



Toyota Information-Systems: No mission is impossible

With 87,000 registered vehicles in 2000 and 2.7 billion DM in sales, Toyota Deutschland GmbH has established itself as the number one Japanese importer in Germany. In addition to its vehicle and replacement parts business, other activities of the Toyota group are conducted at the company's central headquarters in Cologne. Toyota Kreditbank GmbH and Toyota Leasing GmbH provide auto dealers and consumers with attractive financing and leasing models, and it's from here that Toyota Motorsport GmbH participates in Formula 1 racing. Toyota's IT is handled by Toyota Informations-Systeme GmbH (TIS), a subsidiary of Toyota Deutschland. Having grown out of the IT department in 1990, its approximately 70 employees now develop and support the SAP system, various systems developed in-house on a host basis, as well as the proprietary Dealer Management System for Toyota and its 550 dealers.

Possible: individual solutions

Toyota has been working with SAP solutions since 1994. To make the transition into the new millennium and to the euro as easy as possible, the importer in 1997 decided to migrate from SAP R/2 to SAP R/3 3.1h. The migration was completed in three phases by November 1999. During the course of the transition, 1,200 modifications were made to the SAP R/3 system, with which TIS completely fulfills the subsidiary's needs as an importer, as well as the requirements of its dealers and the Japanese parent company. In the area of sales and distribution, a vehicle search and order system according to classes was developed, as well as the possibility to generate assignments of vehicles to geographical and organizational units from the sales side. The SD replacement part and accessories process was expanded to include specific procedures for parts linking and

Industry	IT-Services
Application	mySAP Financials mySAP Logistics mySAP Automotive
Software	AIX DB2 Lotus Notes
Hardware	pSeries RS/6000



“The automotive sector poses numerous special challenges, but in SAP and IBM we have two strong partners with whom we're happy to meet those challenges.”

Lutz Schröder
Application Development Manager
Toyota Informations-Systeme GmbH



availability checking across all plants, as well as a complex algorithm for determining the delivery sequence of outstanding customer orders. At the time of the release change, in addition to 350 internal users, 730 Toyota dealers were also connected to SAP R/3 via a Java GUI and a CORBA server. From approximately 200.000 material numbers, users generated roughly 230.000 order items in SD – a formidable amount requiring a stable system.

Possible: fewer modifications

To reduce the extent of pre-corrections and modifications, Toyota initiated its migration to SAP R/3 4.6c in 2000. This affected a number of proprietary, COBOL-based applications present on the MVS host, various workflows based on Lotus Notes, and the sourcing processes in the vehicle and replacement part area, which are technically linked to the systems of the corporate parent in Japan or the European headquarters. In this area alone, approximately 80 interfaces needed to be considered. The migration project proceeded on the basis of ASAP for upgrades. Parallel developments for the old release were factored in, as was restructuring the entire dealer organization and migrating the logistics of vehicle offloading in Bremerhaven. Planners focused on careful introduction methodology to make current implementations uniformly transparent.

Possible: generate tools

One important tool for the task was Lotus Notes. TIS has many years of know-how in programming the software, using it for example to purchase office supplies with the order being automatically transferred into the SAP system. For the release change, TIS used Lotus Notes to develop a database of errors still needing to be processed, an issue database covering programming yet to be done, and an acceptance database that monitors and records the implementation of functionality and integration tests in each user department and across all processes. The availability of resources was a particular challenge. Project portfolio management was used to identify risks and solve problems at an early stage. It was thus possible to make authoritative statements about parallel development costs and resource use, which in turn enabled realistic planning. Tracking tools documented the degree

of completion of the modifications, escalating critical processes at the appropriate time. This reduced the risk of project delays, prevented the need for additional new development, and enabled error correction in parallel new developments, and implementation of new functionality. A high degree of security was also provided by the fallback strategy, which would have made it possible to return to the old release up to 15 hours before going operational. With its launch in April 2001, TIS had migrated the SAP system with the FI, CO, MM, SD, WM and PS modules to Release 4.6c – all according to plan and in only nine months.

Possible: highly available IT

With the migration, TIS installed a proven high-availability solution in its IT environment – essential for mission-critical applications like SAP. An IBM @server pSeries 680 with 8 GB of RAM and 6 CPUs acts as database server and handles the current 250 GB load of the IBM DB2 database. Three IBM RS/6000 SP function as application servers in a node centrally administered by the Parallel System Support Program (PSSP). The maximum storage capacity for the production area of SAP is currently at 560 GB and is distributed on 128 SSA disks, on which all data is stored redundantly via AIX mirroring. Data backup takes place online via ADSM to an IBM 3494 Tape Library. Lutz Schröder, application development manager at Toyota Informations-Systeme GmbH says about the IBM @server server: “As an application developer, I want to be able to use the system for my business without having to worry about the hardware. With our pSeries, I can rely on it running smoothly.”

Possible: think about tomorrow – today

Today, all automobile manufacturers are working in the global marketplace, and Toyota is no exception. The trend of fulfilling every customer's requests regarding his or her new automobile places a whole new set of demands of manufacturers and dealers. Success comes to those who can beat the clock: rapid product development, fast assembly and on-time delivery are of crucial importance. Manufacturers need to work with vast numbers of suppliers and partner companies, which requires complex, intricate planning. The SAP

industry solution mySAP Automotive was designed to meet these special requirements by bringing complex business processes into a logical and efficient sequence. mySAP Automotive enables the seamless integration and cooperation of different internal and external organizations, based on the latest Internet technology. This is the next big challenge for Toyota Informations-Systeme. Working closely with SAP even in the development of this industry solution allowed TIS to make numerous conceptual contributions. Lutz Schröder isn't worried about this coming challenge: “mySAP Automotive will noticeably reduce modifications, allow us to work in closer alignment with standards, and reduce our maintenance costs. I hope that in this area too, we'll soon be able to say: Working together with IBM means that no mission is impossible...”



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