December 1999

SAP R/3 Implementation at the ETH Zurich - A Higher Education Management Success Story?

Harald Mahrer

Vienna University of Economics and Business Administration, Austria

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http://aisel.aisnet.org/amcis1999/272

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Enterprise systems have arrived in the higher education sector. Exposed to increasing external pressure universities are being affected by global economic changes, ongoing technological innovation, changes in demographic structures and substantial financial cutbacks. By adapting to these environmental changes many universities are implementing reengineering projects to improve their business processes. Relying on the implementation of successful enterprise systems universities are attempting to face the managerial challenges they are being confronted with. This paper shall describe the SAP R/3 implementation project at ETH Zurich in Switzerland and the university management team’s implementation strategy which has been relatively successful, though questionable.

Research Question and Study Design

The higher education industry is changing. Environmental impacts are confronting university management levels with a set of totally new challenges. Traditional structures and processes are being questioned, changing public expectations and growing competition within the industry are increasing external and internal pressure. The intensity of competitive rivalry (Dill and Sporn, 1995), increasing student numbers and budgetary cutbacks (Küpper, 1998), ongoing technological innovation (Wildberger, 1997), increasing quality expectations (Maier and Sporn, 1998), or internal patterns such as academic individualism and bureaucratic organisations (Müller-Böling, 1998) are shaping the higher education industry. Figure 1 lists five of these environmental impacts. All these changes are bringing about controlled and uncontrolled adaptations. To survive in the growing education market of the 21st century university management groups are being asked to act in order to prepare their organisations for new competition. One way of doing so is to improve all internal business processes by carrying out reengineering or change projects (Hammer and Champy, 1993). A very popular way of achieving certain reengineering project goals is the implementation of an enterprise system which mainly enables the integration of data used throughout the entire organisation.

Successful reengineering combined with the well-planned and focused implementation process of an enterprise system can potentially lead to cost reductions, while increasing effectiveness and higher overall quality for certain business processes. Such implementations can also have unpredictable impacts on the structure and procedures of organisations. By its very own nature an enterprise system imposes its own logic on a company’s strategy, organisation and culture, as a lot of research projects have already shown (Davenport, 1998). When considering implementation combined with business process reengineering managers need to communicate their goals and long-term perspectives in order to win the support of all members of the organisation affected by the changes (Mahrer, 1999). As many managers consider the installation of an enterprise system as primarily a technological challenge it is important to see the more holistic approach. Only a general manager is capable of acting as a mediator between the imperatives of the technology and the imperatives of the business. Management may soon find itself under the control of the enterprise system if the development of the system is not carefully controlled (Davenport, 1998). Guiding the university through these difficult stages of transformation and adaptation can only be achieved by outstanding performance of university management teams (Gumport and Sporn, 1999 and Wildberger, 1997). As we assume that this holistic approach has to be identified by university management groups to successfully carry out SAP R/3 implementation as part of a business process reengineering project an analysis of how to successfully organise a university related enterprise system implementation project needs to be done. It was decided that an in-depth case study would be the most appropriate method of collecting the required data to find answers to our research questions.
(Yin, 1994). Therefore certain “success cases” needed to be found. Finally ETH Zurich was identified as a possible unit for analysis for “best practice”. In 1995 this Swiss university decided to implement SAP R/3 for some of its administrative departments. For the collection of data a wide range of documentation and archival records were used. However focused interviews were used as the primary source of information. During the analytical phase different techniques were combined in order to produce compelling analytical conclusions.

**SAP R/3 Implementation at the ETH Zurich**

ETH Zurich - a public technical university in Switzerland – with an enrolment of 11,700 students and 7,500 members of staff dedicated to excellent teaching, research and administration. It is also currently being confronted with the same environmental changes which are to be seen in the whole higher education industry globally. During the spring of 1997 the university board announced “Academic Vision 2011” which was very similar to a strategic master plan for the following fifteen years. This plan had been developed by members of all various segments of the university and suggested that ETH Zurich should (1) concentrate its powers and focus its tasks on its public mission, (2) ensure high quality teaching and research and (3) secure its disposing capacity. According to the “Academic Vision” increased effectiveness and efficiency should be ensured through a rolling organisational development based on periodic reengineering. In addition ETH Zurich has been faced with the strong need for renewing or replacing its information systems to deal with its financial and human resource administration. According to governmental rules SAP R/3 applications were to be used for new financial applications in the public sector. ETH Zurich’s management decided therefore to implement SAP R/3 for its financial and human resource departments. Its main project goals were defined as increasing cost control and flexibility and to eliminate certain process instabilities in order to (1) improve internal business processes, (2) enable cost analysis, (3) increase user-friendliness, (4) stabilise staff cost accounting, (5) avoid further island-solutions, (6) replace existing IS-applications and (7) introduce the PC as the all-purpose equipment for the individual workplace.

