

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2007 Proceedings

Americas Conference on Information Systems
(AMCIS)

December 2007

Knowledge Transfer for ERP Upgrades

Jeff Erickson

University of Colorado at Denver and Health Sciences Center

Judy Scott

University of Colorado at Denver and Health Sciences Center

Follow this and additional works at: <http://aisel.aisnet.org/amcis2007>

Recommended Citation

Erickson, Jeff and Scott, Judy, "Knowledge Transfer for ERP Upgrades" (2007). *AMCIS 2007 Proceedings*. 124.
<http://aisel.aisnet.org/amcis2007/124>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2007 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Knowledge Transfer for ERP Upgrade Project

Jeff Erickson

University of Colorado at Denver and Health Sciences Center

ericksonjw@yahoo.com

&

Judy E. Scott

University of Colorado at Denver and Health Sciences Center

judy.scott@cudenver.edu

ABSTRACT

Previous research on enterprise resource planning (ERP) systems has focused mainly on the initial implementations of the solution. However, many companies that installed ERP solutions in the late 1990's are at the point where they need to upgrade their solution to a current release. This paper provides a model that identifies the different types of knowledge created in the initial implementation of the ERP solution that need to be transferred to the ERP upgrade project.

Key Words: Enterprise resource planning, ERP, Upgrade, Knowledge Management, Knowledge Transfer

Introduction

The majority of research in the area of ERP has been focused on the initial implementation of the ERP solution. This should continue to be a focus area since ERP market revenues increased 14% in 2004 (Reilly, 2004) and are forecasted to grow at a Compounded Annual Growth Rate of 4.8 percent over the next five years, surpassing \$21 billion in 2010, according to the latest ARC Advisory Group ERP market analysis. However, while the ERP industry has increasingly shifted its focus to upgrades, this area has received little attention from researchers. In the late 1990's companies made large investments in their ERP solutions. A Meta Group study of an ERP implementation classified the total cost of ownership as hardware, software, professional services and internal staff costs related to the implementation. Among the 63 companies surveyed—including small, midsize and large companies in a range of industries—the average TCO was \$15 million (the highest was \$300 million and the lowest was \$400,000) (Koch, 2006). Since their initial implementation, ERP vendors such as SAP and Oracle have added new business solutions such as CRM and Supply Chain to their products. For companies to take advantage of these new features and maintain their investment in their initial implementation, companies need to upgrade to the latest ERP release.

Organizations planning an upgrade need to consider measurable ROI (Jahnke, 2003). Current market research indicates a

significant cost with an ERP upgrade. When AMR talked to people at 109 companies that had recently completed ERP upgrades, they found that the average cost of an upgrade came in at \$1.5 million. Consequently, the cost and level of effort to upgrade an organization’s ERP solution is significant, although less than the initial ERP implementation costs. Because of the importance of upgrades, their cost, organization’s continued investment in an ERP solution, and the gap in the IS research literature on this topic, we have developed a theoretical model of knowledge transfer in an ERP upgrade.

This paper is divided into three main sections. The first section is a literature review. This review is focused on previous research related to ERP implementation and success factors. The second section of this paper will present a new model for the transfer of knowledge from the initial ERP implementation project to the ERP upgrade project and research results. The final section will detail future research on ERP upgrades.

Literature Review

There has been considerable research in the area of ERP software. Current research covers a broad range of topics including software selection, implementation, knowledge sharing, business process re-engineering, success factors, and case studies. To select the articles for the literature review, we searched nine journals and four conferences proceedings for the years 2000 to 2007 on the following key words: ERP, Success, Upgrade, and Implementation. From this list, we focused on ERP articles that were related to implementation success factors, upgrade factors and knowledge management. We did not include case studies based on failed implementations, although future research could use them to validate identified key success factors. The goal of the literature review was to provide a framework for the knowledge areas that need to be transferred to the ERP upgrade project.

