An Examination of the Role of IT Governance in the ERP Post-Implementation Phase

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ABSTRACT
Problems associated with ERP implementations are most prevalent during the post-implementation phase because this is when the mistakes of the prior phases surface and become real. The cost overruns and adverse business impacts in an organization during this phase can threaten the survival of the organization and impact sales revenue. For this reason, research that increases our understanding of this phase in order to minimize the negative impacts and failure during this period is critical. This study utilizes variance research to explain similarities and differences in post-implementation outcomes across organizations that have implemented or upgraded their ERP systems. This approach does this by linking post-implementation outcomes to varying levels of IT governance. IT governance is examined by studying the ownership, accountability, and decision making structures in each organization. In-depth interviews were conducted with twenty-two participants in four organizations that implemented ERP systems. Analysis of the data collected across all cases resulted in initial propositions that can be investigated further.

Keywords
ERP Systems, Enterprise Systems, IT Governance, Post-Implementation

INTRODUCTION
Despite the existing research and experience implementing ERP systems, researchers and practitioners have many unanswered questions about the ERP post-implementation phase. Can the post-implementation phase in organizations be shortened and less disruptive to the business? Can the risk of disrupting business operations with customers and suppliers be minimized once these complex systems go live? What role does an organization’s IT governance play in improving outcomes during the post-implementation phase? The objective of this study is to provide a deeper understanding of the ERP post-implementation phase and understand how varying levels of IT governance influence this phase.

This research is motivated by the significant gap in research that addresses the post-implementation phase of large complex projects like ERP implementations. While there has been significant research about ERP implementations recently, few studies address in depth the post-implementation phase (Esteves 2001). In addition, little is known about how IT governance influences the outcomes during this phase. Recent literature reviews (Dong et al. 2002; Jacobs and Bendoly 2003) suggest that most existing ERP research focuses on the project chartering and project phases, not on the post-implementation phase. Furthermore, ERP projects are risky and very costly (Robey, Ross, and Boudreau 2002). Therefore, additional research that extends the understanding of the ERP post-implementation phase is critical.

Problems associated with ERP implementations are more prevalent during the post-implementation phase (Musaji 2005). The cost overruns and adverse business impacts in an organization during this phase can result in disastrous business disruption with customers and suppliers, and stressful work conditions for operating personnel (Markus and Koh 2001). Markus and Tanis (2000) define successful post-implementation outcomes as, “normal operations achieved within reasonable time frame and expense with impacts that are sufficient to meet business needs.” There is no definitive explanation for varying outcomes experienced by organizations during the ERP post-implementation phase. Markus (2000) defines measures to gauge this phase as:
(1) Few short-term changes occurring after the system ‘go live’ in key business performance indicators such as operating labor costs.

(2) Short length of time before key performance indicators achieve ‘normal’ or expected levels.

(3) Few short-term business impacts on the organization’s adopters, suppliers and customers such as average time on hold when placing a telephone order.

While this research focuses on the post-implementation phase in various organizations, an understanding of the project phase in these organizations is also critical. This became evident during the data collection phase. Many of the respondents were involved in both the project phase and the post-implementation phase. Those who were involved in both phases were unable to discuss the ERP post-implementation phase without making reference to their experiences in the project phase. This study addresses the following research question: How does IT governance influence post-implementation outcomes? This research paper is organized as follows. First, a review of the literature is provided followed by the research methodology. Next, the cases are presented with the findings from each case. Common themes resulting from a cross-case analysis are discussed along with initial propositions generated from the research findings and literature review. Finally, the conclusions are presented along with the limitations of the study, and implications for research and practice.

LITERATURE REVIEW

This section reviews prior research to establish what is currently known in the key areas relevant to this research study. This literature review will focus on existing streams of research on IT governance.

