

Chapter X

Determinants of ERP Implementations: An Empirical Study in Spanish Companies

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ABSTRACT

This chapter aims to determine the factors influencing the decision of implementing an ERP system in a country where technology awareness and the technological development are not as high as those of some others. Firstly, the authors assume that adopters make rational choices but the authors also introduce an alternative innovation model based on the imitation perspective. A questionnaire was sent to the Spanish listed companies and the ERP; adopting firms were compared with a matched control group. The main results indicate that the only factors stemming from the rational-choice perspective, whose influence is relevant, are firm size and the ROI ratio. Also, the authors found that the introduction of the euro and the Y2K issue had an influence in the ERP decision. The influence of the sectoral adscription was supported partially. These findings evidence a certain influence of the imitation effect. The results of this chapter could eventually be extrapolated to the countries whose national culture is similar to that of Spain.

INTRODUCTION

Advances in computer science and telecommunications have crystallized in a set of innovations in management that allow us to improve the communication of information as much inside companies as between the company and the external users. Among them there are the Enterprise Resource Planning (ERP) systems. ERP systems can be defined as customizable, standard application software which includes integrated business solutions to the core processes (e.g. production planning and control, warehouse management, etc.) and the main administrative functions (e.g. accounting, human resource management, etc.) in a company. ERP systems are comprised of a suite of software modules, with each module typically responsible for gathering and processing information for a separate business function. The basic features of these systems are modularity, complementarity and managerial capacity.

The diffusion of ERP systems has grown exponentially over the last few years. Since 1997, the world market for ERP systems has experienced high growth rates (Eckhouse, 1999). According to the European e-Business Report, companies using ERP systems in seven EU countries reached 28 percent in 2005 (European Commission, 2005). This rate is even higher for the companies of the pharmaceutical and automotive sectors. This expansion has also taken place on the Spanish market. By 2002, 70 percent of the biggest Spanish firms had implanted ERP systems (Grupo Penteo, 2003). What reasons underlie this ERP implantation in Spanish listed companies?

The innovation literature is dominated by an efficient choice model which is based on the assumption that users make rational choices guided by goals of technical efficiency (March, 1978; Grandori, 1987). Nevertheless, some researchers have presented forceful arguments for using multiple perspectives in innovation research. These provide better explanations of innovation than does the efficient choice model (Poole and Van

de Ven, 1989; Abrahamson, 1991). They present alternative innovation models based on an institutional perspective of organizational theory.

This paper follows the organizational innovativeness (OI) research line and seeks to determine the factors that have influenced the decision of implanting an ERP system at individual level. These factors have not received much attention in prior research and, thus, have been investigated in only few studies (Brown et al. 2000; Ross and Vitale, 2000; Knapp and Shin, 2001). In addition, this research analyzes the diffusion process of the ERP systems in a country that is not highly developed technologically as some others. So, our results can be extrapolated to other similar economies, as the bulk of prior research has focused on ERP diffusion in the USA and other countries where technological awareness is higher than in Spain, especially among top management.

Hofstede (1983) identified four dimensions for the description of culture: power distance index, individualism index, uncertainty avoidance index and masculinity index. Later, a fifth dimension was added to this framework: long-term orientation, but it has not been very used in empirical research works. Two of these dimensions may have an influence on the reasons behind the implementation of an ERP system: power distance and uncertainty avoidance. Power distance is higher in Spain than in other European countries (Germany and UK) and the USA. This is an obstacle to open communication, true involvement-winning contexts and transparency of the "rules of the game". It also inhibits employee perception of positive and exemplary behaviour by management. Uncertainty avoidance is clearly higher in Spain than in other European countries (Germany and UK) and the USA. This indicates that Spanish companies tend to prevent creativity, proaction and innovative attitudes. Strong uncertainty avoidance hampers the emergence of new ideas and even more the implementation of innovations. The implementation of a new way of management might be seen as one of these new

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