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Successful ERP Implementation by West Michigan Companies

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Introduction

The many challenges faced today by global businesses are expected to grow in intensity and complexity as we go further into this century. Expanded global competition has become the norm rather than the exception, with an unprecedented number and variety of products available to satisfy consumer needs and desires. In particular, many firms have implemented company-wide systems called Enterprise Resource Planning (ERP) systems, which are designed to integrate and optimize various business processes, such as order entry and production planning, across the entire firm. A successful ERP can be the backbone of business intelligence for an organization, giving management a unified view of its processes. Unfortunately, ERPs have a reputation for being expensive and providing meager results, because the people who are expected to use the application don't know what it is or how it works. When ERP software fails, it's usually because the company didn't dedicate enough time or money to training and managing culture-change issues. Faulty technology is often blamed, but eight out of nine times ERP problems are performance related.

Given the large financial commitment that an ERP project requires and the potential benefits it can offer if successfully implemented, it is important to understand what is needed to ensure a successful ERP implementation. Using a methodology grounded in business process change theory, this research reports on a comparative case study of four West Michigan firms that implemented an ERP system.

Methodology

A case study approach was employed to identify the factors that facilitate and inhibit the success of ERP implementation. The criterion used to select the case study companies was that each of the case studies should use ERP software from the same vendor. Data were collected primarily through interviews, observations, and archival sources. Interviews were conducted with executives who were familiar with the ERP implementation progress. Archival documentation was the third major source of data used in the research. Feasibility studies, reports, memos, minutes of meetings, proposals, newspaper articles, and books that were available were reviewed and the contents analyzed. These documents were collected and analyzed to identify and/or validate data.

Constructs: Definition and Analysis

Consistent with the research objectives, specific questions were asked concerning each construct. Table 1 describes each construct of the research model and then provides summative findings of our case studies for each variable under the construct. Figure 1, on the other hand, depicts the links between each construct of our research model.

Lessons Learned from ERP Implementation

A well-planned and well-executed ERP implementation, in conjunction with a good change management program, can create a dramatic turnaround for the company. The successful implementation of ERP at our case study companies clearly supports the point. There are several lessons that can be learned from the findings of the comparative case analysis. These lessons are also consistent with the findings of prior research studies:

(1) The literature suggests that there are six reasons for a company to implement ERP. In our study, a common IT platform was one of the primary reasons for implementing ERP according to the experts interviewed.
(2) The implementation time of all four case studies was between one and four years. The project length supports the findings of the literature that an implementation might vary between six months and several years.
(3) The literature states that it is unusual for a case company to implement all modules (for example, SAP R/3 has eleven core modules, and each of these in turn has sub-modules). Of the four companies documented in this study, only one had opted for full functionality.
(4) There are two standard approaches to connecting each module to existing systems: either implement module-by-module or alternatively implement all modules and than connect them to the existing system(s). The literature clearly suggests that a company that selects the full functionality of the ERP is committing itself to a radically more complex task and is likely to use the implement-all-modules strategy. The findings of our case study are consistent with the literature as far as module implementation strategy is concerned.
(5) As far as the nature of the change is concerned, it is widely believed that Business Process Reengineering (BPR) is a necessary feature of ERP implementation. In our case studies, the experts interviewed emphasized this point and saw the adoption of ERP as an opportunity for comprehensive BPR. In all four cases, some BPR did occur, although it occurs more in situations where legacy systems were involved.
(6) According to the literature, the implementation phase of the ERP cycle deals with the customization or parameterization and adaptation of the ERP package acquired to meet the needs of the organization. Usually this task is performed with the help of consultants who provide implementation methodologies, know-how, and training. Experts interviewed in three of our four case studies totally agreed with the above viewpoint and also stated that the largest training investments were made in the implementation phase.