The term “IT governance” has been getting a lot of attention in the past few years. The large investment in IT in many large corporations and the increased focus on risk management and compliance, are forcing organizations to address the issue of IT governance. Existing research in the field has shown that "Firms with superior IT governance have at least 20% higher profits than firms with poor governance given the same strategic objectives" (Weill and Ross 2004). Yet there is confusion on what exactly IT governance is. IT governance is a broad concept that consists of multiple components. In its broadest context, Webb et al. (2006) describe IT governance as consisting of the following five elements:

- Strategic alignment
- Delivery of business value through IT
- Performance management
- Risk management
- Control and accountability

Webb et al. (2006) defines IT governance as the strategic alignment of IT with the business such that maximum business value is achieved though the development and maintenance of effective IT control and accountability, performance management, and risk management. The term governance deals with the processes and systems by which an organization operates. Williamson (1996) defines governance as the means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains. IT governance is the process by which firms align IT actions with their business performance goals and assign accountability for those actions and their outcomes (Weill and Ross 2004). Organizations that implement IT governance successfully begin their planning with business needs and priorities, while also involving the business process owners in a significant way.

IT governance impacts all levels of an organization. This includes the operational level, the management level, and the strategic level. Good IT governance links IT decisions with company objectives and monitors performance and accountability (Weill and Ross 2004). One of the key goals is achieving effective alignment between business and IT. Effective IT governance is important especially in ERP implementations because in many cases the expectations of what the system should deliver and the reality of what is delivered often does not match. When ERP implementations are undertaken, the basic expectation is that IT will deliver a solution of the right quality, on time, and on budget. Another expectation is that the solution will return business value and that the solution will increase business efficiency and productivity. For the purposes of this research, IT governance will be examined from the control and accountability dimension. IT governance will be examined through the lens of ownership, accountability, and decision making.

Ownership

Ownership within the IT governance context implies self-directed behaviors relating to an individual’s or organization’s responsibilities toward a desired outcome.
Accountability

Accountability is the basic principle that denotes responsibility for one’s actions. It is often used synonymously with such concepts as answerability, enforcement, responsibility, blameworthiness, and liability. Accountability often implies an obligation or willingness to accept responsibility. Within a project team, when an individual or group is accountable they take responsibility to deliver what they promised. There is no blaming or finger pointing. For the purposes of this research accountability will be defined as: “A personal choice to rise above one’s circumstances and demonstrate the ownership necessary for achieving desired results; to see it, own it, solve it and do it” (Connors et al. 1994).

Decision Making

Decision making within the context of IT governance focuses on how decisions are made, and who is involved in the decision making process. Once the decisions are made, is there a process in place to monitor the results of the decision? Existing research has shown that business and IT should collaborate on business oriented IT decisions. This can be put in place by establishing joint committees and business/process teams with IT membership (Weill and Ross 2004). Better IT decision making processes result in better implementations (Weill and Ross 2004).

IT Governance Maturity Model

Observations of existing organizations indicate that there are varying IT governance arrangements across organizations (Sambamurthy and Zmud 1999). In many organizations, IT governance just happens – it is not formalized and communicated within the organization. Figure 1 shows the IT governance maturity model from the IT governance institute (ITGI). This model shows the varying levels of IT governance maturity that can exist in an organization. The Maturity Model is an IT governance tool used to measure how well developed processes are within an organization. This model will be used to categorize the IT governance levels in the organizations in this study.

Source: Control Objectives for information and related technologies (COBIT)

![Figure 1 - IT Governance Maturity Model](image)

RESEARCH METHODOLOGY

This study uses a positivist case study research approach. This is an exploratory study. Case study research within the positivist tradition is designed and evaluated according to the criteria of the natural science model of research: controlled observations, controlled deductions, replicability, and generalizability (Lee 1989). Theoretical propositions were identified using coding techniques discussed in Strauss and Corbin’s (1998) open and axial coding. The Atlas Ti software was used to assist with the data analysis. The propositions generated are not tested during this study. However, they are supported by the data that is gathered from the interviews. The propositions that were generated from the data analysis are presented in the “PROPOSITIONS” section of this paper.