The main finding across all the reviewed articles is that ERP systems are difficult and costly to implement (Haines and Goodhue, 2003). Companies experience considerable problems, particularly during the actual implementation project despite spending millions on ERP packages and the associated implementation (Parr and Shanks, 2000). As part of the review, we categorized the articles as they relate to the ERP lifecycle as seen in Table 1. The ERP lifecycle has four distinct phases: Software Selection, Pre-implementation Planning, ERP Implementation, and Post Implementation (which includes upgrades) (Markus et al., 2000, Nicolaou, 2004, Parr and Shanks, 2000). The majority of the research has been related to the ERP Implementation phase. Based on our research 76% of the articles that we reviewed were related to the ERP implementation phase. The second most common research area is related to the Post Implementation phase with 52% of the articles being related to this phase. However there is not a common topic within the Post Implementation phase. While some of the articles mention upgrades, it is not the research topic for any of these articles. The Software Selection and Pre-Implementation Planning phases were the least researched with 10% and 24% of the articles related to these topics.

Table 1, ERP Lifecycle Literature Review

Article	Software Selection	Pre-implementation planning	ERP Implementation	Post Implementation
Bourdreau (2003)				X
Gable (2005)	X		X	X
Gable et al (2003)			X	X
Grossman and Walsh (2004)			X	
Haines and Goodhue (2003)			X	
Hong and Kim (2002)			X	X
Huang et al (2004)		X	X	
Jones and Price (2001)			X	
Ko et al (2005)			X	X

Kremers and van Dissel (2000)				X
Lee and Lee (2000)			X	X
Markus et al (2000)			X	X
Nicolaou (2004)				X
Pan et al (2001)			X	X
Parr and Shanks (2000)		X	X	X
Soh et al (2000)	X			
Soh et al (2003)		X	X	
Somers and Nelson (2001)		X	X	
Strong and Volkoff (2004)		X	X	
Umble et al (2003)			X	
Zhang et al (2003)			X	

While all the articles focused on ERP implementations, there was no common theory used nor was there a common model or research method. Some of the articles were literature reviews; others were case studies, while others did empirical research such as surveys. Some of the articles research the ERP implementation lifecycle from the start of the software selection process to post go-live, while other articles focus mainly on the actual implementation and configuration phase on the ERP lifecycle. From the literature review, we discovered that previous research has not reached consensus on the classification and identification of key success factors for an ERP implementation. However, our analysis found the following factors were the most commonly cited: top management support, project management, resources, business process reengineering, customizations, testing, training, and vendor support. While identifying key success factors for ERP upgrades is beyond the scope of this paper, we draw on previously identified success factors as a basis for critical knowledge types for an ERP upgrade. The following sections explain our rationale.

Theory and Model

Although the literature identifies many essential success factors, the lack of consensus indicates a need for more research. We propose that each factor has associated knowledge created in the initial ERP implementation and each company that is upgrading had created the necessary knowledge to implement an ERP solution. Therefore, the knowledge exists in the company and there is the opportunity to leverage the ERP implementation knowledge and making this knowledge available to the ERP upgrade team (Gable et al., 1997). Nonaka’s model of knowledge conversion can be modified to create a model for knowledge transfer within ERP upgrades (Spencer, 1997). In Nonaka’s model, knowledge conversion follows a spiral pattern of socialization, externalization, combination, and internalization (Nonaka, 1994). The model proposed in this paper uses the concept of spiral knowledge creation for ERP upgrades. In the initial ERP implementation, critical knowledge creation occurred in the planning and execution phases of the project. The knowledge created in the initial ERP implementation is transferred to the ERP upgrade process, which is shown in Figure 1. Our model demonstrates that the knowledge transfer from the initial ERP implementation to the ERP upgrade serves as a critical step in the cycle/spiral of continuous knowledge creation. The conceptual model that we propose is documented in Figure 2.

A key facilitator to the knowledge transfer to the ERP upgrade is the focus on knowledge creation and documentation during the initial implementation. If a company treats the initial implementations as a one-time event, the quality and amount of knowledge creation is limited (Timbrell et al., 2001). However, when a company focuses on knowledge creation and documentation such as creating testing plans, test scripts, requirements for customizations and detailed project plans, the knowledge transfer available to be transferred to the ERP upgrade is higher. An additional facilitator for knowledge transfer is resource continuity. When the resources that were involved in the initial implementation are involved in the ERP upgrade project, there is an increase in knowledge transfer to the ERP upgrade project. However, there are barriers to having the same resources involved in ERP upgrade project. The main barriers are:

- For a majority of companies, an ERP upgrade occurs 5-7 years after the initial implementations. During this time resources move into new positions within the company and their new role does not allow time for involvement in the project. Additionally, the resources that were involved in the initial implementation have left the company.
- During the initial implementation, consultants were employed to implement the ERP solution. When the upgrade project commences, the consultants are not available for the ERP upgrade project.

