INFORMATION TECHNOLOGY INVESTMENT DECISION IN AN EDUCATIONAL SECTOR: A CASE STUDY USING CONTEXTUALIST FRAMEWORK

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Abstract

In 2003, GartnerG2 and Forbes.com hosted a senior executive survey to find out their beliefs and attitudes towards information technology (IT) (MacDonald, 2003). Seventy percent of the respondents agreed that companies that invest heavily in IT have a strong competitive advantage. However, Carr (2003) argues that IT is not always associated with competitive advantage, hence investment in IT should be reduced. These two different points of view lead to this research to examine how companies make IT investment decisions. This study adopt a contextualist framework to explore how a continuing education institution (CEI) evaluate the IT investment.

Keywords: Information Technology, Investment, decision.
1 INTRODUCTION

In 2003, GartnerG2 and Forbes.com hosted a senior executive survey to find out their beliefs and attitudes towards IT (MacDonald, 2003). Seventy percent of the respondents agreed that companies that invest heavily in IT can have a strong competitive advantage. However, Carr (2003) argues that IT is not always associated with competitive advantage, hence investment in IT should be reduced. After Carr claims “IT doesn’t matter?”, there are many debates on this subject among the researchers and practitioners. Put differently, these debates remind us to re-evaluate what is really fundamental and important about the IT investment and the value they generate for organizations.

IT investment decisions often focus on only financial or technological aspects of the decision (Bacon, 1992). Researchers (Carr, 2003; Wang, 2006; Serafeimidis & Smithson, 2000; Huerta & Sanchez, 1999; Jayasuriya, 1999; Serafeimidis & Smithson, 1996; Hitt & Brynjolfsson, 1996) have suggested the financial or technological analyses are incomplete. Hitt & Brynjolfsson (1996) identified “hidden costs and benefits” that are typically not included in decision analysis. Those costs and benefits are often intangible and difficult to quantify.

Davenport (1989) stated "No matter how impressive the technology, it will not produce good returns unless the people who must interact with it want to make it work.” (p14) Therefore, the IT choice may not be an objective decision on the basis of technical characteristics and potential financial value. In this study, we adopt a contextualist framework to explore the decision-making process of a continuing education institution (CEI) on the IT investment.

2 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 IT investment definition

An investment is different from expenditure because it is made with specific business direction and defined objectives, whereas expenditure is spending that ensure the smooth running of the daily operation. There is no uniform definition of what constitutes an IT investment. This study adopt the definition of IT investment from Bacon (1992). Therefore an IT investment is defined as:

“Any acquisition of computer hardware, network facilities, or pre-developed software, or any "in-house" systems development project, that is expected to add to or enhance an organization’s information systems capabilities and produce benefits beyond the short term.” (p335)

2.2 Current research of investment decision

The subject of IT investment decision has been discussed extensively in the information systems (IS) field, but most focuses on the economic aspects (Bharadwaj, 2000); (Ballantine & Stray, 1998); (Austin, 1988). The economic-oriented research holds the assumption that technical systems are used to achieve rational objectives— increasing efficiency, reducing costs, saving time, and so on. For example, Austin (1988) suggested seven indicator to assess IT performance, including productivity, user utility, competitive performance, business alignment, investment targeting and management vision. His finding is consistent with others similar studies where economic evaluation techniques were the most widely used (Bacon, 1992).
In addition to economic gain, Clemons(1991) also described how firms make strategic IT investment decisions using several case studies and found that firms’ IT investment decisions are influenced by their potential future competitors’ actions. Holden & Wilhelmij(1995) identifies the importance of human resource in improving decision making.

### 2.3 Contextual framework

In general, most of the IT investment decision studies adopt a positivistic approach of understanding the relationship between IT and organizations (Serafemidis & Smithson, 2000). The study on IS requires the researchers to consider the broader organizational context. Therefore, some have recommend contextualist framework for IT study in order to allow us having a deeper understanding of the phenomenon.

A recent study explored the governance patterns in IT investment decision process(Xue et al., 2008) and found the governance of the pre-decision initiation and development stages are affected by several contextual factors. We summarize the studies adopting contextualist framework during the past ten years (Table 1).

<table>
<thead>
<tr>
<th>Author(year)</th>
<th>Research issue</th>
<th>Methodology</th>
<th>Journal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jayasuriya(1999)</td>
<td>Management of Information Systems for Health Services in a Developing Country</td>
<td>Case study</td>
<td>Case study</td>
</tr>
<tr>
<td>Serafemidis &amp; Smithson(2000)</td>
<td>Information Systems evaluation in Practice</td>
<td>Case study</td>
<td>Journal of Information Technology</td>
</tr>
</tbody>
</table>

*Table 1. summary of literatures adopting contextualist framework*

Serafemidis & Smithson(1996) argue that an interpretivist framework is initially needed to understand and study the IS evaluation process. Their study analyzes a UK insurance company on the processes of change regarding IT appraisal practices in context. They also illustrate why and how the content and the strategies being constrained and/or enabled by features of the organizational context.

Jayasuriya(1999) adopts contextualist framework to illustrates the implementation issues in large-scale computerized IS in developing countries. The research discovers factors such as organizational structure and human resources are important issues to consider in implementing any IT project.

