Assessing Impact of Organizational Culture in The Transformation of IT into Business Value

Li Xiao and Subhasish Dasgupta
George Washington University
Monroe 403, 2115 G Street, NW, Washington, DC 20052
Tel: (703) 248-9642, Tel: (202) 994-7408
Fax: (202) 994-4930, Fax: (202) 994-4930
lilyxiao@gwu.edu, dasgupta@gwu.edu

ABSTRACT

The process of turning IT investment into realized business value is long and complex. According to Soh and Markus (1995) process theory, there are three stages during this process: IT conversion, IT use, and competitive process. Successful completion of each stage will enable the organization to pursue the next stage in the process. Moreover, the execution of each stage is dependent on a number of factors. Organizational culture is generally regarded as one of the most important factors influencing IT success in organizations. This research seeks to analyze the role played by organizational culture in the process-based creation of IT business value using the process theory proposed by Soh and Markus (1995).

INTRODUCTION

Organizations that decide to invest considerable amount of financial, human and other resources on an IT project expect to see improved organizational performance. This improved performance, in many cases, is realized after years of continued investment. After significant allocation of resources to a project, management may find out that the project greatly improved organizational performance. On the other hand, it may find that the project improved organizational performance only slightly, or had no improvement at all. No organization wants to see that huge investment on IT became waste of resources but such situation occurs every day.

Large IT projects require months and years to implement and there are many uncertainties in the process from initial IT investment to final improved/unimproved organizational performance. Soh and Markus (1995) proposed a process theory on how IT creates business value. According to this process theory, there are three stages in the process that IT creates business value in organizations: IT conversion process, IT use process, and competitive process. A number of factors influence successful completion of these stages. One of them, organizational culture has been regarded as being among the crucial factors that influence IT implementation in organizations. Studies have researched on relationship between organizational culture and general information system success (Harper, 2000, Harper and Utley, 2001) and between organizational culture and knowledge management success (Ribiere 2001). Those studies, however, have addressed IT success as a general construct without considering the temporal dimension of IT projects. This research seeks to empirically validate Soh and Markus's (1995) theory with data collected from organizations, and investigate the role of organizational culture during each stage of IT implementation.

This research will provide valuable insight into understanding the role of organizational culture in the process of IT creating business value. From a theoretical perspective, this research brings a new approach to look at relationships between organizational culture and IT. Instead of looking at broad IT success as most previous studies did, this study looks in depth at different stages of the process of IT creating business value, which more accurately reflect the reality of IT in organizations. From a practical perspective, determining the impact of organizational culture on IT conversion process, IT use process, and competitive process will enable organizations to focus on differ-

ent cultural attributes during different stages of IT implementation. It will also help in ensuring success at each stage and in making more efficient decisions to abort IT projects at early stages if necessary.

The organization of the paper is as follows. In the next section, we will present our theoretical framework and research questions. And then we will discuss about our research model and research methodology. Finally we will report on our current progress in this research.

THEORETICAL FRAMEWORK

The impact of information technology (IT) on organization performance has been a topic of interest for IS scholars for many years. Does IT really improve organizations performance? Does IT investment yield satisfactory payoff? How should we measure IT payoff? These issues draw a lot of debate among IS researchers. In 1990s alone, there had been at least 66 studies on IT investment payoff (Kohli and Devaraj, 2002). In recent years, because of accelerating increase in IT investment, the issue of IT investment payoff has become a critical issue for both practitioners and researchers.
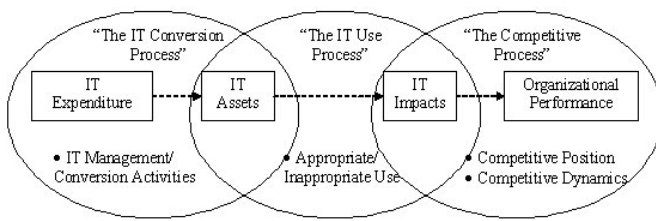
Although significant amount of research has been done in this area, results have been mixed, and this has made IT payoff issue even more controversial. As Kohli and Devaraj (2002) pointed out, studies on IT payoff differ greatly on sample size, process-orientation, and analysis methods, which are a few reasons that caused these inconclusive results in establishing a relationship between IT investment and organization performance.

Among the key issues in IT payoff research brought up by Kohli and Sherer (2002), the lag effects of IT investment are an important one. There are several steps between initial IT investment and improved/unimproved organization performance. Soh and Markus (1995) synthesized previous studies on IT investment payoff and proposed the process theory, which well addresses the lag effects of IT investment payoff. According to this theory, the process that IT creates business valued involves three stages: IT Conversion process, IT use process and competitive process (Figure 1).