This study is a positivist, deductive case study with multiple cases. Studying multiple cases makes it possible to build a logical chain of evidence (Yin 2003; Miles and Huberman 1994). Multiple cases provides greater leverage during the data analysis phase because phenomena can be compared across cases (Eisenhardt 1991).
Design Considerations and Data Collections

The unit of analysis in this study is the organization. Positivist case studies are designed and evaluated according to the criteria of the natural science model of research which includes controlled observations, controlled deductions, replicability, and generalizability (Lee 1989).

The four cases were selected using theoretical sampling. The data collection and data analysis components of the research were conducted simultaneously. This is the approach used when using theoretical sampling (Strauss 1991). Theoretical sampling enables the researcher to select cases based on initial “working theories” relevant to the research question. The selection of additional cases is guided by the relevant issues, patterns, concepts, and interests that surface during data collection (Minichiello 1995).

Only organizations that have experienced the post-implementation phase on an ERP system implementation were studied. The sample in this study was selected from a population that includes organizations that utilized implementation consultants and/or an ERP vendor for their ERP implementation. A multi-case design allowed for cross-case analysis (Benbasat et al 1987).

Cases were selected using the two tail design in which cases from both extremes were deliberately chosen (Yin 2003). The cases selected represent organizations that have varying levels of IT governance maturity. This study combined several data collection methods including interviews, an on-line questionnaire, and content analysis. While multiple sources of evidence were used, interviews were the primary data source. The other sources of evidence were used to corroborate the data collected from the in-depth interviews which were approximately 1 to 1 ½ hours in length. Data was gathered from key individuals involved in the ERP implementation within each of the respective organizations being studied. This included individuals at the strategic, management, and operational levels in the organization. Some interviews were conducted face to face, while other interviews were conducted by telephone based on the availability of the respondent.

CASES

Case 1 – Company A

Background

The first case study analyzes an internet and computer software company that initially implemented the core Oracle Financials module and then later implemented Oracle Manufacturing which was significantly more complex than the first Oracle implementation. The manufacturing implementation consisted of the implementation of the Oracle manufacturing modules, integration with key suppliers, and the implementation of a product life cycle management software to be integrated with the Oracle Manufacturing modules. This implementation was designed to improve inventory tracking, cost management, and the planning processes. This organization was founded in 1998 and has grown rapidly over the last few years. This is a relatively young organization with limited experience in undertaking large complex business application implementations. The project phase was considered somewhat successful. A relatively small systems integrator was engaged to assist with the project and post-implementation phase. Oracle consulting was engaged during the project phase to augment staff. The systems integrator was engaged to assist with the project phase and took ownership for specific implementation areas. No formal IT governance process existed in the organization at the time of the implementation. Eight in-depth interviews were conducted at this company.

Findings

The respondents were asked to comment on the governance process within their organization during the project phase and the post-implementation phase and to indicate whether or not they believed governance was effective. According to one manager, “At the time of the implementation there wasn’t a formalized IT governance in place to ensure we engaged the business in the right way.” From the beginning of the project IT struggled to engage the business in the project. The business users were not full time on the project and it was difficult to get their commitment and engagement. One manager made the following comment. “During the project phase, we had good engagement at the executive level and good project management discipline. However, we didn’t have good user participation across the board. We didn’t have a good process in place to ensure that we engaged all the key stakeholders in the project.” In addition, many in the business viewed the project as an IT project. According to one of the executives, “This was an IT driven implementation. IT convinced the users they needed to implement this system.”
During the project phase, a steering committee met on a weekly basis to review the project status. According to the project manager, “During the project phase the management team met with the steering committee once a week. The steering committee was responsible for removing project roadblocks. The business project manager presented user issues and the IT project manager presented system issues.” However, the existence of a steering committee, and policies and procedures is no evidence of IT governance within and organization (Webb et al. 2006). According to one of the executives on the steering committee, “The IT governance was not always very effective and efficient. It did not surface critical issues in a timely manner. Members of our team tended to have a “peace making mentality” and were not comfortable bringing up all the issues they were encountering. They didn’t like conflict.” One of the business analysts on the project made the following comment, “I think the reporting structure was inadequate and issues did not surface at the top levels. Also, there wasn’t always complete transparency in reporting up to the steering committee. Business involvement was generally very limited since it was difficult to get business to commit time on the project. They were busy doing their regular jobs.”