After looking at similar implementation projects the university management team decided to hand over the overall project management to its operative management. Department managers were made responsible for the project and had to design and organise the whole project structure as well as the implementation process. This “down-to-earth” approach was supposed to enhance cooperation of all affected university members to ensure the overall success of the project. The project council consisted of a member of the university board, managers of all departments and the members of the overall project management team. The project council held a relatively formal position and was given regular reports on the status of the project. The overall project management was responsible for the actual management of the project and had been given the power to decide about nearly all matters concerning the project and was also responsible for setting up a framework of rules and guidelines for the implementation. The overall project management consisted of the managers of the finance, human resources and IT-department completed by an external project co-ordinator who had considerable SAP-implementation experience. The integration group was formed of all project group leaders with a project co-ordinator. An attempt was made to solve all problems and co-ordinate all project related tasks within this group without bothering the overall project management group. During the actual implementation all external consultants solely reported to the integration group. On the project group level only members of ETH Zurich were included in the different teams. They had been released from their positions throughout the administration departments for the duration of the project in order to concentrate all their efforts on the implementation. This was decided in order to secure critical knowledge to enable the members of the project to integrate this know-how into the affected departments after the project had ended. In addition to all these groups the overall project management group introduced the position of external quality manager. The quality manager was not bound to a certain group or team but was responsible for quality assurance by working as a loose link between the integration group and the overall project management group. All external consultants supported the whole project team during the project, especially by doing a lot of customising as well as solving technical problems.

![Figure 2: Implementation Project Organization](image-url)

Figure 2 shows the chosen design of the whole project organisation with the project council at the top and various project groups at the operative level. After looking at similar SAP R/3 implementation processes and identifying common problems the project management group decided to set up a framework of rules and guidelines to secure
success of the project in order to avoid overspending and to meet all deadlines:

- The opening of tenders for external consultants was to be prepared by all project members.
- No external consultants were to participate in the different project groups on the sub level and all documentation had to be completed by the project groups.
- Prior to the actual implementation all tasks were to be simulated with special prototypes to give the project group members a feeling for complexity as well as any possible problems.
- If differences between current business processes and the generic processes supported by R/3 were identified the current business processes would have to be adapted to the R/3 processes.

**Project Conclusion**

Since the completion of implementation in January 1999 and going live the majority of project members has been quite satisfied with the overall outcome of the project. The project management group has met all the deadlines and there has been no overspending. This is very unusual for an SAP implementation project. The project management group is certain that the strong integration of members of all different departments has been mainly responsible for the outstanding success. When questioning all members of the different departments not participating in the implementation project many controversial opinions and harsh criticism were given, mainly that a SAP project is no IT-project but an organisational project. Therefore everybody has to be aware of the fact that the processes have to be adapted or the software has to be customised and this is very expensive and time consuming. R/3 applications are working as designed but they cannot be tailored extensively. Up to now no single workflow has been optimised, there has been no reengineering and there has been no increase in user-friendliness. Business processes are less flexible than before and the technical effort to achieve certain results is out of proportion to the suitability of the software. Some people say that a competitive advantage in relation to some administrative tasks has been lost during the implementation. Besides reaching some of the defined project goals and carrying out a money and time saving project it appears that the project management has learned the wrong lessons from similar projects by attempting to stick to the cost and time limits. The *victims* have been made *perpetrators*. This special project design has ensured that there has been no resistance to certain project rules. Operation successful – patient dead! Looking at its main strategic guidelines it has to be said that the university’s top management has failed to fulfil its controlling function. As some of the critical business processes are now under the control of the system the management itself has therefore lost a great deal of flexibility. Giving these insights and the special situation in the higher education industry it is more dangerous for universities than for organisations of the private sector to carry out enterprise system implementation projects. The university’s management – perhaps not used to such adaptive and critical reengineering and change projects - has to be involved directly in planning and implementing an enterprise system, not only to secure competitive advantages but to avoid many further drawbacks which cannot be identified by managers on more operative levels.

**References**