Proposition 1: Knowledge transfer to the ERP upgrade project is higher when the knowledge creation and documentation was a focus during the initial implementation. (P1 on Figure 1)

Proposition 2: Knowledge transfer to the ERP upgrade project is lower when the resources that were involved in the initial implementation are not involved in the ERP upgrade. (P2 on Figure 1)

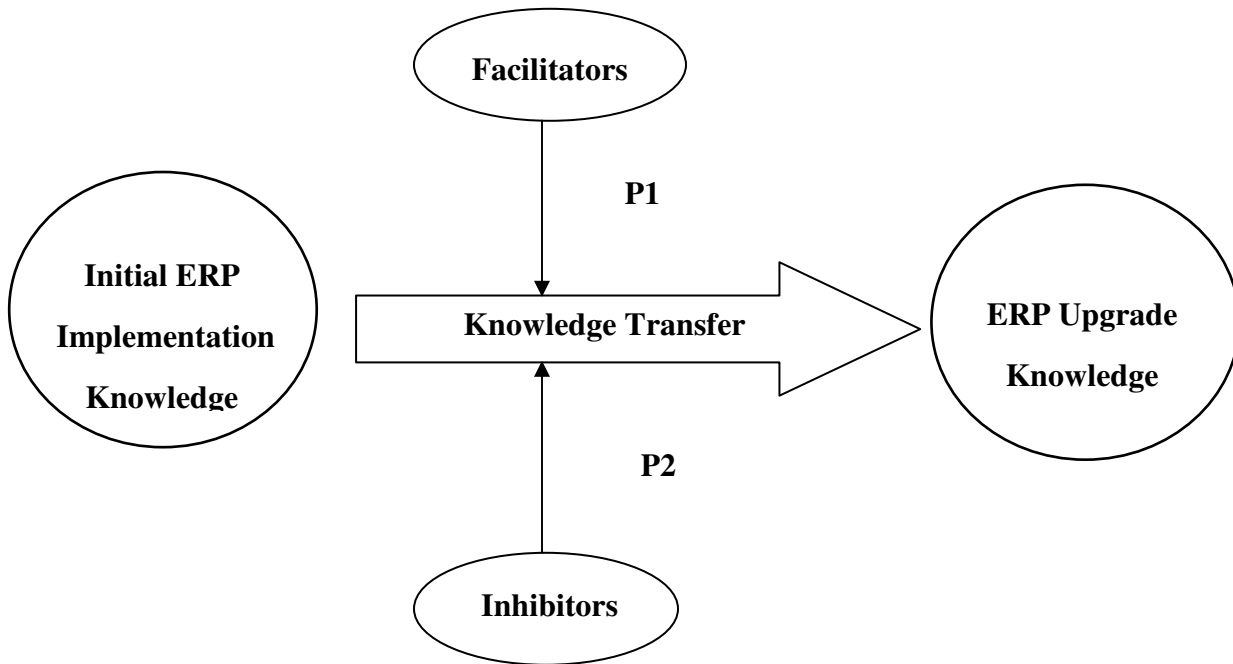


Figure 1, Research Model

Most of the previous research on ERP knowledge creation, transfer, and management has focused on knowledge transfer from consultants to the company, business knowledge that the ERP solution creates, and barriers to knowledge transfer (Haines and Goodhue, 2003, Jones and Price 2001, Lee and Lee, 2000, Pan et al., 2001, Timbrell et al., 2001). Our research extends the existing research by focusing on the knowledge creation during the initial implementation and how the transfer of this knowledge can assist the ERP upgrade. Furthermore, our models provide practitioners with a model of the different knowledge types that are required for an ERP upgrade.

