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ERP II: BEST PRACTICES FOR SUCCESSFULLY IMPLEMENTING AN ERP UPGRADE

An ERP upgrade is deceptively complex and can be daunting—especially for organizations ignorant of the massive effort required to do it correctly.

One of the most important IT-enabled business innovations during the past decade has been the emergence of enterprise resource planning (ERP) systems. Lured by guarantees of improved business productivity, streamlined business operations, and increased cost savings, organizations worldwide have launched initiatives to integrate ERP systems into their existing business environments. One study of mid-size to large companies conducted by AMR Research found that 67% of these companies are implementing some form of ERP, while another 21% are evaluating potential ERP systems solutions. As a growing number of companies adopt ERP systems, ERP systems implementation and upgrades are identified as one of the top five IT priorities among global CIOs according to independent surveys conducted by Morgan Stanley [9] and Deloitte & Touche/IDG Research Services Group [1].

Organizations worldwide continue to allocate a considerable portion of their IT budgets toward either completion of their initial ERP system installations or upgrades to their existing systems. A recent study by AMR Research indicates the enterprise application market is expected to grow from $47.8 billion

in 2004 to $64.8 billion by 2009. The study found that 71% of surveyed firms expect to increase spending over the next 12 months, with an average increase of 14.6% [8]. These statistics suggest organizations are overwhelmingly satisfied with their decisions to invest in ERP; however, published reports indicate the successful implementation of ERP continues to be a challenging and sometimes frustrating experience.

Many organizations that have committed significant organizational and financial resources to their ERP initiatives have encountered unexpected system implementation challenges. One survey of ERP project managers found that 40% of respondents failed to achieve their original business case even after being live for a year or more; meanwhile, more than 20% of managers stated that they actually shut down their projects before completion [6]. Often, failure of these ERP implementations has been blamed in large part on poor project management, but numerous articles document the variety of organizational, operational, and technical challenges contributing to the low success rate of ERP projects [2, 4, 7, 11].

Factors that range from weak project leadership to minimal employee product training have resulted in many ERP projects being delivered late and over budget with costs that were on average 25% over their original budgeted amount [6]. The cost of a typical ERP implementation in a Fortune 500 company was estimated as between $40 million and $240 million according to AMR Research. However, a study of large business enterprises found that these firms have spent on average $48 million to date on ERP projects that are only 61% complete [3].

While many firms are still in the process of stabilizing their restructured IT infrastructures and adapting to their newly reengineered business processes as a result of their initial ERP implementations, some organizations are already looking to upgrade their current systems. In a survey of IT professionals implementing SAP conducted by Larsten Business Reports in 2003, an estimated 45% of respondents indicated that their organizations were actively investigating plans to upgrade their ERP systems. Business executives have indicated that the difficult decision to fund an initiative to upgrade their initial ERP application implementation (such as ERP II) is being guided by both internal and external business pressures on their organizations. ERP II has become a push-pull project decision.

Organizational push. The top business executives who spent significant organizational funds to establish an initial ERP architecture are anxious to leverage this investment to quickly garner additional business value. Many organizations are looking to expand the capabilities of their systems by integrating new modules, or add-ons, into their core ERP system implementations. Much of the pressure to add new modules to their ERP systems seems to arise about six to 12 months after an organization has gone live with its initial ERP implementation. During this period, organizations begin to realize direct business benefits from their initial ERP investments. As organizations reap the financial, operational, and competitive benefits from their initial system implementations, they start to explore new avenues to further utilize the business value of their ERP systems. Top management believes a greater investment in their ERP system will result in an even greater return on that investment.

Vendor pull. Organizations are also being strongly persuaded by their ERP software provider to upgrade to newer versions or releases of their application suites. ERP vendors pressure organizations primarily as a result of their product financial pressures. In order to improve the functionality and quality of their software offerings, ERP application vendors continue to develop updates for their product suites.

A recent study by AMR Research indicates the average time between software upgrades has shrunk from three years in the early 1990s to 18–24 months today. Although ERP vendors must continue to enhance their product to remain competitive, these vendors simply cannot afford to support simultaneously a large number of versions of their applications suite over an extended period of time. To address this financial challenge, many ERP software providers are now issuing de-support dates for earlier releases, at which time the ERP vendor tells clients that older versions of the ERP will not be supported after a selected date. Organizations with older versions of the ERP product suite are then faced with the difficult decision of either upgrading their ERP system or risking total responsibility for maintenance of their ERP systems.

