



Smooth Operation

Quality care under a single roof and quality information through a single portal

Volker Lowitsch
CIO, University Hospital Aachen

Industry

Healthcare

Business Issue

Integrating and analyzing information from multiple operational systems.

Solution

SAS/ACCESS® Interface for R/3 and SAS® Strategic Performance Management.

Benefits

SAS offers internal efficiencies, better resource management, reduced debt servicing and other financial benefits.

“Without SAS, UKA management would not be able to make the rapid and goal-oriented progress that has already delivered demonstrable cost advantages.”

Professor Dr. Walter Behrendt
Director of Medicine

University Hospital Aachen (UKA) is unique in Germany: It combines every aspect of medical and dental patient care under a single roof. UKA also provides common research facilities for engineers, scientists and physicians. There are currently 6,286 employees at UKA, of whom 67 are professors, 1,226 are scientific and 4,994 are nonscientific workers in 33 clinics, 21 institutes and in hospital management. The central surgical department has a complement of more than 30 operating theatres, while a further clinical center specializes in outpatient care. The hospital treats 44,000 inpatients and 112,000 outpatients annually.

Since moving into the new clinical complex in 1984, UKA has been responsible for coordinating the functions of almost all Faculty of Medicine services: clinical, theoretical and clinical-theoretical institutes, research establishments, lecture rooms, schools for specialized occupations of the health service; and also public utilities like pharmacy, kitchen, laundry, central sterilization, archive and stock.

Training facilities at UKA are also state of the art, catering to medical and dental students, in-service doctors and general trainees. Some 2,700 students of medicine and dentistry study at the Medical Faculty of Aachen University of Technology (RWTH).

There are many advantages to collocating teaching, research and medical care under one roof; but of course, it also presents many serious managerial challenges, especially at the higher levels of management. UKA represents a huge

investment in public healthcare, bringing together an extensive network of services and specialist activities. Delivering cost-effectiveness – optimum return on the investment – depends above all on effective information flows and comparable information to answer questions like, “Where is our organization strong? Where is it weak? And, what are the root causes of such weaknesses?” Only when you have answers to these questions can you set priorities and targets for corrective action.

Yet as is usually the case in any large enterprise, public or private, UKA had evolved with many heterogeneous IT systems. “We had noncomparable analyses based on different analytical systems and nonuniform terminology,” comments Volker Lowitsch, CIO at University Hospital Aachen.

Vast quantities of data

UKA stored data in a variety of sources, operational systems and file formats, with three key systems. First, the main hospital information system, Medico, was supplied by Siemens Medical Solutions and implemented in Oracle and Windows. Second, UKA used a laboratory information system, Swisslab, supplied by Frey. And third, UKA had made a very significant investment in SAP’s R/3 enterprise resource management (ERP) system, implementing the materials management (MM), financial accounts (FI), financial controlling (CO) and human resources (HR) modules.

“We are talking in terms of simply vast quantities of data,” says Lowitsch. Approximately 3.4 million records are updated daily in Medico. Swisslab

generates approximately 10 million records per year while in SAP R/3 there are already 4.3 million records and growing, with the rapid expansion of extractable data from the FI and HR modules.

“When you have so much data in different systems, you inevitably face data integration issues on a daily basis. Managers want to combine medical and financial data to analyze clinical effectiveness,” says Lowitsch. “In addition, there are major data quality issues.” For example, the Medico and Swisslab systems contain information about the same patients, and the Medico and SAP HR systems contain information about the same doctors. Human error and different formats create difficulties when matching these records.



Professor Dr. Walter Behrendt accepts the 2005 SAS Enterprise Intelligence Award on behalf of the University Hospital of Aachen.

However, the challenge for UKA was not simply one of reconciling information from incompatible systems. For example, a big problem existed within the SAP and Medico systems. SAP R/3 and Medico were designed as operational systems, and it is notoriously difficult to extract data for high-level analytical purposes, especially if the data comes from applications (such as R/3 “instances”) written in different modules.

SAS adds value to SAP R/3 data

The recent German healthcare reforms introduced a new urgency to the challenge for UKA. In Germany, healthcare administration is split between the providers (such as hospitals) and the insurance companies (Krankenkassen) that pay the bills. Since the healthcare reforms, the two are required to settle their accounts on the basis of individual

case episodes; to make this possible doctors must record their treatments according to predefined categories. The quicker and more accurately UKA can do this, the quicker it can bill the Krankenkassen – and given that the amounts involved run to more than one million euros per day, reducing delays can save UKA huge interest losses.

So UKA could – quite literally – not afford to leave information in SAP or Medico, because of the limited analytical functions!

Therefore, UKA chose SAS to get control of its information resources, using SAS® Business Intelligence solutions, including a balanced scorecard. SAS’ technology leadership in the sector, its long-term commitment in science and research, its proven analytical tools and multisupplier integration platform were all important reasons for choosing SAS; but Lowitsch says that the standard interface, SAS/ACCESS Interface to R/3, was critical. Implementation of the first interface required some effort, due to the internal complexities of SAP HR. But the creation of further R/3 modules was less demanding, and likewise for the Medico interfaces. Moreover, the maintenance requirement remains low.

In early 2005, for the first time, decision makers were getting value out of their SAP R/3 data, thanks to SAS. Lowitsch says, “There was high user acceptance of the new solution, especially because of the improved data quality.” These users include clinical directors, consultants, medical and commercial controlling managers, center leaders and managing directors of UKA’s business sectors.

They access information through uniform SAS views created within the framework of the pilot project, delivering user benefits in the minimum time frame. Users can now get most of their reports in real time or almost immediately (for example, 80 percent of R/3 inquiries are processed within a day) instead of having to wait for the monthly reporting cycle within SAP or Medico. Lowitsch explains why this has transformed management practices:

“Routine reports in Medico are converted very quickly now, often 1–2 days after the initial request. Before the introduction of SAS, such queries required several weeks of effort – and often the queries could not be answered at all. As for SAP R/3, many queries could not be answered internally at all because of the inflexibility of SAP’s ABAP query tool, so we depended on external consultants.”

Communicating with a common language

In practical terms, the ability to produce reports means patients are more likely to be treated quickly, and at a lower cost. The planning of operations becomes more efficient if you can produce reports that show where the problems are over the course of a long process. Reporting in SAS means that operating theaters, doctors and technicians are used optimally, minimizing waiting times for patients and maximizing revenue inflows from the Krankenkassen.

UKA has now brought all of its knowledge systems into a single enterprise wide balanced scorecard solution with SAS Strategic Performance Management, supporting strategic management and governance of the entire hospital. In addition to hard facts and figures such as case data, the balanced scorecard provides information, including levels of patient satisfaction and the success of interdisciplinary cooperation.

“With SAS, we have placed our hospitalwide information management on a completely new footing,” says Lowitsch. “Thanks to SAS we are now communicating with a common language at UKA: We can see all the important performance data in virtually real time and we can have complete faith in the integrity and consistency of our information. The SAS system is highly reliable.”

Professor Dr. Walter Behrendt, Director of Medicine at UKA, adds, “Without SAS, UKA management would not be able to make the rapid and goal-oriented progress that has already delivered demonstrable cost advantages.”



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TO KNOW.

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