After the system went live, there were several issues that surfaced in the post-implementation phase. Some of the post-implementation outcomes included the following:

- Difficulty diagnosing and solving problems
- Data integrity issues
- Non-use of the system
- Lack of metrics for surfacing issues
- Users were not knowledgeable about how to use the new system
- Lack of process discipline

The Steering Committee meetings stopped shortly after going live. According to one of the business users, “The IT governance structure changed after going live. The Steering Committee team was no longer involved in the project and things were being handled by the managers.” It took the IT team a few months to determine what the issues were. According to one of the business users, “The IT governance was not effective during the post-implementation phase. There was no executive leadership, no business ownership, and no passion. This was viewed as an IT project and IT’s problem.” It took Company A approximately five months to stabilize the system. According to one manager, “It took two months to recognize there was a problem, one month to establish the root cause, and two months to fix and resolve the problems.”

While there was a steering committee team during the project phase, the evidence shows that the presence of a steering committee does not always indicate that the level of IT governance is mature and IT governance is working effectively in the organization. Based on the IT Governance Maturity Model, the level of IT governance at Company A can be categorized as a level 1 – initial. There were some governance practices and mechanisms in place, and the project team met on a weekly basis for status and review meetings. However, for the most part, this activity was IT driven. Business accountability, ownership and decision making were relatively low, and IT did not have established processes in place to engage the business in the project.

Case 2 – Company B

Background

The second case study analyzes a network and storage company at a small startup company. This company was founded in 2004. This company implemented the newest release of the Oracle applications. Company B’s legacy system did not provide the end-to-end, integrated functionality or visibility it required to effectively manage its fast-growing global business. The implementation of Oracle’s e-Business suite was intended to consolidate the company’s existing ERP system into a single, global instance. Approximately twenty business applications were implemented in less than four months. A systems integrator was engaged to be a key partner in the implementation and the organization had a good relationship with Oracle. The project phase was considered successful. A relatively informal governance structure existed in this organization. One in-depth interview was conducted at Company B. Five on-line questionnaires were completed by other participants in the ERP implementation. The data collected from the on-line questionnaires corroborated the data gathered from the one in-depth interview.

Findings

The respondents were asked to comment on the governance process within their organization during the project phase and the post-implementation phase and to indicate whether or not they believed governance was effective. According to the executive interviewed, “While our IT governance was relatively informal, we were successful because we had hands on involvement by
management and executives. This was possible since we are a small company.” Webb et al. (2006) determined that IT governance implies leadership, control, and direction from those in the organization with the authority to govern. According to the executive interviewed, “During the project we had a project implementation team which was led by the project manager from the systems integrator. This team met on a weekly basis to address project issues. During the project phase we didn’t have an official Steering Committee team. However the project implementation team consisted of executives, managers, leads, and users. This team consisted of the VP of Finance and the VP of Operations who were involved in the day to day issues of the project.”

After the system went live, there were several issues that surfaced in the post-implementation phase. Some of the post-implementation outcomes included the following:

- Bugs in the software
- Problems that were not anticipated in the testing during ERP Project phase
- Difficulty diagnosing and solving problems since this was a new release
- Under use/non-use of the system

Despite the issues that occurred, Company B was able to address the issues within a reasonable period of time. According to the executive interviewed, “After we went live, we continued to have a strong focus, and urgency to get all the kinks out. We established a formal Steering Committee team that had representation across all functional areas. For example, sales, support, and finance were all involved. This was a more comprehensive team than the team we had in the project phase.”

