Implementation of an Enterprise Information System

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Abstract

One of the most difficult and costly aspects of business is the implementation of new ideas. Obtaining the buy-in of key company staff can be difficult at times. When a business decides to implement an enterprise information system the issues of cost and proper buy-in are paramount. The enterprise information system needs to be flexible to allow the users to understand the system and also be able to change it when needed. The purpose of this paper is to write a summary and critique of an article that deals with these issues. The article summary and critique will be from a secular viewpoint and will also incorporate the teachings of the Bible.
Implementation of an Enterprise Information System

One of the biggest barriers in the implementation of an enterprise information system is its cost and the buy-in the system receives from company employees. The enterprise information system needs to be flexible to allow the users to understand the system and also be able to change it when needed. These are some points made by Gebauer and Lee in the article “Enterprise System Flexibility and Implementation Strategies: Aligning Theory with Evidence from a Case Study” (Gebauer & Lee, 2006). The purpose of this paper is to summarize this article and provide a constructive critique.

The abstract from the article reads as follows:

Flexibility can have important consequences for the operational efficiency and long-term effectiveness of an enterprise system, yet is often not considered explicitly as a decision factor during system design and implementation. In this article, we join managerial advice for implementation strategies with insights from a theory that determines the flexibility requirements of an enterprise system in relation with characteristics of the business process that the system is intended to support. We align our theoretical considerations with practical evidence from the case of an electronic procurement system that was implemented at a Fortune 100 firm. Based on our findings, we present a roadmap that can guide flexibility and implementation strategies based on both project and process characteristics. (Gebauer & Lee, 2006, p. 71)
This is a very good article. It is informative, well written, and provides useful information in regard to implementing an enterprise system. The theory discussed in the article can be used in other areas of implementation of new ideas.

The theory of the article is: “We build our theoretical concept on research work in two areas: enterprise system flexibility, and implementation strategies. Our goal is to provide guidelines for the development and implementation of an enterprise system to support a given business process cost-efficiently over the lifetime of the system” (Gebauer & Lee, 2006, p. 71).

The article develops an in-depth discussion on flexibility, specifically infrastructure flexibility and enterprise system flexibility. In these areas there are two types of flexibility. These flexibility types are “flexibility-to-use” and “flexibility-to-change.”

“Gebauer and Schober (2006) distinguished between two types of flexibility: flexibility-to-use relates to the range of process activities that is built into an enterprise system and that is supported without requiring a major change to the system” (Gebauer & Lee, 2006, p. 73).

“In contrast, flexibility-to-change is conceptually related with information technology infrastructure and is measured by the effort that is required to change a given enterprise system after its initial implementation” (Gebauer & Lee, 2006, p. 73).

Flexibility is a well-supported concept. The flexibility to change an enterprise system is one that sometimes is overlooked and not monitored in a routine fashion. Many times professionals will implement a system, monitor it for a while, and move on to the next project. This approach will not allow the system to operate at its potential.
“The sustainability of enterprise information systems (EIS) during the post-implementation period needs to be looked into. There is a lack of clear understanding about the strategic needs and requirements for sustaining the effectiveness of large-scale information systems after a period of relative stability following initial implementation” (Yusuf, Gunasekaran, & Abthorpe, 2004, p. 265).

“As the conceptual models are created and integrated, some compromises may be made due to inadequate measurement techniques, practical considerations, and other constraints” (Dunn, Cherrington, & Hollander, 2005, p. 338).

The implementation of an enterprise system is very costly. A team approach is needed. “Rolls-Royce has understood the business, cultural and technical difficulties of such a large project, and has developed a solid core implementation team. The team has used the specialist skills of consultancy specialists” (Yusuf et al., 2004, p. 264). “Without counsel, plans go awry, But in the multitude of counselors they are established” (Proverbs 15:22 NKJV).

Gebauer and Lee provide six propositional statements to address the implementation of an enterprise system. Propositions A, B, and C deal with flexibility and inclusion issues, while propositions D, E, and F address the issue of implementing an enterprise system in full (“big-bang”) or in stages (“roll-out”). Per the article they are outlined as follows:

**Proposition A:** Uncertainty Effect: A business process characterized by low uncertainty can be supported cost efficiently with an enterprise system that is based primarily on flexibility-to-use, whereas a business characterized by high uncertainty can be supported
cost efficiently with an enterprise system that is based primarily on flexibility-to-change” (Gebauer & Lee, 2006, p. 73).

“**Proposition B:** Variability Effect: A business process characterized by low variability can be supported cost efficiently with an enterprise system (independent of the flexibility strategy), whereas the cost efficient performance of a business process characterized by high variability may not warrant the inclusion of all different process tasks” (Gebauer & Lee, 2006, p. 73).

“**Proposition C:** Time-Criticality Effect: A business process characterized by high time-criticality can be supported cost efficiently with an enterprise system (independent of the flexibility strategy), whereas for a business process characterized by low time-criticality, the enterprise system investment may not outweigh the cost premium to be paid for tasks that are performed outside of the system” (Gebauer & Lee, 2006, p. 73).

“**Proposition D:** Maturity Effect: An enterprise system that is based on technology that is well understood (e.g., because of general maturity or the availability of external knowledge) may be implemented with a “big bang,” whereas an enterprise system that is based on technology that is not well understood should be implemented in phases to create a learning experience” (Gebauer & Lee, 2006, p. 74).

“**Proposition E:** Complexity Effect: An enterprise system that is small (e.g., because of limited functional or physical scope) may be implemented with a “big bang,” whereas an enterprise system that is large should be implemented in phases” (Gebauer & Lee, 2006, p. 74).

“**Proposition F:** Risk Effect: An enterprise system that faces high project-external risk because of the possibility of personnel turnover or unanticipated events should be
implemented swiftly with a “big bang,” whereas an enterprise system that faces low project-external risk may be implemented in phases” (Gebauer & Lee, 2006, p. 74).

The implementation and monitoring of an enterprise system can provide for the financial success of an organization.

By taking an enterprise approach to running government, the State will improve government’s bottom line—service delivery. This is not an idealistic dream, but a pragmatic reality, as our pilot agency has proved. The agency is now using enterprise-wide systems to automatically collect information on programs and activities, determine the actual cost of doing business, align resources and results, establish consistent business processes, and better serve its customers. Actual annual process savings of approximately $600,000 have been documented by our pilot agency. This was despite the fact that the pilot agency continues to have to work within the limits of the State’s current inefficient business processes. With this experience, the State now has a basis and the tools to expand on this success. (South Carolina, 2005, pp. 1-2)

With the vast amount of business transactions and process, a fully developed, implemented, and monitored enterprise information system is crucial. The application of the theories and principles discussed in this paper provides numerous opportunities. This is an area of business study that is relatively new and will grow in popularity as time goes on.
References