Planning Phase

In the planning phase, the company determines a high-level project scope, broad implementation approach and resource determination (Parr and Shanks, 2000). The planning phase is the first phase of an upgrade and creates the foundation for the execution phase. The knowledge created and transferred in the initial implementation can be divided into the following areas for planning:

Knowledge of top management support

The support of top management has been documented as essential in many ERP studies (Zhang et al., 2002, Parr and Shanks, 2000, Strong and Volkoff, 2004). This support is also important for the ERP upgrade. Based on the knowledge of the initial implementation, the ERP upgrade project can better determine what key top managers need to be involved. Additionally, top management can learn from the initial implementation to determine the type of involvement that is required in the project and how to monitor the status of the upgrade project.

Knowledge of project management

Project management knowledge is mandatory for the initial ERP implementation (Zhang et al., 2002, Parr and Shanks, 2000, Somers and Nelson, 2001). During the initial implementation, a methodology and management tools such as external and internal integration devices and formal planning and results-controls were used to assist the project managers (Somers and Nelson, 2001). The transfer of knowledge from the project management's implementation plans, time lines, and project status will assist the ERP upgrade (Parr, 1999). By transferring this knowledge, the ERP project management can create an implementation plan and time lines that are realistic and achievable.

Knowledge of resources

One of the failure points for ERP implementations is the amount of resources required for the project. In addition to resource planning, the company will determine timelines, budgets, technical infrastructure, procedures and policies to be used during the execution phase of the project (Somers and Nelson, 2001). The resource commitment for an upgrade will require money, people, and time (Strong and Volkoff, 2004). The ERP upgrade can use the knowledge gained in the ERP implementation to determine the amount of resources, time and money needed for the upgrade. By better understanding the resource requirements prior to the start of the execution phase of the project, the ERP upgrade can use top-management support and commitment for company resources. Without this commitment, business units will be unwilling to lend their best people to the implementation (Strong and Volkoff, 2004).

Execution Phase

During the execution phase for an ERP implementation, business processes are re-engineered, the ERP software is installed and configured, customizations are developed and end-user training is conducted (Hong, K. and Kim, 2002). Also included in the execution phase are the actual go-live and shakedown activities (Somers and Nelson, 2001). Similarly to the implementation, the majority of the time, cost and resources are spent in the execution phase. The knowledge created and documented in the initial implementation can be divided into the following areas for execution for the ERP upgrade:

Knowledge of business processes

In many ERP initial implementations, business process re-engineering is a common activity. During the initial implementation, most organizations re-engineer their business processes to align with the business processes provide by the ERP solution (Lee and Lee, 2000). Although the main business processes in the ERP solution do not have significant modifications in an ERP upgrade, the processes need to be validated for possible changes (Beatty and Williams, 2006). However, the driving factor for companies to upgrade is new functionality provided in the new ERP release (Beatty and Williams, 2006, Kremers and van Dissel, 2000). As with the initial implementations, business processes need to be defined and re-engineered to meet the business processes delivered in the new ERP solution. The knowledge created during the initial ERP implementation of evaluating the ERP business processes and implementing a re-engineered business in the organization can assist in the re-engineering business processes for new functionality in the ERP upgrade.

Knowledge of customizations

During the initial ERP implementation, customizations are developed in the ERP solution. One customization type relates to output of the ERP system. Reports are customized using the ERP system's report writer (Soh et al., 2000). Additional customization types are related to business processes and ERP limitation. However these customizations require significant resource commitments during an ERP upgrade. 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 (Beatty and Williams, 2006). The knowledge created during the initial implementation helps the ERP upgrade team to determine the best method to design, develop and implement customizations. Additionally, knowledge of the initial requirements for the customizations can assist in retrofitting the existing customizations during the upgrade.

Knowledge of testing

While in many ERP implementations, business process re-engineering is a common activity this is not typical in an ERP upgrade. A driving factor for many upgrades is new functionality in the new release (Beatty and Williams, 2006). However, this does not decrease the need for testing during an ERP upgrade. While testing the ERP implementation has not been a common focus in the ERP literature, some research discusses the value of testing (Parr and Shanks, 2000, Huang et al., 2004). In the initial implementation, the quality of the system and information quality are important metrics that are dependent on adequate testing (Markus et al., 2000, Gable et al, 2003). Many organizations know that some level of testing is required before implementing a new release of the vendor's ERP product (Beatty and Williams, 2006). Because the level

of effort for testing is similar to the initial ERP implementation, the transfer of the knowledge created in the initial implementation such as test plans, test scripts and gaps in testing during the initial implementation provides the groundwork for ERP upgrade testing.