Based on the IT Governance Maturity Model, the level of IT governance at Company B can be categorized as a level 2 – repeatable. The concept of IT governance does not exist formally. However, this was a small project team with significant hands on involvement by the executives. Business accountability, ownership and decision making were medium, however, IT accountability, ownership, and decision making were high.

Case 3 – Company C

Background

The third case study analyzes a security and compliance company that is a young startup company with a relatively small IT organization. This organization was founded in 1999. Before this ERP implementation, Company C was using a legacy Quote to Cash system that did not provide the scalability and flexibility required to support the company’s expected growth. Company C was scaling for growth. The company was growing rapidly and preparing to go public. Company C needed to implement a Tier 1 ERP application to support this growth. The project phase in this implementation was considered successful. A systems integrator was engaged to assist with the project and post-implementation phases. A relatively informal governance structure existed in this organization. Six in-depth interviews were conducted at Company C.

Findings

The respondents were asked to comment on the governance process within their organization during the project phase and the post-implementation phase and to indicate whether or not they believed governance was effective. Company C did not have an IT governance process in place at the time of the project. For the most part, the project was IT driven. According to one of the executives, “The fact that we didn’t have an IT governance process in place did impact the post-implementation outcomes. If we had a good IT governance process we would have been more rigorous in defining the business processes. IT owned the system because they were more knowledgeable about the business processes. They had been with the company longer than the business users.” Business involvement on the project was relatively low. This resulted in business processes that were not clearly defined. According to one of the project managers, “this had negative impacts during the post-implementation phase.” According to one business analyst, “We didn’t have strong leadership on the business side. We didn’t have users who knew what needed to be done. The users were not accountable.” Another respondent made the following comment, “For the most part, IT made the decisions. They came up with business requirements for the users.”

The turnover of the business users was very high, and in many cases, the business user roles were being filled by temporary contractors.

Company C had a steering committee team that met on a weekly basis to address issues. According to one respondent, “During the project phase we had a Steering Committee team. Not all business functions were represented. We had a weekly status meeting and solved problems in our War Room.” The project was managed by Company C, and the systems integrator was used to augment staff in key roles. Business ownership and accountability were relatively low during the project phase. One of the respondents commented, “We didn’t have good communication across all teams i.e., sales operations, finance,
collections, and engineering. We didn’t have a good forum for this. After we went live this improved a bit. Business ownership was unclear in some cases.”

After the system went live, there were several issues that surfaced in the post-implementation phase. It took a while for Company C to get control of the issues. According to one respondent, the IT governance changed, “After we went live we no longer had the war room. We just had one-off sessions and dealt with issues on demand. We had an issues based weekly team meeting. The post-implementation governance was relatively informal. We had no official governance structure. We had a weekly sync up meeting with the finance users where we reviewed the open tickets.” For the most part, these meetings were led by IT with input from the business users. According to one respondent, “IT and business were not aligned. It was unclear who was doing what. The business team just operated the system and didn’t contribute to the fixes. IT felt that the business should have taken a more active role.” These comments suggest that for the most part the general perception was that IT owned the system.

Some of the post-implementation outcomes included the following:

- Difficulty diagnosing and solving problems
- Data input errors due to high turnover of business users (temps)
- No process in place to handle exceptions
- No monitoring systems to detect issues proactively
- Excessive dependency on key team members
- Users not adequately trained
- Ongoing process changes
- No time allowed for the system to stabilize before undertaking new projects

Based on the IT Governance Maturity Model, the level of IT governance at Company C can be categorized as a level 2 – repeatable. The concept of IT governance does not exist formally. Company C was unable to actively engage the business in the governance process and for the most part this was an IT driven project. Business accountability, ownership and decision making were low, however, IT accountability, ownership, and decision making were high.

