

A Case Study of ERP Implementation for Governmental Agencies

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ABSTRACT

An ERP system is known as an integrated information system for business enterprises. The purpose of this paper is to show the implementation of ERP systems in a governmental agency. Bancroft is recommended as an implementation method for ERP. It is well thought out and provides a virtual skeleton to provide assistance in the transition activities needed by each company.

INTRODUCTION

An ERP system was known as an integrated information system for business enterprises. Can a commercial-based ERP system be applied to a nonprofit organization such as a governmental agency? What implantation method is appropriate for the nonprofit organization? Which ERP modules are popular in the government agency? The purpose of this paper is to show the implementation of SAP in a governmental agency. This paper explores the methods in which SAP software is implemented in organizations and tries to find the best method available. For the security purpose, “NGA” (Non-profit Government Agency) is used to represent this agency. SAP R/3 was recently implemented at all NGA centers. SAP R/3 is the most popular ERP systems in the market today.

SAP AND ITS CURRENT IMPLEMENTATION

Why are so many companies selecting SAP R/3? SAP R/3 is not the only computer-based system available. Other providers, such as Baan, PeopleSoft, and Oracle also offer such systems. It is the size of SAP R/3 that attracts so many clients. SAP is more than four times the size of its

competitors and has become the choice of many big-name companies (Gibbs, 1998). SAP R/3 has much to offer to its clients. Many of its offerings set it apart from its competitors. SAP R/3 is fully integrated, real-time application with a single file structure. It has built in security features and an ability to trace transactions from beginning to end. The system also provides information across the organization. When one piece of data is entered into the system, all users of the system can use that piece of data. Data is no longer controlled by an individual functional area (Gibbs,1998). This centralization of information requires the business functions to come together as a team in both the use and implementation of the systems (Hirt, et. al., 1999).

Even though SAP R/3 has much to offer to its clients, there are a few issues, which prospective clients need to consider. The three main issues to consider are: 1) a lack of flexibility; 2) the complexity involved; and 3) whether or not it fits your corporate strategy. SAP R/3 centralizes and structures business processes and functions in a way that may not be suitable for all businesses. Customization of the system may also be too costly, time consuming, and complex. Other complexities involve restructuring the business processes and mindsets of people within the company (Scapens, et.al., 1998). Research has found that the larger the company is, the more cumbersome changes will be. Size of the company also contributes to the resistance to change (Francalanci, 2001). Due to these complexities, many companies are forced to hire consulting firms, which are very costly (Hirt, et. al., 1999). However, the primary issue that needs to be addressed, is the fit of SAP R/3 with the type of business you conduct. SAP R/3 does not give much flexibility to those companies that have unique operating techniques. As these issues note, SAP R/3 is not for every company (Scapens, et. al., 1998).

Implementation of SAP R/3 is very demanding. It requires teamwork, planning, communications experience, and a lot of trial and error (Bancroft, 1996). Many believe implementation is a short-term activity that is simply the building of tables and entry of legacy data to new system. In fact, implementation can take many years and requires skills from all business functions. It is also demanding in the fact that while the implementation activities are conducted, the normal business activities have to continue (Ochs,1998). This was of great difficulty to NGA. NGA took its current workforce, with a few additional contractors, and tried to keep business running “as usual” while implementing SAP R/3. In some cases, such as Stennis Space Center, the workforce was stretched to its limit.

When implementing SAP, the role of the internal auditor becomes significant. Internal auditors need to be sure to take initiative in becoming involved in the project steering committee. By sitting on the steering committee, the internal auditor can be sure that installations are complete and consistent across departmental units. Both of these issues, if not handled properly, can be the demise of a successful implementation.

When implementing a system such as SAP R/3, processes must be changed. The auditor should take initiative in the reviewing of new processes. They should assist in identifying risk and finding new processes to address those risks. The auditor should also promote the use of such tools as the Business Workflow (BW) in SAP R/3. This system provides an automated, well-controlled flow of transactions throughout the system. Many companies choose not to implement BW due to the work involved in setting up the process flow correctly, but this tool can be very powerful (Gibbs, 1998).

Another issue concerning successful implementation is the necessity of a team that represents all facets of the business. Many companies have implemented SAP without evaluating the infrastructure of its computer systems. Without adequate infrastructures, the implementation of SAP could come to a screeching halt. Also, the project team must be comprised of users, IT specialists, and top management. Without the support of all users, the implementation could be the most costly failure the business has ever experienced (Gibbs, 1998).

Amoco is a prime example of successful implementation. Amoco concentrated on change-management and brought in support from its own personnel. Their consultants were also sure to include representatives from all aspects of the business (Jesitus, 1997). Building a team environment by utilizing all facets of the business is a key to implement success. Not only does it bring together all functional aspects, but it also creates employee buy-in. Amoco also used a method of training that gave the employees a direct comparison between the old system and the new. The employees were given the opportunity to enter data in the legacy systems while entering it into SAP. This gave them hands-on experience (Jesitus, 1997).

IMPLEMENTATION OF SAP R/3 IN NGA

NGA, like Amoco, used a computer-based training (CBT) program to train many employees on various tasks that did not require large amounts of hands-on training. This method is very cost-effective and gives all users consistency among training. CBT programs also provide training that can be accomplished anywhere at any time, and allows the users to learn how to navigate through SAP (Jesitus, 1997). With NGA being such a large organization, CBT was very useful in providing training with minimum cost.

Along with the CBT, NGA and Amoco used Instructor Led Training (ILT). The ILT used by both, allowed a classroom environment with instructors to answer those questions which only end users would ask. This provided the end user with a resource to express concerns and find solutions to problems that may not have already been addressed. Even though both CBT and ILT were utilized, many employees required refresher courses. A company needs to be prepared to provide such a resource (Jesitus, 1997).