Knowledge of training

A study found that even though ERP training averaged 8% of the total project cost, the actual training costs range up to 30% of total costs (Beatty and Williams, 2006). Training is important because it leads to better system usage (Boudreau, 2002, Kremers and van Dissel, 2000). This is also true for an ERP upgrade. The knowledge transfer for the initial training to the upgrade training can ensure the quality usage of the system after the upgrade. Knowledge of the types of training either formal or informal and the perception of the training can benefit the training for the upgrade (Boudreau, 2002).

Knowledge of vendor support

Previous research has acknowledged the importance of the support of the vendor in the implementation (Zhang et al., 2002, Parr and Shanks, 2000). The knowledge gained in the implementation and daily maintenance of the ERP solution will benefit the ERP upgrade. This includes vendor supported hardware and software, consultants and the vendor’s procedures for patching and problem resolution (Markus et al., 2000).

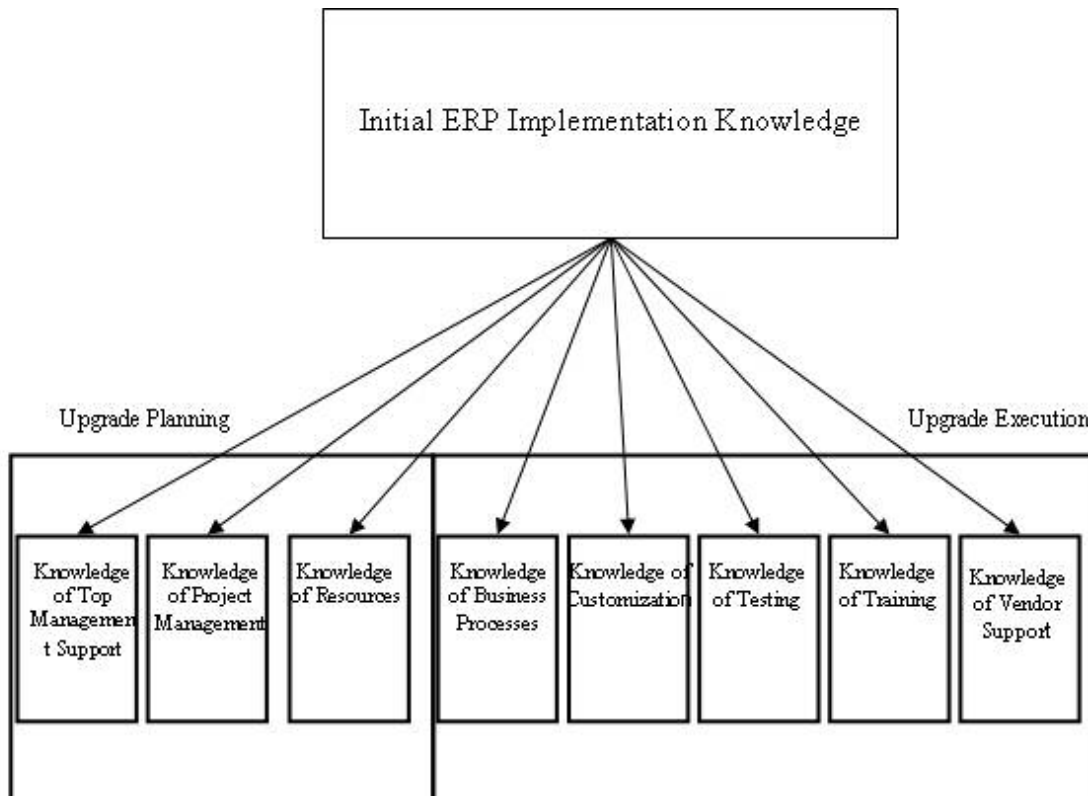


Figure 2, Conceptual Model

Table 2, ERP Knowledge Types

Article	Top Management Support	Project Management	Resources	Business Processes	Customizations	Testing	Training	Vendor Support
Bourdreau (2003)							X	
Gable (2005)							X	X
Grossman and Walsh (2004)			X		X	X	X	
Haines and Goodhue (2003)								X
Hong and Kim (2002)				X				
Huang et al (2004)	X	X					X	X
Kremers and van Dissel (2000)			X					
Lee and Lee (2000)				X				
Markus et al (2000)		X	X		X	X	X	
Nicolaou (2004)	X	X					X	
Pan et al (2001)				X				
Parr and Shanks (2000)	X	X	X	X	X	X		
Soh et al (2000)				X				
Soh et al(2003)				X				
Somers and Nelson (2001)	X	X	X	X			X	X
Strong and Volkoff (2004)				X			X	
Umble et al (2003)	X	X	X				X	
Zhang, et al (2003)	X	X		X			X	X

Data Collection

We interviewed two separate firms that specialize in ERP upgrades and a company that is in the process of an ERP upgrade. The interviews were 60 minutes long and were conducted via the phone and recorded. The same set of semi-structured questions was asked in each interview. For example, we asked: “What project documentation from the initial implementation was available to the upgrade project management team?” With each knowledge type there are specific activities and artifacts that were identified in the literature review. The interview questions were derived from this information and grouped into the knowledge types identified in our conceptual model (figure 2). The transcripts from the three interviews were analyzed and compared to identify common patterns. The results of the interviews and the data analysis are documented in the section below. Based on the results of the interviews, we revised the conceptual model. The initial model included knowledge types for consultant usage and data. While the interviews identified these topics as activities for an upgrade, both types of knowledge were fundamentally different in the initial implementation and the upgrade and consequently knowledge transfer was not needed.

Results