**Case 4 – Company D**

**Background**

The fourth case study analyzes a computer networking company. This company was founded in 1984. This company embarked on a very complex implementation of Oracle in a very large organization. The goal of the project was to design and ensure adoption of a new enterprise resource planning (ERP) platform for Company D’s quote-to-cash business process that would give customers and partners a world-class purchasing experience. The project scope affected one out of every three employees and more than 30,000 customers and partners. Company D utilized a Big 4 consulting firm as the systems integrator. Oracle was also engaged to help with technical issues. Both partners were considered key partners on the implementation. The project phase was considered successful. A very formal IT governance process was used during the project and post-implementation phases. Seven in-depth interviews were conducted at Company D.

**Findings**

The respondents were asked to comment on the governance process within their organization during the project phase and the post-implementation phase and to indicate whether or not they believed governance was effective. All respondents felt that their IT governance was effective. Unlike the other cases, each respondent was able to clearly articulate the governance policies, procedures, and structure within their organization. According to one of the executives, “Our IT governance structure allowed us to minimize the disruption when the system went live.” All respondents felt that their governance structure ensured that the project had the correct level of involvement and sponsorship at the executive level and that this resulted in effective engagement, ownership, and accountability from the business users. According to one of the IT project managers, “Effective IT governance leads to effective executive sponsorship, which in turn ensures that business users are truly engaged.” The IT governance structure that existed also created an environment of ownership and accountability with both IT and business users. The project manager made the following comment, “Our governance structure truly works. Every problem had a home. It took little time to figure out whom to go to for an issue.” The governance structure created an environment where transparency and accountability were high. Milestones were clearly defined. According to one
respondent, "Governance enables us to put a formal structure in place. This translates to specific deliverables so users are clear about what they need to do. Governance drives structure and accountability."

All respondents felt that the IT governance structure impacted the post-implementation outcomes in a positive way. Company D planned for the post-implementation phase during the project phase. This effort was led by the business users. Metrics were defined to measure outcomes during the post-implementation phase. Contingencies were defined for the post-implementation phase. According to one executive, "There is a significant correlation between IT governance and the post-implementation outcomes. 40% of the problems during post-implementation are a result of changes that were not managed correctly. If you don’t have governance and coordination regarding changes, then you run the risk of not being aware of impacts to other systems - upstream/downstream impact or other direct/indirect impacts from the release."

After the system went live, there were several issues that surfaced in the post-implementation phase. However, the implementation team was able to detect and resolve these issues in a timely manner. The project team remained in tact after the system went live. According to one director, "Post go live we had a slightly different governance structure. The structure was different, but the leadership team stayed in tact. Our governance structure and methodology provided a level of confidence."

Some of the post-implementation outcomes included the following:

- Business disruption for a period of time
- Excessive dependency on key players
- Unexpected issues

Based on the IT Governance Maturity Model, the level of IT governance at Company D can be categorized as a level 4 – managed. All respondents were familiar with the governance structure and process in place. This process is governed by the Release Management Organization to ensure the processes and structures were in place and were being monitored. Company D was able to actively engage the business in the governance process. Business accountability, ownership and decision making was high. IT accountability, ownership, and decision making was high. This was the only organization in the study with a defined and functioning IT governance.

**CROSS CASE FINDINGS**

The findings from this study conclude that IT Governance is probably the most critical factor that influences both the ERP project phase and the post-implementation phase. The reason for this is that effective IT governance provides an organization with full transparency of the issues that need to be addressed during the ERP experience. When there is transparency in an organization there is clear and open communication. Members can count on each other to openly raise issues. Not only are issues raised, but they are addressed directly, as well. The more formal the IT governance process and structures in an organization, the more effectively the organization is able to engage the business in ownership, accountability, and decision making during the ERP implementation.

