Business Acceptance of Information Technology: Expanding TAM Using Industry Sector and Technological Compatibility

Blanca Hernandez, University of Zaragoza, Spain
Julio Jimenez, University of Zaragoza, Spain
M. José Martin, University of Zaragoza, Spain

ABSTRACT

This study analyzes current and future company use of various new business technologies, such as management software, employing a technology acceptance model (TAM) optimized by the inclusion of experience with other technologies (Internet, e-mail, EDI, Web procurement). Moreover, it examines whether relationships in the model change according to sectors to which companies belong, that is, 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 future use of business technologies. Companies should be aware that interrelationships exist among the various information technologies. Investment in a specific IT may facilitate the acceptance and subsequent performance of other applications. Furthermore, the “industry effect” modifies two important TAM relationships, and consequently it affects the company behavior regarding technology.

Keywords: business management software; industry effect; multisample analysis; technological compatibility; technology acceptance model; Web procurement

INTRODUCTION

Currently, the new competitive environment requires a continuous process of innovation within firms, in both their production and management systems, to improve their performance and produce a constant increase in their results (Howard, 1995). Information Technology (IT) has become a fundamental tool for the adequate development of corporate activity, significantly
affecting production systems and the computerization of their functions (Doherty & King, 1998). The IT applied by companies is 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.

Recently, new management software have been produced, which in addition to facilitating the performance of basic management functions, permit companies to share information with those agents with whom it interacts in the course of its activity, thereby converting the flow of information to bidirectional owing to the use of the Internet. However, despite their numerous advantages and their presentation as attractive business tools, such software have not been generally accepted by companies, and their implementation have been subject to serious failures (Park, Suh, & Yang, 2007; Wu & Wang, 2006).

The reasons why users adopt new information technologies are, thus, important for researchers and managers (Bass, 1969; Kositanurit, Ngwenyama, & Osei-Bryson, 2006). The present study analyzes the principal perceptions and factors inherent to the company which drive to the current and future acceptance of new IT for business management. The results will verify the existing relationships between different IT in the business environment (Internet, e-mail, EDI, Web procurement and management software) and the effect derived from the company sector (“industry effect”) upon technological behavior. With this aim, a Technology Acceptance Model (TAM) has been applied and extended through new variables such as Technological Compatibility and Web procurement.

The following section reviews existing research into innovation acceptance; this provides the basis for the specific research performed here. The study then presents the concrete objectives and hypotheses, outlines the methodology, and describes the results. A special section analyzes the moderating effect of industry sector, followed by the conclusions and implications for business.

THEORETICAL BACKGROUND
In the last years, several studies report the existence of various critical factors which influence the acceptance of IT by firms, such as previous experience, market structure, ease of use, or compatibility. Some research employs behavior-related theories and constructs empirically tested models to explain the actions by beliefs and/or attitudes, for example the Theory of Reasoned Action, (TRA), Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB) or Innovation Diffusion Theory (IDT). The present study formulates a technology acceptance model (TAM) (Davis, 1989), because it has been widely used and is one the most successful models in the research of the last years.

Technology Acceptance Model
The Technology Acceptance Model (TAM) is an extension of the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980), which explains individuals’ behavior on the basis of their beliefs and intentions. TAM concentrates on the analysis of technology behaviour and reflects the acceptance of different technologies. 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 a potential user believes the use of a specific tool will improve performance (Davis, 1989;
Information System Conversion Strategies: A Unified View
www.igi-global.com/chapter/information-system-conversion-strategies/54377?camid=4v1a

Interactive Models for Virtual Enterprises
www.igi-global.com/chapter/interactive-models-virtual-enterprises/30864?camid=4v1a