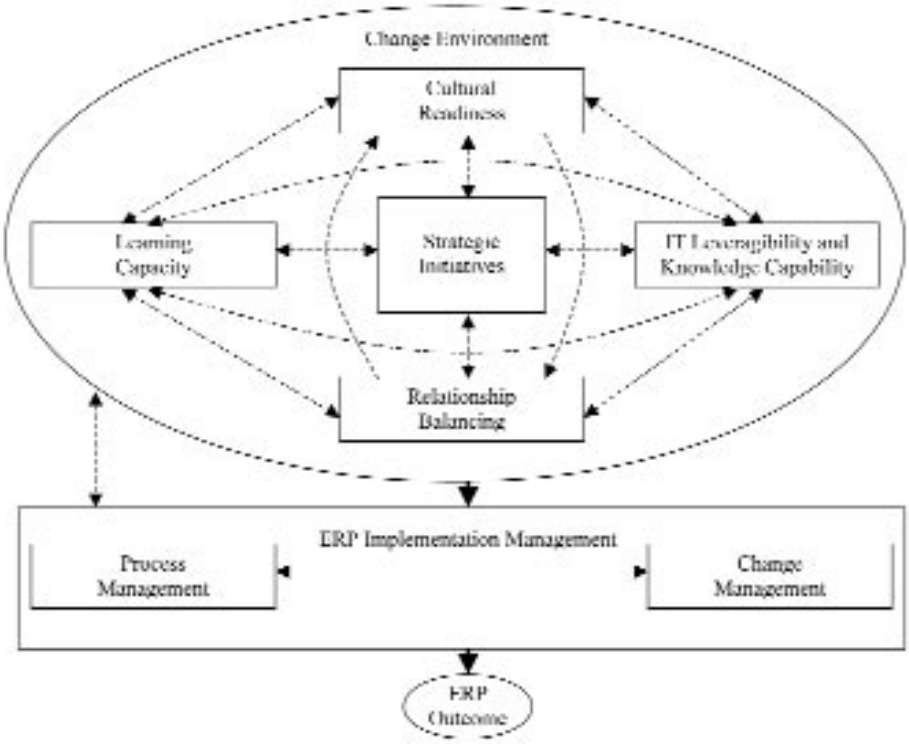

Figure 1: Theoretical framework for ERP Implementation Management

(7) In all four instances, the project team did represent the main processes of the company.
(8) The literature states that project management, process and systems integrity, and change management are essential threads to ensure successful ERP implementation. The experts interviewed strongly agreed with the above statement and also stated that a lack of attention to these threads could actually inhibit the project.
(9) According to the literature, top management needs to publicly and explicitly identify the project as a top priority. In all four cases this was true. However, the three case study companies that implemented a cautious, evolutionary, and bureaucratic implementation strategy were more successful, as the top management was able to develop a shared vision of the organization and was also able to communicate the new system and structures more effectively to the employees.
(10) A clear business plan and vision to steer the direction of the project is needed throughout the ERP life cycle. Of the four companies documented in this study, three of them had a clear business model behind the implementation effort of how the organization should operate.
(11) A project champion is critical to drive consensus and to oversee the entire life cycle of implementation. In all four cases, a high level executive sponsor was selected to be the project leader.
(12) According to the literature, organizations implementing ERP should work well with vendors and consultants on software development, testing, and troubleshooting. In three of the four cases, the project teams worked very closely with vendors to obtain inter-organizational linkages.

Conclusion

This research attempted to answer the question, "What factors facilitate and inhibit the success of ERP projects? Through a case study comparison of four ERP implementations, it was determined that a cautious, evolutionary, bureaucratic implementation process backed with careful change management, network relationships, and cultural readiness can lead to successful ERP implementations. On the other hand, a revolutionary project scope that is mandated autocratically by top management without organizational readiness and proper change management is likely to lead to a troubled ERP implementation, as was the case of Company A.

The results of this study should assist both practitioners and academicians. The framework presented in the study, along with the lessons learned, should provide practitioners (especially non-technical managers) with insights on how to better understand and prepare for ERP implementation. Also, the framework recommended in this study should assist academicians who undertake case study research in this area to identify comparable cases. We strongly believe that future case study research would serve to reinforce and validate the findings of this study.

TABLE 1: COMPARATIVE ANALYSIS

Construct	*Company A*	*Company B*	*Company C*	*Company D*
Strategic Initiatives				
Stimuli	Reactive	Reactive	Proactive	Proactive
Formulation scope	Revolutionary	Incremental	Revolutionary	Incremental
Decision-making	Autocratic	Bureaucratic	Semi-Bureaucratic	Bureaucratic
Strategy led	Not strategy led	From onset (Tied in with BPC and ERP efforts)	From onset (Tied in with BPC and ERP efforts)	From onset
Learning Capacity				
Adaptation	Response to technology change; however, underestimated the complexity	Response to technology change	Response to technology change	Response to technology change
Improved efficiency	Learning by doing	Learning by doing and consultants' prior knowledge	Learned more from others	Learning by doing and consultants' prior knowledge
Declarative knowledge	Did not develop knowledge base	Developed knowledge base	Developed partial knowledge base	Developed knowledge base
External information use	Boundary spanners — consultants, and customers	Technology gatekeepers — employees, boundary spanners, customers	Less by employees and and customers; more by consultants	Employees, consultants and voice of customers
Learning type	Deutero type of learning	Deutero type of learning	Deutero type of learning	Deutero type of learning
Cultural Readiness				
Change agents and Leadership (initiative for ERP)	Senior management and CEO	Senior management and middle management teams	More senior management and less middle management	Senior management and middle management teams
Risk aversion	Aggressive	Cautious	Semi-aggressive	Semi-cautious
Open Communications	Low	High	Medium	Medium to high
Cross-training	Very minimal	Some	Some	Some
IT Leveragability and Knowledge-sharing				
IT role	Enabling	Enabling	Enabling	Enabling
Use of communication technology	Medium	High	High	High
Network Relationships				
Interorganizational linkages	Low (focused on IT staff)	High (with vendor)	Medium (with vendor)	High (with vendor)
Cross-functional cooperation	Medium	High	High	High
Change Management				
Pattern of change	Semi-formal process	Formal phased process	Formal phased process	Formal phased process
Management readiness to change	Committed	Committed	Committed	Committed
Scope of change	Radical	Improvement	Semi-radical	Improvement
Management of change	Inadequate (ignored employees)	Adequate	Semi-adequate (involved employees partially)	Adequate
Process Management				
Process Measurement	Little (process mapping and diagnostic techniques)	Use of process metrics	Use of process metrics	Use of process metrics
Tools and Techniques	High	High	High	High
Team Based	No	Yes	Semi	Yes