Although ERP product vendors and organizational leadership may be enthusiastic about launching an ERP II initiative, members of the project teams responsible for the completion of the IT project that the *Wall Street Journal* characterized as a "root canal for your organization" may have some well-founded concerns and trepidations about beginning this endeavor. In order to avoid many of the organizational, cultural, and operational challenges that plagued the vast majority of initial ERP implementation projects, ERP project teams are looking to learn

from the experiences of other organizations that have already completed their ERP upgrade projects. The project recommendations selected for inclusion in this article represent a summary of the eight important findings from various case studies and research efforts on the ERP upgrade process. The purpose of this article is to provide organizations considering undertaking an ERP upgrade initiative with some of the best practices as identified by firms that have completed their ERP II projects. The goal of this article is to give members of ERP II project teams proven and practical recommendations for successfully completing an ERP system upgrade from planning to implementation.

Finding #1. Build your business case on new functionality. The vast majority of firms that chose to undertake ERP projects based their decision on vendor promises that their organizations would realize significant cost savings in their core business

to fully complete an ERP II project varies based on a myriad of technical, organizational, and operational factors, on average an ERP II project costs 18% of the initial ERP project cost, according to one report by AMR Research. Another study by Gartner found ERP upgrade projects can cost as much as 30% of the original ERP implementation price and can take more than a year to complete as companies restructure their business processes and update their technology infrastructures. Organizations that fail to treat the upgrade as a new development project invite disaster by introducing otherwise avoidable mistakes into the effort. The most common resulting mistakes are limiting project planning time, rushing to implement system changes, and failing to thoroughly test all facets of the updated ERP environment. Firms that use proven systems development methodologies that are both well known and readily accepted by organization employees reduce the risk of the types of mistakes associated

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processes. Since many firms are still waiting to see tangible business benefits from their initial investments, organizations are justifiably reluctant to undertake a project to upgrade a system they had difficulty implementing successfully. These concerns are evident in a study by AMR Research that found organizations spent more time selling the project internally and obtaining project funding than they did actually doing the ERP upgrade. In order to build a successful business case for funding an ERP II project, organizations must stop using cost savings as their sole motivation and instead focus on selling the business benefits to be gained by adding enhanced functionality. Organizations that have made compelling business cases for funding ERP II projects cited the addition of new system functionality as the primary project benefit. Much of this new functionality comes in the form of modular add-ons such as the commonly selected Web portals, data warehouses, and customer management systems.

Finding #2. Treat the upgrade like a new project. Because the perception of an ERP II initiative seems more like a technical maintenance effort than a true system development project, many organizations underestimate the time and resources required to successfully complete the project. While the total effort

with this important upgrade initiative.

Finding #3. Keep the team together. Organizations should make every effort to have the same team of key employees who planned and implemented the firm's initial ERP system to plan and implement the firm's upgrade project. Though potentially unpopular with the members of the project team who spent countless hours getting the initial ERP system up and running, team continuity is an essential factor for project success. Assembling a new project team or rotating new members into the team will serve only to slow progress on the project since these new team members must take time to become acquainted with all aspects of the initial ERP project. Additionally, no one in the organization will be better qualified to evaluate the impact an ERP system upgrade will have on the firm's existing ERP system than the individuals who implemented the existing system. The vast knowledge and experience team members gain during the initial ERP project will prove invaluable to reducing the overall cost and time required to complete the ERP II project.

Finding #4. This is a business project, not an IT project. While the majority of the time required for completion of the original ERP implementation project is allocated to the IT department, the time required to

successfully upgrade the system shifts to the business units. The IT consulting firm Reilly and Associates tracked the number of hours required for a mid-size manufacturing firm to upgrade its ERP system and found the manufacturing systems staff absorbed 43% of the project time and the finance department accounted for an additional 12% of project hours. The reason for the shift in hours from IT personnel to business personnel is simple—system ownership. Once all of the technical and operational issues are resolved by the organization's IT staff on the initial ERP installation, it becomes the responsibility of the business units to begin maximizing the business value from the system. This responsibility carries

infrastructure, ERP upgrade projects can become an expensive proposition. Organizations should work closely with their product vendor to uncover any hidden infrastructure costs prior to the start of their upgrade project.

