Success is team play

The Bavaria is well known for scenic and cultural beauties. Fendt tractors from the Allgäu have built up an extraordinary reputation over the last 70 years based on their pioneer achievements in agricultural equipment technologies. The growing market shares in Europe are the visible signs for the success of Fendt. Fendt represents the High Tech Brand of AGCO Corporation, one of the world's largest manufacturers, designers and distributors of agricultural equipment.

The manufacturing competence of Fendt manifests in three areas: The customer oriented production, the mastery of advanced and forward-looking High Technology and the prize-winning Quality Management. Industry experts refer to the manufacturing plants of Fendt as the state-of-the-art location in the tractor industry.

Right in the heart of the Allgäu is Marktoberdorf, one of the locations of the tractor manufacturer Fendt. Approximately 1,650 employees work at the Marktoberdorf production facility. All tractors from 50 to 270 hp are developed, produced and distributed here. The core of the production is transmission manufacturing and final assembly. The premises of the plant facility are also home to the Data Processing Department. IBM mainframes hosting the OS/390 operating system are in use. The production data is stored in ADABAS and DB2 databases. One of the core applications is an in-house developed "Production Planning and Control System" (PPCS). This system has been developed over the years to meet the multiple requirements of a state-of-the-art production facility. The main development language for the PPCS is NATURAL. The data store is based on ADABAS files. Counterpart to the PPCS is SAP R/3. The SAP R/3 Application-Server runs on WINDOWS NT. The Database-Server is an OS/390 LPAR with DB2. tcACCESS provides the transparent link between these two environments.

Anton Seelos, Project Manager of the Technical Migration Team (SAPR2→R3), describes the reasons for using tcACCESS: "In 1999 we purchased tcACCESS to enable our end-users to create reports and statistics out of our ADABAS files using MS-EXCEL and MS-ACCESS. At this time we were still running SAP R/2 in addition to our own PPCS system. SAP R/2 was based on ADABAS too. Both systems were tightly integrated. NATURAL programs of the PPCS system were accessing SAP R/2 files and SAP-ABAPs accessed the ADABAS files of the PPCS system. We had developed our own interfaces to achieve a full integration of all our business processes. The decision was made to migrate the SAP R/2 platform to SAP R/3 using the DB2 Database-Server on an OS/390 LPAR. The main and most important question however was how to connect these two worlds in a similar fashion we already had and were accustomed to."

Different possibilities and alternatives had been researched. None of them met the criteria and requirements of Fendt. Anton Seelos: "That was the time, when we started to think about using tcACCESS in this scenario. We got in touch with B.O.S. and d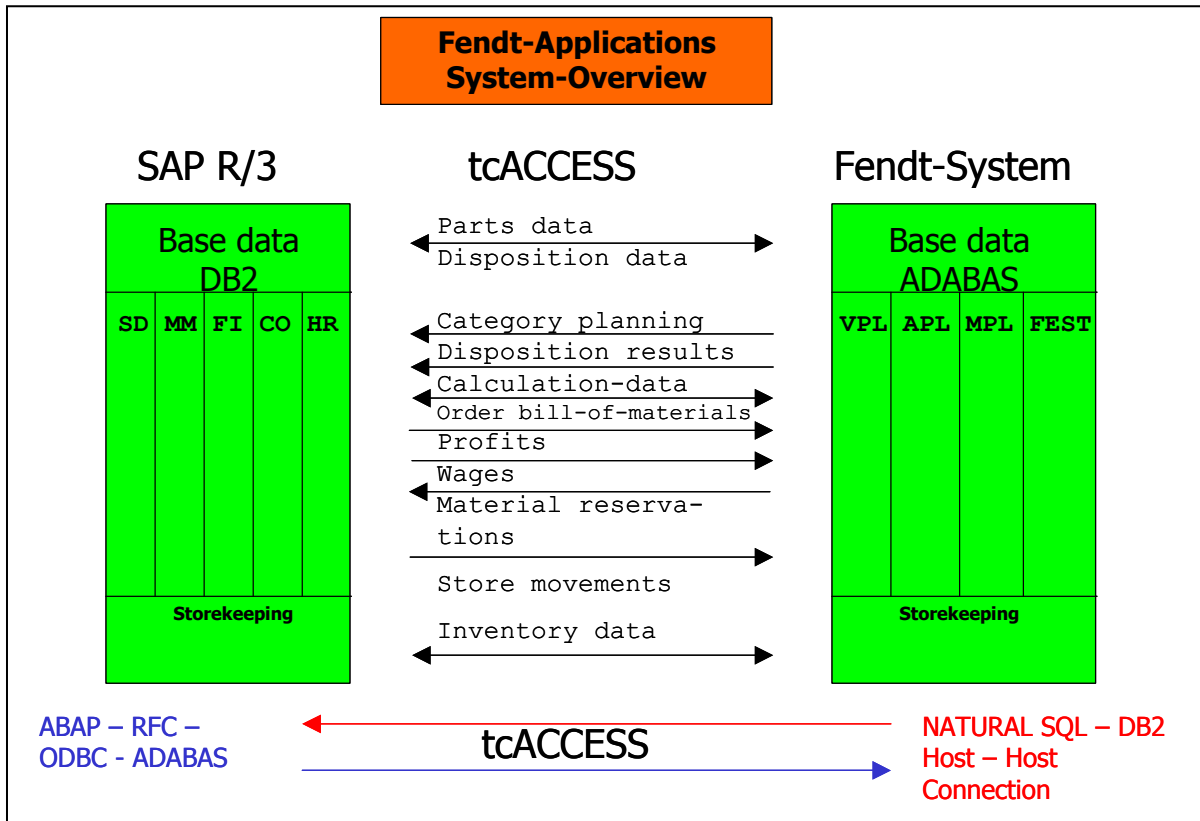eveloped a concept. The first goal was to allow a SQL access from our NATURAL Online- and Batch-programs to the DB2 LPAR. B.O.S. managed to implement this in a short period of time. The fact, that DB2 was running in an LPAR of its own and APPC had to be used for communication didn't turn out to be a problem. However, we weren't happy with the performance in the beginning. A B.O.S. representative spent a day's time, evaluated the situation and made the necessary adaptations to our VTAM definitions. After that, the system was running smoothly and to our expectations."