Nancy Bancroft has developed a methodology to use while implementing SAP R/3. The first three steps can be accomplished prior to logging on to the new system. Her method begins by developing a high-level design. This task requires a visual depiction of changes that will take place across the company. It allows all departments to see where their functions lie within the overall company goals and how their process will change. Next is the defining of the R/3 hierarchy. This entails structuring the business processes in the same table-driven from R/3 uses. Perhaps the most important step is gaining user acceptance. Without management's support and employee acceptance, implementation can surely be a failure.

Other steps require gaining familiarity with the system. First is the development of the detailed design. Bancroft suggests logging on to the development machine and basically navigating through the functions while notating the design used. Another way to identify problems or new processes is to develop scenarios and scripts to test within the new system. This will identify

problems with the way in which the company conducts business and will allow identification of changes that need to be made. One step, which was of great importance to NGA, is iterative prototyping. This step allows programmers to learn how to configure and use the various tables within SAP, which are the virtual key to success in obtaining desired results. Once each step is completed, the results need to be presented to management, the steering committee, executive sponsors, and other affected parties in an effort to gain final acceptance (Bancroft, 1996).

There have been many companies that have implemented SAP R/3 with varying results. Thermo King, subsidiary of Westinghouse, implemented R/3 in July 1996 and is continuing to install the system in its 16 units. Thermo King notes that its decision to implement parts of R/3 rather than all modules has caused its programmers to develop several interfaces from its legacy system to the new R/3 system. However, Thermo King is pleased with the system and the real-time information it receives for reporting purposes. Amoco is also a satisfied customer. SAP R/3 is credited for pushing Amoco to streamline processes, and develop commonalities across functional areas. However, Amoco takes issue with SAP's credit functions (Ochs, 1998).

Rayovac implemented R/3 in 1999. Rayovac needed a system that would make its operations 2000-compliant. After the ASAP (Accelerated SAP) method of implementation, Rayovac was face with the task of getting employees to adapt to the new system. Upper management has become frustrated with the lack of high-level reporting capabilities, but analysts explain that the problem is not R/3, but the users. Many end-users are accustomed to doing things the "old way" and thus do not properly utilize the functionality of the system. This "Big Bang" method used by Rayovac has caused many employees difficulty in learning the system and is now requiring Rayovac to train its employees on how to productively use the system (Collett, 1999).

Siemens Power Corporation (SPC) also implemented SAP R/3. Not only was the implementation on time, but it was also below budget. SPC noticed an immediate increase in operational efficiency and teamwork among various departments. SPC's top manager has noticed improved communications, and hopes that organizational lines will disappear soon. However, project managers at SPC faced a complex system with little to no training as to how to get usable information from the system. Through one-on-one training, the project managers were able to pick up the skills and knowledge needed to compile useful reports. After the implementation of SAP R/3, SPC as well as NGA, conducted group meetings to discuss lessons learned. This provided a way to disseminate information across functional areas, and give others a heads-up on problems they may encounter along with the solutions needed. SPC still has many modules to implement, but considers their implementation to be a great success (Hirt, et. al., 1999).

NGA followed the methodology stipulated by Bancroft and the same techniques for training end-users as Amoco. Yes, there have been some major growing pains in the transition from legacy systems to those system provided by SAP R/3, but in retrospect, NGA did the best they could have done. However, NGA did complicate the implementation of R/3 with its insistence in conducting "business as usual" and holding on to the "old ways" of doing business. NGA chose to have R/3 modified to fit its business practices rather than changing the way it does business. Many SAP developers, along with various NGA IT personnel and contractors, have built various interfaces to allow legacy systems to interact and function within SAP R/3. This complex web

of subsystems has caused many problems. It has created a dependency on legacy systems that could have been eliminated. This need to continue operation of the legacy system, has limited the amount of cost savings NGA could have received from implementing such an integrated system.

The main need NGA was looking to fill was the ability to pull information from one system that comprises all NGA functional areas and all NGA centers across the Agency. NGA has succeeded by implementing R/3. Managers can now look in to one system and see all the cost associated with each function of NGA. This enables managers, along with congress, to see how NGA is spending its funds. This also provides a means of consolidation of services. Each NGA center currently performs its own payroll, Accounts Payable, and Accounts Receivable functions. With the implementation of R/3, NGA hopes to consolidate those functions by utilizing the functionality of R/3 and providing a central location to conduct those functions. NGA seems to be well on its way to utilizing the functionality of R/3 and continues to conduct on-the-job training for new and continuing employees.

CONCLUSIONS

In conclusion, this paper set out to discover whether or not NGA used a good model of implementation and user training. According to an end-user of SAP, and dealing with the frustrations brought by NGA's implementation of R/3, his thoughts was that NGA could and should have used a better method of implementation and user training. However, through the various readings and accounts by SAP clients, we have found that NGA used the same methodology that many successful companies have used in their implementations of SAP R/3. NGA was also proactive in training its employees on how to use the system productively. Many of the clients listed above chose not to conduct training during implementation, and went on to regret it. NGA's method of training encompassed good practices and was complimented by their production of job aids. These job aids tell each employee how to complete various tasks within the system giving them a virtual handbook of activities.

In recommending methods implementation, we would highly recommend that of Bancroft. It is well thought out and provides a virtual skeleton to assist in the transition activities needed by each company. However, one key factor not addressed by Bancroft, but highly exploited by NGA and Amoco, is the development of various tools in training employees to use the new system. Other companies could also take notice of NGA's job aids.

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