The process theory synthesizes previous studies and addresses the lag effect of IT payoff, however, it has not been verified with empirical evidence, which is one of the objectives of this study. This study will involve 2 steps. First, we will test this theory with empirical data. After empirically validating this theory, the second step in this study will be to examine the influence of organizational culture at each of the three stages during which IT investment yield payoff. Here, we will use the Managerial Grid theory developed by Blake and Mouton (1964) as theoretical framework for organizational culture.

There are two main research questions to be answered in this study:
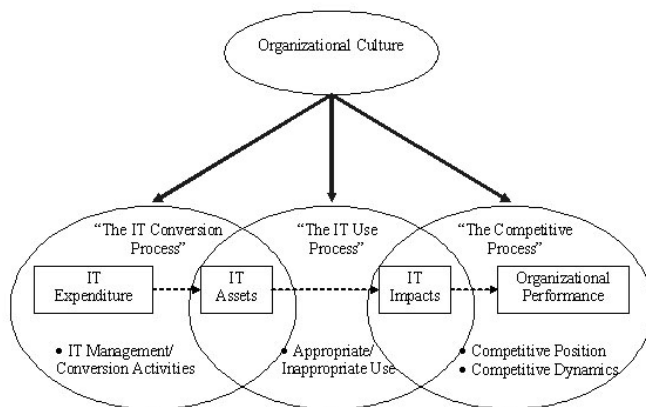1. Does empirical data support the process theory that during the three processes of IT business value realization, the success of each process will lead to success in the next process and finally lead to improved organizational performance?
2. Is there relationship between organizational culture and IT implementation at different stage of the process of IT business value realization?

H3: There is some relationship between organizational culture and success of competitive process.

METHODOLOGY

In an attempt to verify the process theory, we will develop a questionnaire for survey organizations. This questionnaire will be developed based on the operational, managerial and strategic variables of organizations (Kohli and Devaraj, 2002). And then we will develop a questionnaire based on Organizational Culture Profile (OCP) instrument to measure organizational culture. Regression methods will be used to examine the relationships between organizational culture and the dependent variables at each stage of IT implementation.

STATUS OF THE RESEARCH

Currently we are working on developing the survey questionnaire and identifying subjects for data collection. We will use operational, managerial and strategic variables to measure IT assets, IT impacts, and organizational performance. As for organizational culture, we will use the tested, theory-based instrument Organizational Culture Profile (OCP) by O'Reilly, Chatman and Caldwell (1991) to measure organizational culture.

REFERENCES

Blake, R. R. and Mouton, J. S. *The Managerial Grid*, Houston, TX, Gulf Publishing Co., 1964.

Harper, G. R., *Assessing Information Technology Success As a Function of Organization Culture*, PhD Dissertation, The University of Alabama in Huntsville, 2000

Harper, G. R., Utley, D. R. Organizational culture and successful information technology implementation, Engineering Management Journal, Rolla; Jun 2001; Vol. 13, Iss. 2; pp. 11-15

Kohli, H. and Devaraj, S. Measuring Information Technology Payoff: A Meta-Analysis of Structural Variables in Firm-Level Empirical Research, *Information Systems Research*, 2002, forthcoming

Kohli, H. and Sherer, S. A. Measuring Payoff of Information Technology Investments: Research Issues and Guidelines, *Information Systems Frontiers*, 2002, forthcoming

O'Reilly, C. A. III, Chatman, J. A. and Caldwell, D. F., People and Organizational Culture: A Profile Comparison Approach to Assessing Person-Organization Fit, *Academy of Management Journal*, Vol. 34, No. 3, 1991, 487-516.

Ribiere, V. M. Assessing Knowledge Management Initiative Success as a Function of Organizational Culture, PhD Dissertation The George Washington University, 2001

Soh, C. and Markus, M. How IT Creates Business Value: A Process Theory Synthesis. *Proceedings of the Sixteenth International Conference on Information Systems, Amsterdam*, The Netherlands, 1995.

Figure 1 Process Theory of how IT creates business value (Soh and Markus, 1995)

RESEARCH MODEL

In determining the role of organizational culture in the process of turning IT investment into realized business value, the research model was proposed as follows (please refer to figure 2):

H1: There is some relationship between organizational culture and success of IT conversion process.
H2: There is some relationship between organizational culture and success of IT use process.

Figure 2 Research Model

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