Table 3 documents the results from our interviews. The numbers associated with each response indicate the number of interviews that cited the topic as a facilitator or inhibitor. The interviews established two main facilitators for knowledge transfer to the ERP upgrade.

The first facilitator was focus on documenting the knowledge creation and access to resources by the project team in the

initial implementation. This knowledge creation and documentation can be captured in many different forms from project plans, status reports, defined processes, business process documentation, test scripts and training material.

The second facilitator was the involvement of the initial project team in the upgrade. These resources had knowledge about the process and the system that was not documented but was critical to the upgrade. When these resources were not involved, this knowledge had to be relearned.

The interviews identified the passage of time as the major inhibitor to knowledge transfer. The longer the period of time between the implementation and upgrade the more likely resources that had been involved in the implementation had left the company or were in new positions that did not allow involvement in the upgrade. Additionally, business processes and system usage changes over time. The greater the time gap between the implementation and upgrade, the greater these changes are and in most scenarios these changes are not documented.

Table 3, Interview Results

KNOWLEDGE TYPE	FACILITATORS	INHIBITORS
Top Management Support	<ul style="list-style-type: none"> • The same management team was involved in both the implementation and upgrade. (3) • The cost and level of effort of the initial implementation highlighted the need for management involvement in the upgrade. (2) 	<ul style="list-style-type: none"> • The management team members that were involved in the implementation were not involved in the upgrade. (2)
Project Management	<ul style="list-style-type: none"> • The project managers that were involved in the implementation are involved in the upgrade. (2) • The initial implementation project was well documented. (Project plans, resource requirements, status reports) (3) • Processes such as issue management and change control were created and documented. (1) 	<ul style="list-style-type: none"> • The project managers that were involved in the implementation are not involved in the upgrade. (3) • The initial implementation did not create or document processes for the implementation. (3)
Resources	<ul style="list-style-type: none"> • Business and technical resources involved in the initial implementation are involved in the upgrade. This also includes consultants. (2) • The initial implementation documented resource skill sets and time requirements. (3) 	<ul style="list-style-type: none"> • Business and technical resources involved in the initial implementation are not involved in the upgrade. (3) • The implementation did not document track resource time requirements or skill sets. (2)
Business Process	<ul style="list-style-type: none"> • As part of the 	<ul style="list-style-type: none"> • The company’s business

