Simply brilliant – brilliantly simple: zSeries at Eberspächer.

The implementation of 20,000 solutions and over 2,000 patents has established Eberspächer GmbH & Co. KG's exhaust technology division as a leader in this field for over seven decades. The company, which works primarily in close collaboration with well-known car manufacturers such as Audi/VW, BMW, Daimler Chrysler and Renault, is a partner for development issues, a system supplier and a designer of complete and precisely co-ordinated systems for exhaust purification and soundproofing. The pre-production center for research and development is located in Esslingen close to the river Neckar, whilst the central production site is situated in Neunkirchen on the Saar. It is here that high quality exhaust components and systems are produced in a manufacturing group with its own plants in the USA, France, Great Britain, the Czech Republic, Brazil, South Africa and India. In addition to exhaust technology, the activities of Eberspächer extend to vehicle heating and glass car components. In 2001, the international Eberspächer group comprising 23 companies in 12 countries and a total of over 5,200 employees generated an estimated 1.64 billion euros.

Full service – practised for years

Being the first equipment supplier of exhaust technologies to operate on a global scale, Eberspächer has always been aware of its client's needs. The Skill Centres in Esslingen and Neunkirchen are supported by a broad manufacturing network and the required experience. This makes the expertise and the systems available wherever clients need them. Logistical and economic factors have increasingly shifted assembly activities into the hands of the actual car manufacturers.

For an exhaust system to deliver optimum performance there needs to be perfect interaction between its individual components, i.e. continuously optimized engineering from the cylinder outlet down to the tailpipe, precisely adapted to the relevant design requirements. As a technology and service partner for trade, industry and garages, Eberspächer used SAP R/2 since the end of the 1980s. In 1998, following a brief evaluation of other ERP suppliers, the required migration of the individual system resulted in the entire Eberspächer group opting for SAP R/3. As a result of targeted interface planning, Eberspächer was able to reduce

Industry	Automotive
Application	mySAP.com mySAP Automotive
Software	z/OS™ AIX® DB2® Lotus Domino Linux™
Hardware	IBM @server®zSeries™ IBM @server®pSeries™ Enterprise Storage Server™ (ESS)

Eberspächer

"With SAP you can have a brilliantly simple system – if everything runs on a server like the zSeries."

Theo Krämer,
Head - Eberspächer Computer Centre

its migration expenditure for the interface programs by 90 %. According to Theo Krämer, Head of Eberspächer Computer Center, "All we had to do was simply copy the existing 285 DB2 tables to the 20,000 DB2 tables in SAP R/3. We were able to read and write to these tables using both SAP R/3 and the old system. This made the switch to the new mySAP.com solution completely trouble-free".

SAP the basis for the manufacturing group

Like the car manufacturers themselves, Eberspächer operates on a global level. Success is all about time: rapid product development, just-in-time delivery and just-in-sequence assembly. The SAP industry solution mySAP Automotive, wich converts multi-layered planning and special business processes into a logical and efficent sequence of operations, forms the backbone of dispatch control. Additionally, by using the latest internet technology, mySAP Automotive allows smooth integration and co-operation between internal and external organizations. As Krämer says "The production planning of an exhaust system is performed entirely in SAP production planning, as the relatively simple structure of our bills of material can be mastered even without the SAP Advanced Planner and Optimizer."

High availability crucially important

As an automotive supplier with 21 shifts weekly and round-the-clock operation 7 days a week, for Eberspächer high availability is absolutely crucial. According to Theo Krämer: "A system failure means a supply bottleneck and these days no-one can afford that." In addition, three on-site assembly plants operate just-in-sequence and therefore also require absolutely maximum availability. "We did actually take other platforms into consideration, but our positive experience with the zSeries, which we have been using for many years in other areas, prompted us to go the whole way with it." The zSeries offers the assembly plants a reliability level of virtually 100%. "If the 99.99% high availability were no longer sufficient for us we could set up a sysplex at any time, but I think that with the 5 minutes planned downtime per year we are approaching our goal of zero downtime quite nicely already. Also, the zSeries offers us enough scope for our constant data growth of around 28 GB per month," explains Theo Krämer.

zSeries as application server

As a development partner of leading car manufacturers, Eberspächer is always at the forefront of technology. Eberspächer has proved its propensity towards innovation in the IT sector by participating in the SAP application server on zSeries pilot program. Back in the summer of 2000 the company was the first customer in the world to go into production with this solution. The application server processes also run alongside the SAP database on one and the same server. A message and an enque server, a spool process, two UPD updates and one UPD2 updates run for SAP around the clock. During the day, from 6 a.m. to 6 p.m. an additional twelve dialogue and two batch processes are in operation, between 6 p.m. and 6 a.m., ten dialog and four batch processes. Theo Krämer enthuses: "Virtually all company data is kept centrally on one system with maximum availability. Thanks to standardization and optimization, everything is still being run by a small team in the computer center. In addition, the IBM DB2 database for z/OS is completely robust and easy to handle whilst the online reorganization has delivered some quite substantial improvements for us".

Disk back up is carried out via the Hierarchical Storage Manager (HSM) from z/OS direct to the IBM Enterprise Storage Server (ESS), which is designed for a data volume of 2.1 TB. Back-up of the data from the open systems and the PCs is also controlled via the zSeries, which alone sums up to a data volume of 400 GB. The files from CATIA as well as comprehensive quality reports with JPEG images involve a further high burden. Following the replacement of the Tetragon system with the ESS, the access times for Eberspächer exhaust pipe technology were halved; this was achieved with over 1,000 users at the time. For testing and development issues, Eberspächer relies on IBM RS/6000® (now known as IBM @server pSeries).

Linux on zSeries – the path to the future

Eberspächer's high degree of innovation is also reflected in its choice of operating systems. Alongside the proven z/OS some solutions are now running under Linux. On a separate LPAR of the production system the mySAP.com solutions run in application server mode under Linux. Krämer explains the reasons for this strategy: "We now run all CPU-intensive processes under Linux, because it has proved to be more cost-effective and is considerably quicker. However, we are continuing to operate data-intensive processes on z/OS, because for us the security and the ease-of-use were deemed more appropriate for our mission critical data. In this way we can exploit the benefits of both operating systems and also make full use of our hardware's potential". Establishing the mySAP.com solutions in Eberspächer's manufacturing plants outside Germany will occupy Eberspächer even more in the next few years. "Thanks to the multilingual nature of the system we are ideally equipped for the worldwide rollout. When we have achieved this we will give thought to a data warehouse solution as well as e-market places. But perhaps even before that we may have another opportunity to demonstrate our capacity for innovation", says Krämer with a smile.

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