Finding #6. Un-customize customizations. During the initial implementation of an ERP system, many organizations choose to customize the standard ERP software modules to meet implementation dates and to match their unique business requirements. Although most organizations that implement ERP make some customizations to a vendor's basic product offering, many make the mistake of over-customizing their application modules in attempt to appease the

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over to all ERP upgrade projects. The business side is responsible for determining the business case for the ERP upgrade. Only the business units can readily establish the timetable for planning, installing, and testing the upgrade to minimize disruption to critical business operations. Also, only the business units can correctly identify how much training will be required for the employees impacted by the upgrade. Organizations unable to gain the full support of the business units that are critical to the success of the project should seriously consider delaying any ERP upgrade initiative.

Finding #5. Watch for hidden infrastructure costs. Many organizations mistakenly think the vast majority of their ERP upgrade project costs will be software- and labor-related. Organizations may forget that updated software provided by their ERP vendor includes new system functionality intended to improve the competitive value of the product. In order to fully leverage the new capabilities available in an upgraded ERP system, organizations may be required to make further modifications and additions to their established IT infrastructure. One study by Gartner found that if organizations upgrade from SAP R/3 version 3 to version 4, each computer that uses the software will require 87% more CPU speed, 72% more memory requirements, and 33% more storage space. Depending on an organization's current

end users of the system. This tendency to over-customize can be expensive and consume internal resources. For example, each maintenance release requires an organization to evaluate effects of changes in the core application on customizations. Dealing with customization issues during an upgrade requires approximately 80% of a software developer's and 66% of a business analyst's time and effort. An organization must carefully determine the appropriate customizations and connections with third-party software on the new version. Customizations that must be carried over from one version of enterprise software to the next are the biggest technology headache and ROI killer that CIOs face in upgrades [5]. Therefore, organizations must carefully review the new functionality added to each new release of their ERP application suite to determine if specific company-developed customizations can be eliminated during the upgrade process.

Finding #7. Test like your organization's future success depends on it. Many organizations know that some level of testing is required before implementing a new release of the vendor's ERP product. An organization must carefully consider how the new functionality provided in the upgraded system applications affects both its existing enterprise application systems and its long-established business processes. What new hardware and software compo-

nents will be needed to successfully implement the new software upgrade? What core business processes must be changed to accommodate this new version? What front-end and back-end changes must be made to the organization's existing business applications? Are there specific industry or legal requirements the organization should consider during this effort? All of these questions highlight the importance of rigorously and thoroughly testing all ERP product upgrades. To ensure all systems are fully accommodated under the upgrade, research shows that the testing of an ERP's integration must be done from a process-oriented perspective.

Experienced companies recommend that instead of plugging in dummy data and moving it from one application to the next, those who will utilize the system should directly participate in testing. The first few iterations of such a testing strategy will reveal "show stoppers" that can be disastrous for the success of the upgrade. The latter iterations are used to improve overall system performance. Finally, before implementing the new release, organizations should test in parallel with the current system. Tracking and comparing the results can help to determine where trouble spots may be hiding.

Finding #8. Don't skimp on training. The focus for many organizations implementing and upgrading ERP systems has been the resources required to construct the system (such as money, people, and technology), and the anticipated business value the system will provide to the firm. Equally important, however, is that users are able to utilize the new system to perform their job functions. Staff training is, therefore, a critical component for success. Yet proper investment and training is often overlooked and at times critically underfunded. The true benefits of upgrading an ERP system cannot be realized if users are not using the system properly. Benchmarking Partners conducted a study that found that even though ERP training averaged 8% of the total project cost, the actual training costs range up to 30% of total costs. System users must understand how the ERP system should be integrated into the overall company operation [10]. Organizations should consider designating an employee to be responsible for periodic meetings with the functional users to discuss problems with the new system. As problems are identified and resolved, organizations should provide new training. To this end, education is arguably the most important and widely recognized critical success factor of this process. The users' understanding and "buy-in" of the system are two essential factors for continued success.

CONCLUSION

The completion of an ERP upgrade project can be a deceptively complex and often daunting undertaking for organizations that fail to fully recognize the time and effort required to successfully complete this critical business initiative. Much like the organization's initial ERP implementation project, a myriad of technical, processing, and operational challenges once again warrant careful planning and consideration by the members of the project team throughout all phases of the upgrade project. The purpose of this article is to provide organizations with a list of the eight most common recommendations suggested by organizations that have already completed at least one upgrade to their initial ERP implementation. Organizations in the process of launching their first ERP II project should remember to integrate the eight best practices listed in this article into their project plan to deliver a quality system on time and within budget. **C**

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