ERP implementation and Organization Changes

Jen Yin YEH
Fortune Institute of Technology
University of South Australia
jenyiny@yahoo.com.tw

Abstract

Numerous ERP evaluations have been presented in previous literatures. However, most study concentrates on the technical evaluation rather than the human or social aspects of ERP implementation. The ERP evaluation should also consider the human and social effects and the broader organizational consequences. The interpretive approach – an in depth case study is used to gain a deeper understanding of the context of the ERP system implementation, and the process over time of mutual influence between the system and its context. Data was collected by conducting interviews at various levels of the subject organization and by examining the archived records when available. Three specific key issues of business process change, and cultural change are discussed in the study.

Keywords: ERP, Organization change, A case study

1. Introduction

1.1 Background

ERP implementation involves broader organizational transformation processes involving business processes, with significant implications to the organization's management model, organization structure, management style and culture, particular to people (Wood & Caldas, 2001, Pawlowskei etal., 1999). The massive organization change involved in ERP implication result from the shift in a business design from a fragmented, function-based organization structure to a processed one served by an integrated system (Devenport, 1998; Mather, 1999). Organization change management concerns all human, social, and cultural alignment factors (Carr, 1993). Organizations also have been described as political entities (Pfeffer, 1992), where the design and shaping of technology is seen as the outcome of negotiations between a multiplicity of stakeholders. (Williams & Edge, 1996).

1.2 Research Framework

A framework was designed by Walsham and Waema (1994) as a basis for understanding organization change associated with computer-based information systems. The first component of the frame work is about 'content'. It involves planned changes to products and services, business processes, formal organization structures and roles and human perceptions. The second main component in the analytical framework is social context. The elements

include the social relations between participants concerned with the information system, the social infrastructure available or necessary for its support, and the history of previous commitments made in connection with computer-base systems. The third component of the framework is concerned with social processes, and involves taking a cultural and a political perspective of the organization change associated with an information system.

1.3 Research objectives

Most of the ERP literature has focused on discussing the cost and benefits of ERP implementation the link with human factors has been less studied. This study makes a contribution by evaluating the organization and human change associated with ERP implementation in a Taiwan organization. It is described and analyzed in an in-depth case study.

2. Methods

Case study research is the most common qualitative method used in information systems (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). The choice of case study organization was highly selective with the major reason for choice being that the ERP implementation for the case company was the biggest IT project since 2000 in Taiwan and the implementation period was particularly long. For commercial reasons, the original identity of the company is concealed and is referred to as "Shine" in this paper.

Both primary and secondary data collected from a four-year period between 2000 and 2004 were used in writing the case study. The primary information source was via semi-structured interviews, mostly face to face, but including several telephone and email communications. Initially, interviewees were selected from different hierarchical levels across different business functions. Other sources of data included documentary evidences: corporate annual reports, organizational charts, system training manuals and design documents, and internal correspondence about the system and company web-site data. As well, searches were made of published materials about the company in newspapers and magazines.

3. Results and Analysis

This section contains the description and analysis of the case organization, presented using the Walsham (1993) framework. This is followed by an overview of events and actions broken into two relevant periods; from January 2000 to March 2003, and March 2003 to July 2004. The first of these periods was under the project leader -Dr. Fen and the second period was under the succeeding project leader – May.

3.1 Review of Events and Actions

Prior to the implementation of ERP, Shine carried out its operations with several information systems like MRP. The lack of integration became an increasingly important issue with development from a local company to a global company. Furthermore, Most of Shine's customers have implemented ERP systems. Most of the original drive for the uptake of an ERP system came when Dr. Fen was appointed to the ERP project in 2000. He was highly informed on information technology and change management and had successfully introduced two ERP projects previously. In January 2000, he found that Shine's information flow in its packaging and testing sites had serious discontinuity problems. This impacted on logistic operations and he proposed an information system centralization, process optimization and simplification. He insisted management solution instead of technical solution and business process improvement instead of business process reengineering. Although Dr. Fen was professionally very competent in terms of IT systems, he was unfortunately, not totally conversant with Shine's culture and being new to the company, had an imperfect knowledge of the organizations business processes; and hence what was required in the future. Furthermore, the organization was unstable. Functional managers' were engaged in dysfunctional conflicts over power and authority while no one really cared about the ERP project. Even though formal meetings were held every week but always were long and useless. Function directors were absent from the meetings. Without resources it was impossible to even scope the overall project. Furthermore, senior managers began to express doubts in the project overall and in its conduct. Dr. Fen left Shine in February 2003. The process of implementation was obviously already troubled.

