-setting concept, which, in contrast to individual green IT strategies, incorporates all infrastructures: design, security, energy, water management, building engineering, communication and traffic. The TDC stands out due to its comprehensive solution portfolio which has been implemented in cooperation with other corporate divisions such as Siemens Building Technologies and Siemens Industry Automation.

The three most important factors to operating an efficient and sustainable data center are maximum server utilization through virtualization, cost and usage transparency through ongoing measurement and energy management, and automated processes and tools. The strict guidelines for the realization of the core components were based on these factors:

- Virtual Enterprise Computing combines the advantages of consolidation, optimization and virtualization and enables highly available and reliable environments to be realized. Virtualization allows applications and hardware to be uncoupled, which reduces processing loads whilst improving the utilization of the data center. It also makes an important contribution towards increasing storage capacities and improving energy efficiency.

- Active Energy Management ensures the data center has an efficient power supply and sufficient cooling using free air cooling, separate thermal zone. It includes the overall energy management for the data center, optimized rack layouts, the ideal placement of server cabinets and environmental controls.
- IT Automation delivers all the vital information in order to ensure the data center's energy consumption remains constant. It enables the holistic management of all IT processes based on the IT Infrastructure Library (ITIL) and IT Service Management (ITSM).

Siemens IT Solutions and Services consolidated the two existing data centers as well as a separate facility used for producing electricity into one new data center.

The benefits

- Storage requirements reduced by 60% through virtualization and consolidation
- Cost savings thanks to a reduction in power consumption of nearly 37%
- Considerable increase in energy efficiency (average PUE value)
- Improved server utilization: 50% increase in server efficiency through the use of cutting-edge virtualization technologies
- Cost benefits thanks to simplified support and maintenance, including remote monitoring
- A reduction in customer costs through the use of a shared infrastructure

Our services

- Planning, designing and building
- Implementing and operating the Transformational Data Center

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