Table 1 presents a summary of the cross case findings from this study. The levels of IT governance varied in each organization. Company A had a very informal IT governance process. There was no defined IT governance process at the time of the project. This resulted in a long stabilization period for Company A. Company B did not have a formal IT governance process. However, since the company was very small and the roles were well defined, they were able to govern the project effectively. Even though the stabilization period was 3 – 6 months, the organization was able to detect and address issues effectively. The length of the stabilization period can be attributed to the fact that the release of the ERP application implemented was a very new release and there were still many bugs in the application. Company C did not have a disciplined and formal IT governance process. The post-implementation phase at Company C was relatively long. It took over 6 months to stabilize operations. Company D had a very mature and formal IT governance. Despite the complexity of this implementation, company D was able to detect and address issues in a reasonable timeframe. The stabilization period at Company D was 3 months.
<table>
<thead>
<tr>
<th>Project Phase Success</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
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<td>• IT Decision Making</td>
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<td>• Business Decision Making</td>
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<td>3-6 months</td>
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<td>• Business Metrics Impacted</td>
<td>Inventory Accuracy</td>
<td>Quoting</td>
<td>Billing Accuracy</td>
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<tr>
<td>• Impacts to customers, suppliers, and internal staff</td>
<td>Yes</td>
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Table 1 – Cross Case Analysis

Lessons Learned
The following common themes emerged across all cases when respondents were asked to discuss their lessons learned regarding IT governance during the implementation:

- Project ownership should not fall on one group but should be shared by IT and the Business. All functional areas impacted by the project should be involved throughout the project at all levels – Executive, Management, and Operational.
- The cross functional business impact should be carefully assessed at the start of the project phase. Buy-in, support, and participation are required from all stakeholders. Where possible, incentives should be tied to project outcomes.
- Formalized IT governance at all levels in the organization must be established before the ERP project starts. This governance process must address all phases in the ERP implementation.
PROPOSITIONS

Proposition 1

Planning for the post-implementation phase must begin during the project phase to achieve positive outcomes in the post-implementation phase.

This proposition is based on the literature by Markus (2001) which found that in many cases organizations implementing ERP systems seemed both physically and psychologically unprepared for the challenges they experienced in the post-implementation phase.

The findings of this study support this proposition. The study showed that Company A, and Company C were focused on the project phase and meeting the planned go-live date. Little or no planning was done for the post-implementation phase. As a result, both companies were caught off guard during the post-implementation phase and were unprepared to deal with the challenges that surfaced. As a result, the stabilization period took much longer in these companies. It took time for them to put a plan in place and execute the plan to reach normal operations. Company D, had a formal governance process that ensured that there was a formal plan for the post-implementation phase long before the system went live. Because of this upfront planning, Company D was much more effective in detecting and addressing the issues that occurred during the post-implementation phase. Company B’s planning for the post-implementation phase was not as rigorous as Company D, however, the project team remained in place after the system went live and there were plans for the systems integrator to provide support for the applications. They had a very strong focus and sense of urgency to address the post-implementation challenges.

Proposition 2

Effective governance results in more positive post-implementation outcomes.

This proposition is based on the literature by Weill and Ross (2004) which indicated that better IT decision making processes result in better implementations. (Wang and Chen 2006) also found out that managers need to address governance in an ERP project in order to increase the likelihood of project success.

The findings of this study support this proposition. Company D had the most effective governance structure. This was the most complex ERP implementation of all four cases studied. Yet Company D was prepared for the post-implementation phase. Even though there were issues that surfaced in this phase, they were able to address and resolve these issues in a reasonable period of time. Company A which had a significantly less complex implementation than Company D, took a relatively long time to stabilize to “normal operations”. The level of IT governance impacted post-implementation outcomes negatively. It took time for Company A to detect issues in the post-implementation phase, and additional time to determine the root causes, and resolve the issues. Company B did not have a formal governance process. However, the key executives were involved in the details of governing the project during the project phase and the post-implementation phase. This enabled Company B to identify issues and resolve issues in a timely manner during the post-implementation phase. Company C also had an informal governance structure. User ownership and accountability was very low both in the project phase and the post-implementation phase. Issues that occurred during the post-implementation took a long time to resolve. The need for on-going monitoring and adherence to quality assurance practices is recognized by all. In addition, effective governance provides clarity with regards to accountability, ownership, and decision making. Organizations cannot predict or control all the factors that can go wrong during an ERP implementation. However, an effective IT governance structure provides a process and methodology for handling these issues most effectively.