	<p>implementation, the company's business processes were reviewed and documented. (2)</p> <ul style="list-style-type: none"> • The business processes documentation was maintained/updated after go-live of the initial implementation. (3) • The resources that defined and configured the business process during the implementation are members of the upgrade team. (1) 	<p>processes are not documented. (2)</p> <ul style="list-style-type: none"> • A large amount of time has passed from the initial implementation and the business processes have changed. (2)
Customizations	<ul style="list-style-type: none"> • The business requirements for the customizations were documented. (2) • The developers involved in the upgrade were involved in the development and support of the customizations. (2) • A list of objects that have been customized was created and maintained. (2) 	<ul style="list-style-type: none"> • During the implementation, limited or no documentation was created related to the business requirements for the customizations. (2) • The number of customizations is not known because a list of customized objects was not created. (2)
Testing	<ul style="list-style-type: none"> • Test plans and test scripts were created and documented in the implementation. (3) • Automated test scripts were created and documented during the implementation. (2) • The number of post go-live issues highlights the need for additional regression and performance testing. (3) 	<ul style="list-style-type: none"> • The testing during the implementation was more ad-hoc testing and was not documented. (3)
Training	<ul style="list-style-type: none"> • The training materials created and used during implementation serves as a starting point for the upgrade training. (2) 	<ul style="list-style-type: none"> • Training material was not created during the implementation or the training material was very limited. (2)
Vendor Support	<ul style="list-style-type: none"> • Processes were created and documented on how to raise issues with the vendor. (3) • Because of delays at go-live, the need to apply vendor patches as part of the upgrade. (2) 	<ul style="list-style-type: none"> • Support of the existing ERP solution has been outsourced. (2)

Conclusions

Similar to an initial ERP implementation, an ERP upgrade can be costly and difficult. However, our research has shown that companies can leverage the knowledge created during the initial implementation in the ERP upgrade. The transfer of knowledge to the ERP upgrade can assist in reducing the cost of the upgrade, increase the satisfaction of the upgrade and provide the company the ability to continue to ‘evolve’ the ERP solution in the future (Gable et al., 1997). The results from our research demonstrate that the knowledge created and transferred from the initial implementation to the ERP upgrade project allows companies to focus on the actual upgrade of the ERP system by:

- Being able to leverage previous test plans and test scripts.
- Understanding the impact of the upgrade on existing business processes.
- Being able to review customizations to the existing ERP solution and understanding the impact of the upgrade on these customizations.
- Understanding what type of training is required for users and when to conduct training.

The interview results confirmed that the main facilitator for knowledge transfer is to focus on knowledge creation and documentation during the initial implementation. Additionally, the interview results confirmed that the main inhibitor is lack of access to the resources involved in the initial implementation. All three interviews identified project plans, tests plans, documented business processes and documented resource skill sets and time requirements as knowledge facilitator artifacts. Similarly, the interviews established that the lack of these artifacts is an inhibitor to knowledge transfer.

We believe that ERP upgrades will increase in importance over the coming years as the two major ERP vendors (Oracle and SAP) have announced that they are working on their next generation solutions. Our results can provide a base for further research the area of ERP upgrades. We propose that additionally research needs to be conducted in (1) knowledge creation and knowledge documentation during the initial implementation to facilitate upgrades and evolving the ERP solution and (2) the effect of passage of time on the knowledge created during the implementation and the impact on upgrades. Additionally, while we have identified eight knowledge types in the ERP upgrade process, further research needs to be done on determining the critical success factors for an ERP upgrade and how these knowledge types impact the upgrade as a critical success factor. Many practitioners are realizing that upgrading their ERP solution is not one time event. Future research should determine how to embed knowledge creation and documentation as part of the upgrade for continued knowledge creation.