From January 2000 to March 2003, a considerable time, Shine had spent large amounts of money in the ERP project, but the implementation process was not progressing well. At the beginning of 2003, in an attempt to retain competitive advantages, successful implementation became an explicit object. Top management announced this objective clearly and sought advice from a senior consultant about the project status. In March 2003, a new project manager, May, was appointed. May was an in-house appointment having previously been an assistant to the CEO. Her style was to aggressively pursue the project blueprint and she quickly gained the support and trust from managers most relevant to the project. Very soon after her appointment, May made some major changes in project team structure. She raised in organization a tacit understanding of the importance of the project and built up operational mechanisms to fulfill the potential of the project. The project blue print was revised and the scope redefined to include the supply chain in ERP project. Go life date was set up in September 2003 in the original project schedule. Due to quality concerns, system scope concerns, business concerns, training concerns and other requirement change, the "go- life" date was delayed to January 2004.

Even so, when commissioned in January 2004 there was many teething problems. End users were still not ready, training had not been completed, data entry demand during set-up had been inaccurate; all leading to system inefficiency. Customers complained   of lost control on manufacturing and delivery time schedules and about receiving reissued invoices. However, with time most of these issues were resolved and the system met most of its goals after six months of the complete implementation. By the end of the research period in mid-2004 (6 month after implementation), respondents indicated that "everything seemed to be going okay". Not quite a ringing endorsement but perhaps somewhat of an understatement compared to the unsustainable previous system.

2.2 Content, context and social processes

Table 1 and table 2 provide a more generalized summary of the findings. They illustrate social context, content, processes, cultural perspective on change, and political perspective on change during two periods.

Table 1 Content, Context and Social Processes in Shine

Shine under Dr. Fen in 2000- February 2003	Shine under May in March 2003-2004
The semiconductor industry experienced a severe downturn due to slowdown in the global economy Most of Shine's customers have implicated ERP system. Shine needed an information system that could be easily meet customer and business needs. Shine's turn key strategy combined the administration departments of three sites (testing site, package site, and materials site) to one central administration center. The organization was unstable.	The modest recovery has continued in2003 and the first half of 2004. The increasingly short product life cycle has accelerated time to market pressure for semiconductor companies. In an attempt to retain competitive advantages, successful implementation became an explicit object. Top management announced this objective clearly
Context Management solution instead of technical solution and BPI instead of BPR Dr. Fen focused on business Process optimization more than ERP implementation.	Context May focused on project management. She made the project a competitive imperative. She changed the method of communication in terms of frequency, directness when necessary and by supported face to face contacted with daily progress status. Four fundamental human resources management approaches were used to change the project team culture - appoint the right persons, put them in right positions, encourage them work effectively and build the work team.

Process	Process
1. Culture	1. Culture
Different perspectives of subculture existed in different sites and different departments of Shine	The territorial wars were between the different functions that occurred during project implementation and continued to post implementation.
Most ERP project team members were young and junior in the organization structure	Depressed module leader provided an opposing perspective which reflected and enduring expectation that the ERP was a temporary phenomenon and doomed to failure.
Due to lack of business transaction and system understanding, there were ongoing difficulties in cross-departmental communication.	
The function managers preferred to remain largely ignorant of the project altogether and to focus on short term accountability goals.	2. Politic
Most project team members held doubts about project certainty.	May defined her role "a manager and a communicator "in this project.
	The project module leaders and some project team members received the promotions and salary increases after the ERP system was regarded as successful implemented.
2. Politic	
Shine needed to retain flexibility, including flexibility of organization structure.	
The project ownership was unclear. Although of obviously strategic significance and operationally important, the project was originally generally seen as an MIS project.	Shine didn't announce any transition process plan for the project team members post the implication period. As a result, staff seconded to the project felt insecure:
Dr. Fen lacked the authority to mandate action.	In post implementation period, Shine still continued processes improving and organization restructuring.
The politics resulted in poor communication about almost every aspect of the project when Dr. Fen was heading it. There was considerable dissatisfaction with Dr. Fen's leadership.	

