Chapter 10

The Role of Enterprise Perceptions in Acceptance of Information Systems

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ABSTRACT

This study analyzes current and future enterprise use of various Information Systems (IS), such as management software, employing a technology acceptance model (TAM) optimized by the inclusion of Technological compatibility with previous IS and Web procurement. It also examines whether relationships in the model change according to the sector to which an enterprise belongs (i.e., if there exists a moderating effect of industry). The study applies two types of analyses: structural and multisample. The results show that Technological compatibility, Web procurement, Perceived usefulness and Perceived ease of use influence upon Future use of business IS. Enterprises need to be aware that interrelationships exist among the various IS. Investment in a specific system may facilitate the acceptance and subsequent performance of other applications. Furthermore, the “industry effect” modifies two important TAM relationships, and consequently it affects enterprise behaviour regarding IS.

INTRODUCTION

The competitive environment requires a continuous process of innovation within enterprises, in both their production and management systems. Information Systems (IS) have become a fundamental tool for the adequate development of corporate activity, significantly affecting production systems and the computerization of their basic functions (Doherty & King, 1998). The IS applied by enterprise are many and varied; some of these have already been sufficiently assimilated (e.g. the telephone and fax), while other more recent innovations have met with varying degrees of acceptance.
One of the most interesting IS developed in the enterprise environment has been management software, which in addition to facilitating the performance of basic management functions, permits firms to share information with those agents with whom it interacts in the course of its activity, thereby converting the flow of information into bidirectional owing to the use of the Internet. However, despite their numerous advantages and their presentation as attractive business tools, such software has not been generally accepted by enterprises, and the implementation of this software has been subject to serious failures (Wu & Wang, 2006; Park, Suh, & Yang, 2007). Additionally, in some cases, their effects on some performance measures were opposite to expectations (Stoel & Muhanna, 2009).

Understanding the reasons why enterprises adopt new IS has been the subject of considerable interest to researchers and practitioners, as they attempt to correctly define which factors condition such an important decision for enterprises (Bass, 1969; Kositanurit, Ngwenyama & Osei-Bryson, 2006). Most such research is based upon theories related to behaviour and empirically tested models in order to explain the set of actions of users on the basis of their beliefs and/or attitudes: Theory of Reasoned Action, (TRA), Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB) or Innovation Diffusion Theory (IDT). The most widely used has been TAM (Davis, 1989), which reflects the acceptance of different IS, establishing a connection between users’ perceptions and their final decisions.

The present study analyzes the principal factors inherent to enterprises which drive to the current and future acceptance of advanced IS for business management. The results will test the existing relationships between different IS in the business environment (Internet, email, EDI, web procurement and management software) and the effect derived from the firm sector (“industry effect”) upon technological behaviour. With this objective in mind, a Technology Acceptance Model (TAM) has been formulated and extended through new variables such as Technological compatibility and Web procurement.

The following section reviews existing research into IS acceptance, which provides the basis for the research proposals performed in this study. The study then presents the concrete objectives and hypotheses, outlines the methodology and describes the results. Subsequently, we outline the methodology and describe the results. In the final part of the study the conclusions and implications for business are presented.

THEORETICAL BACKGROUND

Technology Acceptance Model

Technology Acceptance Model (TAM) is an extension of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), which explains individuals’ behaviour on the basis of their beliefs and intentions. TAM concentrates on the analysis of IS and reflects the acceptance of different applications. TAM introduces two key constructs: Perceived Usefulness (PU) and Perceived Ease Of Use (PEOU) (Davis, 1989; Davis, Bagozzi, & Warhaw, 1989). Perceived usefulness is the degree to which users believe the use of a specific IS will improve performance (Davis, 1989; Klopping & McKinney, 2004); ease of use is the perception that using a specific IS will not require additional effort (Davis, 1989; Robinson, Marshall, & Stamps, 2005; Fuller, Hardin, & Scott, 2007). Generally speaking, perceived ease of use has a direct effect on usefulness (Yi, Jackson, Park, & Probst, 2006; Shim & Viswanathan, 2007) and both have an effect on final decisions (Bradley & Lee, 2007; Kamhawi, 2007).

Other new variables influence the effect of usefulness and ease of use upon the variable to be explained and increase the explanatory power of the model. These variables include extrinsic influences, e.g. peer group pressure or business
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