



SAP R/3 mega project at RWE Energie: More than 10,000 users on IBM S/390.

RWE AG is Europe's largest privately run energy group. Its main focus is electric power supply, along with gas, heat and water supply. The company draws on an energy mix of lignite, coal, nuclear energy, and gas and on the renewable resources of sun, wind and water to supply about 3 million collective and special customers in industry, commerce and trade sectors. The German customer base includes about 1,300 cities and communities. During the fiscal year 1998/99 (July 1, 1998 until June 30, 1999) 18,405 employees produced a revenue of close to EURO 7.9 billion.

Energy markets are on the move in a broadened playing field, and the opening of German and European markets poses great challenges to power suppliers. A dramatic price war is being waged in all market segments, and the volume of short-term commercial transactions is growing steadily. New, globally active competitors are storming the European market, making it more important than ever to set the stage in time for an equally successful future. RWE Energie in Essen – the independent management firm responsible within the RWE group for the group's energy product line – has formulated a forward-looking strategy that takes globalization into account. One project already completed forms the information-technology basis of support for the company's future activities – the conversion of all business processes to the SAP R/3 system.

An ingenious concept

RWE Energie started thinking about replacing its older systems and standardizing individual solutions as early as the end of 1995, with the aim of reducing time-consuming care and maintenance of individually designed systems and replacing non-Y2K-compliant solutions. The R/3 option seemed to be the obvious solution for RWE Energie, as several companies in the group had already installed SAP software. The choice of a hardware platform was not as easy, because it was already clear to all involved in the process that the scale of the solution appropriate for RWE Energie would have to surpass everything that had been discussed up to that point. Together with sizing specialists from IBM and SAP, various scenarios were

Industry	Energy supply
Application	SAP R/3 Modules FI, CO, SD, MM, PM, PP, PS, TR, QM, BC
Software	OS/390 AIX Tivoli
Hardware	IBM S/390 IBM RS/6000 SP

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devised that offered an understanding of the technical capabilities of the hardware. The final choice was the IBM S/390. Although it was just taking its first steps, it was the only platform with the potential for a mega-project of this type.

The preparatory phase that ran simultaneously with the selection of hardware was used for an extensive analysis and final optimization of business operations, and in 1997 the system was customized for content during the coordination and integration phase. The isc team (RWE Energie's IV-Service-Center) designed a three-tier topology with a multi-layer master concept. This means that every new SAP release and every new function will be integrated using a master version filter, tested, quality-controlled and transferred to the operational system and to other subsystems. More than 20 SAP R/3 installations comprising various training systems are in operation at RWE Energie.

Preparing for the ,Big Bang'

While the master concept was in its last stages, the operational behavior of RWE Energie's SAP system was observed for the first time in a live setting. Two pilot companies launched their operations on July 1, 1998. The Gundremmingen nuclear power plant and EVS AG in Chemnitz were chosen to supply descriptive experiential data and information on risk management in a „big bang“ conversion. About 1,000 R/3 users put the system through its paces. By then, new performance measurements had bolstered the project team's confidence in the IBM hardware even more.

On July 5, 1999, the SAP system was ready, and the switch was flipped. With up to 2,500 users per day logged on simultaneously and more than 11,000 potential R/3 users, RWE Energie's SAP system is currently the world's largest installation on IBM S/390. The number of dialog steps exceeds the 2.5 million line on many days. Meanwhile, the database has expanded to more than 100 GB, with 0.3 GB added daily, with the system's high performance level and stability being remarkable. The average response time for an R/3 transaction is less than 500 milliseconds.

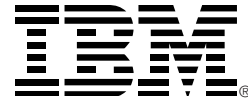
„With the S/390, IBM offered us a platform that guaranteed the utmost reliability and the highest availability. That is the essential requirement for the seamless operation of our huge SAP system.“

Rainer Freynik, isc Infrastructure and Service Manager

Technology to meet the highest demands

On balance, 46 of the 71 old software systems were replaced with SAP. A further 25 programs, including for example marketing applications and geographical information systems, were linked to the R/3 system using interfaces. In the Neurath data center, RWE Energie operates four different IBM S/390 systems with almost 2,000 MIPS and three IBM RS/6000 SP with 54 nodes accommodating, among other things, seven SAP systems. Add to this disk storage systems with more than 5.3 terabytes of capacity. Nine tape storage systems complete the picture in this mega-installation. Another IBM S/390 and two RS/6000 SPs with 60 nodes for other applications are in operation at the Essen data center. RWE Energie was supported in its creation of the overall IT infrastructure concept by an expert IBM Global Services Team.

To guide and oversee an installation of this size efficiently and securely, RWE Energie chose the Tivoli OPC system management tool for all of its job scheduling, monitoring and controlling needs. Backups are done with the help of DB2 split-mirror functionality and IBM RVA and PPRC, guaranteeing uninterrupted operation of the system. This split-mirror solution allows the system to be backed up without penalizing regular operations and brings the goal of zero down-time operation into view. No transaction is lost; the immediate availability of an accurate backup copy guarantees the seamless resumption of regular operations in the event of a catastrophe. For RWE Energie, this spells security and availability in the highest degree.



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