Proposition 3

The governance structure and the project phase team must remain intact during the post-implementation phase to achieve positive outcomes during the post-implementation phase.

This proposition is based on the literature by Barber & Frolick(2003) which indicates that an ERP implementation is not successful unless it is accepted within the organization and integrated into work processes across the enterprise. In many cases, ERP implementation success is evaluated based on the project going live on time and within budget. This puts the focus on the Project Phase and not on the Post-Implementation. This results in many organizations abandoning the IT governance structure and processes that were used in the Project Phase once the system goes live. Implementation partners
often leave the project soon after the project goes live and the focus and discipline of the project phase is not evident in the post-implementation phase. This impacts post-implementation outcomes negatively. The disciplined governance structure that exists during the project phase must stay in place during the post-implementation phase. While the governance process may change to meet the requirements of the post-implementation phase, the key decision makers and players must remain in tact during the post-implementation phase in order to minimize negative post-implementation outcomes.

The findings of this study support this proposition. In Company B and Company D, the project team remained in tact during the post-implementation phase and consequently, there was a focused effort to resolve the issues that surfaced. This continuity enabled the team to address issues much more effectively and timely. Company A and Company C had significant changes in the business team during the post-implementation phase. In Company A, the steering committee team disbanded during the post-implementation phase and in the first two months after going live the issues were not being addressed in a focused way. In Company C, many of the business roles were being performed by temporary contractors. The business turnover was high. This impacted the timeliness in addressing post-implementation issues and resolving the business process issues that surfaced.

Proposition 4

ERP projects that are viewed as IT projects result in more negative outcomes during the post-implementation phase.

This proposition is based on the literature by Webb et al. (2006) which indicates that IT governance must be driven from the highest levels within the organization, not simply the IT department or the business unit.

The findings of this study support this proposition. In Company A and Company C, ownership, accountability, and decision making were driven by the IT department for various reasons. In both companies the ERP implementation was viewed as an IT driven projects, and IT was unable to engage the business effectively. This resulted in systems that the users did not know how to use, and systems for which they felt no ownership.

CONCLUSION

This study investigated the post-implementation phase of ERP projects and investigated how the level of IT governance influenced the post-implementation outcomes. The goal was to understand varying post-implementation outcomes across organizations and to understand the role of IT governance in these outcomes. The intent was to understand why the post-implementation experiences vary across companies. The study offers valuable theoretical and practitioner insights into the ERP post-implementation phase. The four propositions drawn from the rigorous analysis of the cases highlight the critical role that IT Governance has on this phase. The study indicated that the overall effectiveness of IT governance in an organization is a major factor in the post-implementation outcomes.

Implications for Research

This research contributes to existing research on the processes and outcomes of ERP post-implementation in several ways. First, this investigation focused on the ERP post-implementation phase while most of the prior work has focused on the project phase (Esteves 2001). Second, this research adds to the existing body of research in the area of ERP adoption by examining various organizations’ experiences during the post-implementation phase. Third, this research examines in greater detail the influences of IT governance on the ERP post-implementation phase. These factors are generally examined during the project phase.

Implications for Practice

An increasing challenge facing organizations once they have implemented complex enterprise systems is how best to achieve stabilization in a reasonable period of time in order to begin to realize the benefits of the system. This research provides insights for practitioners that can be used to minimize and mitigate negative outcomes during the post-implementation phase. The study highlights the critical importance of having an effective and working IT governance structure and process in place to minimize risk and ensure that the gap between expectations and reality is minimized. This research will enable practitioners to be proactive in establishing an effective IT governance structure before implementing an ERP system.

Limitations

The companies studied in this research may not be a representative sample of all companies who have implemented ERP systems. All the companies were based in the same geographic area, used the same ERP software product, and were within
the same industry sector. For this reason, the results of this study may not be generalizable to a broader context. While there are limitations with regards to generalizability, the findings provide insights into how varying levels of IT governance can influence post-implementation outcomes.

REFERENCES