The preliminary concept for accessing the ADABAS files from SAP R/3 programs was based on the R/3 BAPI interface. This turned out to be not the right choice because of performance implications. Anton Seelos says: "For us, the optimum solution was to use the RFC-protocol. We used Visual Basic to develop an RFC-Server. This server receives RFC-requests from SAP R/3 ABAPs and translates them into plain SQL. We use the tcACCESS ODBC-Server to pass these SQL requests to the tcACCESS mainframe component. tcACCESS accesses the ADABAS files and returns the data back to SAP R/3 following the same path."

Using tcACCESS to integrate the two applications has become even more advanced. All files related to storekeeping had to be mirrored, because Fendt could not give up the in-house solution. The real-time synchronization of the ADABAS files and their DB2 counterparts has become the major task of tcACCESS.

Anton Seelos summarizes: "Approximately 900 end-users work with both systems. Data access is completely transparent to the user of our PPCS system as well as to the SAP R/3 user. We are extremely happy with the implementation. The excellent working relationship with B.O.S., short support channels, the competence of the B.O.S. people, and their fast reactions to our inquiries and recommendations bas built a very trusting relationship. For us, tcACCESS has become a strategic product."

**Fendt-Applications
System-Overview**

SAP R/3	tcACCESS	Fendt-System

**Base data
DB2**

SD	MM	FI	CO	HR

Storekeeping

Parts data
Disposition data

Category planning
Disposition results
Calculation-data
Order bill-of-materials
Profits
Wages
Material reserva-
tions
Store movements
Inventory data

**Base data
ADABAS**

VPL	APL	MPL	FEST

Storekeeping

ABAP – RFC –
ODBC - ADABAS

tcACCESS

NATURAL SQL – DB2
Host – Host
Connection

The NATURAL applications of the PPCS-system use the tcACCESS SQL-interface to directly access the DB2-tables of the SAP R/3 Database-Server. Both applications run in different OS/390 LPARs.

SAP R/3 ABAPs send RFC requests to the RFC-Server. The RFC-Server has been installed on the SAP R/3 Application-Server. Fendt developed the RFC-Server in Visual Basic. The server takes the RFC-requests, translates them into SQL-syntax and passes them to the tcACCESS ODBC-Server. The requests are being forwarded to the tcACCESS mainframe component, which accesses the ADABAS files based upon the SQL-statements. Result sets or return codes are being passed to SAP R/3 following the same communication path.

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