Huerta & Sandez(1999) use contextualist framework to analyze the guidelines of IT investment evaluation in four Spanish firms. They discover the relevant characteristic features of the four cases evaluation as table 3. Each case differs from other in context, process and content factors(Table 2).
Table 1. Relevant characteristic features of the four cases evaluation.  

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Evaluation Type</th>
<th>Strategic</th>
<th>Standard Financial</th>
<th>Financial Necessity</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context</td>
<td>IT purposes</td>
<td>Innovation, strategy</td>
<td>Internal coordination</td>
<td>Automation, added value</td>
<td>Automation</td>
</tr>
<tr>
<td></td>
<td>Manager role</td>
<td>Compromise</td>
<td>Interested</td>
<td>Unconcerned</td>
<td>Necessary evil</td>
</tr>
<tr>
<td>Process</td>
<td>IT driven by IT evaluation</td>
<td>CEO Different beneficial</td>
<td>CEO Similar beneficial</td>
<td>CIO Different useful but unnecessary</td>
<td>Users Unuseful and costly</td>
</tr>
<tr>
<td>Content</td>
<td>Considered values aims/criteria</td>
<td>Strategic related</td>
<td>Financial related</td>
<td>Financial necessity no related</td>
<td>Costs efficiency no related</td>
</tr>
</tbody>
</table>

Serafeimidis & Smithson (2000) use contextualist framework to examine failure of improvement of the IT investment evaluation in a UK utility company. They argue that the failure was due to lack of appreciate and support the necessary organizational change.

Contextualist framework will be used as the theoretical framework in this research. This idea arose from the research on IS strategy formulation conducted by T.M. Waema and G. Walsham in 1990(Waema & Walsham, 1990). They view IS in organization as social systems and the formulation of IS strategy as a social process. In the study, they propose a holistic analysis involving the content, context, and process of strategy formulation by using a case study of a medium-sized UK bank. There are three key elements—context, content, and process—be considered in the research. First key element of content in 1980, associated with the leadership of the new Chief Executive (CE) who had been a Marketing General Manager. The process of linking business strategy and IS plans under examination was performed by the CE alone. Context in the study includes various levels in the organization itself, but also the higher level of the industry, and the changing economic and political context of the UK. The aim of the study is to explore the importance of both internal and external organizational contexts and their linkages in understanding IS strategy formulation.

Contextualist framework is adopted in this study because the key aim of our study is quite similar to Waema and Walsham(1990). Our aim is to trace the dynamic interaction among elements of IT investment decision content, the process of IT investment decision, and the different levels of organizational and wider contexts.

In general, the theory of contextualist framework has been mainly used as an analytical instrument for exploring the relationship and interplay between the content of strategic change, the context of change and the process of managing change in organization studies. The theory of contextualist framework has an underlying processual perspective, where a process can be described as ‘a sequence of individual and collective events, actions and activities unfolding over time in context(Pettigrew, 1997). Social processes are considered embedded in the contexts that produce an are produced by them, therefore they cannot be studied outside this context. Processes can span different levels of analysis and there can also be multiple processes at the same level of analysis.

The first component of the framework is the content of investment decision which can be regarded as an aspect of the organizational context at any particular instant.

The second element of the framework is the context within which decision takes place. The contextualist framework places an emphasis on the importance of multilevel contexts, including not merely the organization itself, but also broader sectoral and national contexts. Context can be defined as phenomena at different levels that affect and are affected by the decision process.
The third element of the framework is the process. The linkage between context and process is viewed in contextualist framework as a crucial aspect of analysis; processes are seen as both constrained by existing contexts and involved in shaping contexts, either by maintaining them or altering them. The framework developed in this section is summarized in Table 3 which is used to guide the research. The research process requires social skills and awareness.

3 METHODOLOGY

This study adopts a qualitative case study approach with the aim of analyzing the contextual data in order to gain an insight of decision making. A major reason for the choice of continuing educational institution (named CEI) for a case study is its successful financial performance over the period 1995 to 2005, with IS being central to this achievement. CEI is founded in 1969 and is devoted to nurture, educate and meet the needs of continuing learners in an ever-changing society. Since its establishment, CEI has firmly held its belief of serving society and providing "the best" teaching quality to its students. With such a pursuit of perfection, in 1996, CEI is proudly ranked by the Ministry of Education as the "Number One" in excellence among all extension centers in Taiwan. Since then, CEI has maintained its high performance and continued to do its best in serving its students as well as the community.

This research involved a period from December 2005 to November 2007. The principal method of data collection was in-depth interviews, meeting minutes, documents and historic data. Additionally, many informal discussions were held over tea and lunch breaks with the staff of CEI.

Some interviews are recorded and summarized or transcribed. The interviews were tailored to each particular person and focused on their perceptions of what happened and why; on how decisions and actions were influenced on the various aspects of context in the process of investment decision. Other sources of data include documents from both primary and secondary sources. Some primary sources are meeting minutes, documents, internal memos and reports and the organization magazines. Secondary sources include articles in newspapers, and various educational sector publications.

The analysis of the data collected from the various sources reflected the analytical framework in trying to identify important content, context, and process elements of investment decision as perceived by different individuals and interest groups.

4 EXPECTED CONTRIBUTION

This paper describes and analyzes an in-depth case study of the IT investment decision process in a continuing educational institution. This study explores an often neglected of IT investment decision—non-economic dimension.

Reference