3. Discussion

3.1 Business process change

One of the ERP advantages claimed by ERP vendor is the 'best practice'. But, "What is the best practice?" Dr. Fen with broader organization vision focused on improving business processes to be an optimal business model rather than ERP implementation. He believed if ERP system business model can meet Taiwan companies' needs, then Taiwan companies will lose their competitive advantages. The best practice provided by ERP system is kind of western style management business model. On the other hand, May viewed in a different way the ERP best practice. For cost and time considerations, she convinced users to accept ERP standard business process. She believed that the situation is continually changing and ERP standardized business processes are flexible and the ERP vendor provides more flexible model to meet future business needs. Even the best process is planned; changes will still occur in the future. As Soh, Kien, & Tay (2000) argued there is no single "best process" to do business as ERP systems assume However, ERP implementation provides an opportunity that

organization can evaluate added-value of every single process and improve the business processes.

3.2 Cultural change

The ERP implementation challenge in Shine was complicated on change management model. ERP led Shine to transform from human management to system management. In the Shine legacy system, some department users could work carelessly and used their own way to cover errors. But in ERP system, users need to learn a new way to work. If ERP only changes tasks and the procedures people used to do their work, it is unlikely to provide long-term competitive benefits. To promote a sustained competitive advantage, organizations must be able to use ERP in distinctive ways. This means that people must change the way they think about their work and their organization, how they feel about their enterprise and the type of relationships they develop within and across organizational boundaries (Lengnick-Hall, C., Lengnick-Hall, M., & Abdinnour-Helm, S., 2004). Better understanding and communication crossed function departments through ERP implementation in Shine. ERP implementation provided an opportunity that different function departments and different sites users could sit together and understand the other department needs. Unique database platform also decreased arguments from different data resources.

4. Conclusion

Organization changes accompanied with ERP implementation can achieve organization goals and gain the competitive advantages. These changes include better business processes, communication and interaction. Generally speaking, the organization change -centralization and standardization accompanied with ERP implementation met Shine's strategies. This study argues that ERP can not provide a best practice without matching organization context and needs. ERP is still an information system if organization views ERP as that. The degree of organization change coupled with ERP implementation depends on the top manager's vision and strategy.

References:

Alavi, M. and Carlson, P. "A review of MIS research and disciplinary development," *Journal of Management Information Systems* (8:4), 1992, pp. 45-62.

Carr, D. "Managing for effective business process redesign". *Cost Management,,*1993, Fall,pp16-21.

Davenport, T., "Putting the enterprise into the enterprise system", *Harvard Business Review.* 1998, July-August, pp.121-131.

 Janieson, R., & Handzic, M., "A Framework for security, control, and assurance of knowledge management systems In: C.W. Holsapple, Editors', Handbook on Knowledge Management: Knowledge matters,

Spring-Verlag, New York (2003), pp.477-505.

Mahrer, H. "SAP R/3 implementation at the ETH Zurich: A higher education management success story". *In Processing of the American Conference on Information Systems,* 1999, pp.788-790.

Lengnick-Halla, C. A., Lengnick-Hall, M. L., & Abdinnour-Helm. S., "The role of social and intellectual capital in achieving competitive advantage through enterprise resource planning (ERP) systems', *Journal of Engineering and Technology Management JET-M. 2004*

Orlikowski, W.J. & Baroudi, J.J.,"Studying Information Technology in Organizations: Research Approaches and Assumptions", *Information Systems Research* (2),1999, pp. 1-28.

Pfeffer, J., , "Managing with Power", Harvard Business School Press", Boston, MA., 1992.

Soh ,C., Sia, S.K., and Tay-Yap, J., "Cultural fits and misfits: is ERP a universal solution?", *Communications of the ACM* **43** (2000) (4), pp. 47–51.

Walsham, G. and Waema, T., , "Information Systems Strategy and Implementation: A Case Study of a Building Society," *ACM Transactions on Information Systems* (12:2),1994, pp. 150-173.

Williams, R. & Edge, D., "The social shaping of technology", *Research Policy*, Vol.25, No. 5, 1996, pp. 865-899.

Wood, T. & Caldas, M. P., "Reduction and complex thinking during ERP implementations", Business Process Management, Vol.7, No. 5, 2001, pp.387-393.