References

- Beatty, W. and Williams, C.; “ERP II: Best Practices for Successfully Implementing an ERP Upgrade”; *Communications of the ACM* March 2006/Vol. 49, No.3 pp105-109
- Bourdreau, M.; “Learning to Use ERP Technology: a Causal Model”; *Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS’03)*
- Gable, G.; “The enterprise system lifecycle: through a knowledge management lens”; *Strategic Change*, August 2005 (14), pp 255-263
- Gable, G. and Scott, J. and Davenport, T.; “Cooperative ERP Life-cycle Knowledge Management”; *1997 Proceedings of the Ninth Australasian Conference of Information Systems*, pp 227-240
- Gable, G. and Sedera, D. and Chan, T.; “Enterprise Systems Success: A Measurement Model”; *2003 Twenty-Fourth International Conference on Information Systems*
- Grossman, T. and Walsh, J.; “Avoiding the Pitfalls of ERP System Implementation”, *Information System Management* Spring 2004 pp 38-42
- Haines, M. and Goodhue, D. “Implementation Partner Involvement and Knowledge Transfer in the Context of ERP Implementations”, *International Journal of Human-Computer Interaction*, 16(1), 23-38
- Hong, K. and Kim, Y.; “The critical success factors for ERP implementation: an organizational fit perspective”; *Information & Management* 40 (2002) pp. 25-40
- Huang, S., Chen, H., Hung, Y., and Ku, C.; “Transplanting the Best Practice for Implementation of an ERP System: A Structured Inductive Study of an International Company”, *Journal of Computer Information Systems*, Summer 2004, pp 101-110
- Jahnke, A; “Are ERP Upgrades Worth the Cost and Trouble?”; *CIO*, June 13, 2003
- Jones M. and Price R., Organizational Knowledge Sharing in ERP Implementation: A Multiple Case Study Analysis; *2001 Twenty-Second International Conference on Information Systems*

- Ko, D., Kirsh, L., and King, W.; “Antecedents of Knowledge Transfer from Consultants to Client in Enterprise System Implementations”, *MIS Quarterly*, Vol. 29, No 1, pp 59-85/March 2005
- Koch, Christopher; “The ABC’s of ERP”; *CIO.com*, January 10, 2006
- Kremers, M and van Dissel, H, “ERP System Migration”, *Communications of the AMC*, April 2000 Vol. 43, No. 4, pp 53-56
- Lee, Z. and Lee, J.; “An ERP implementation case study from a knowledge transfer perspective”; *Journal of Information Technology* (2000) 15, 281–288
- Markus, M. and Axline, S. and Petrie, D. AND Tanis, C., T.NIS; “Learning from adopters’ experiences with ERP: problems encountered and success achieved”; *Journal of Information Technology* (2000) 15, 245–265
- Nicolaou, A; “ERP System Implementation: Drivers of Post Implementation Success”; *The 2004 IFIP International Conference on Decision Support Systems (DSS2004)*
- Pan, S and Newell, S. and Huang, J. and Cheung, A.; “Knowledge Integration as a Key Problem in ERP Implementation”; *2001 Twenty-Second International Conference on Information Systems*
- Parr, A. and Shanks, G.; “A model of ERP project implementation”; *Journal of Information Technology* (2000) 15, 289–303
- Reilly, Kevin; “Market Analytix Report: Enterprise Resource Planning”, *AMR Research*, 2004-2009; 2004
- Soh, C., Kien, S. and Tay-Yap, J, “Cultural Fits and Misfits: Is ERP a Universal Solution?”, *Communications of the AMC*, April 2000 Vol. 43, No. 4, pp 47-51
- Soh, C. and Sia, S. and Boh, W. and Tang, M; “Misalignments in ERP Implementation: a Dialectic Perspective”; *International Journal of Human-Computer Interaction*, 16(1), 81–100
- Somers, T. and Nelson, K.; “The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations”; *Proceedings of the 34th Hawaii International Conference on System Sciences – 2001*
- Spencer, B., “Organizational Knowledge Creation, Ikujiro Nonaka”; *Knowledge Advantage Conference*, November 11-12, 1997
- Strong, D and Volkoff, O; “A Roadmap for Enterprise System Implementations”; *Computer: Computer Society IEEE*; June 2004 pp. 22-29
- Timbrell, G., Andrews, N., and Gable, G; “Impediments to Inter-firm Transfer of Best Practice in an enterprise systems concept”; *Proceedings 7th Americas Conference on Information Systems*, 2001, 1084-1090
- Umble, E., Haft, R. and Umble, M., “Enterprise resource planning: Implementation procedures and critical success factors”, *European Journal of Operational Research*, 146(2003) 241-257
- Zhang, L. and Lee M., and Banerjee, P.; “Critical Success Factors of Enterprise Resource Planning systems Implementation Success in China”; *Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS’03)*