ERP Systems in Hospitals: 
A Case Study

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ABSTRACT

Enterprise Resource Planning (ERP) systems integrate information from different departments in one common database for an entire organization. They have demonstrated their efficacy in a number of companies of different types. However, a problem arises in organizations with highly differentiated cultural areas; often such areas have traditionally had independent information systems and control over the interests of their area, such as hospitals. This case study analyzes the process of an ERP system implementation in a hospital. The study’s objective is to identify, by means of this qualitative research technique, the principal technological objectives that were set in the process of implementation, which of those objectives were achieved, and the deficiencies that have subsequently become evident.

Keywords: Case Study, Enterprise IS, Enterprise Resource Planning (ERP) Systems, Healthcare Industry, IS Integration, Organizational Efficiency

INTRODUCTION

Among the factors that have been characterizing the business environment in recent years are increased competitively between companies, the rapidity of technological change, shortened product life cycles, increasing use of subcontracting, the flattening of traditional bureaucratic structures in organizations, and the growing importance of the communications media as a result of the globalization of markets. Largely as a result of this situation many companies have decided to implement Enterprise Resource Planning (ERP) systems as one means of confronting the new challenges and threats they face (Fan et al., 2000; Robinson & Wilson, 2001).

The reasoning behind this decision is that ERP is considered particularly appropriate since it brings together three properties essential for adapting to a business environment of this type (Chen, 2001):

− ERP systems provide a multifunctional perspective that encompasses the various different areas of the company (Finance, Inventory, Sales, etc.)
− Since they are integrated systems, the same items of data can be shared by different areas.
− ERP systems have a modular structure, which means that different combinations of
modules can be utilized in function of the needs of the company.

These properties, together with the evolution of the technologies of information and communication, and the need for integration, have led to increasing interest in ERP as a tool for coordinating the management of different organizational units (Al-Mashari, 2001; Sikora & Shaw, 1998).

Hospitals require integral systems which permit the planning of procedures to be applied to patients, while simultaneously analyzing the required capacity (Merodea et al., 2004). In this area, several studies have already been conducted, such as those of Rubin (1999), Trimmer et al. (2002) and McGinnis et al. (2004). Rubin (1999) analyzed the use of ERP systems for improving the process of materials management in hospitals, and described the success represented by the integration of the whole supply chain in one single system. Trimmer et al. (2002) deal with critical success factors for small health-care organizations. The results indicate that support for the continuing use of critical success factors help focus on the benefits of ERPs. McGinnis et al. (2004) present the case of a small, rural community hospital that has successfully implemented a sophisticated ERP system.

Apart from the inherent complexity of the service they provide, hospitals are an example of organizations with differing cultural functional areas; there are different groups able to exert pressure during the set-up of an ERP system (Canis & Lamarca, 1996). Should the organizational culture influence the ERP implementation (Palanisamy, 2008), it is worth carrying out going deeper into the study of organizations with different coexisting cultures. This makes it more important to analyze the effects of implementing the ERP system within the hospital organization, as well as on each of the existing groups, considering the differences in user perception (Kamhawi, 2008; Subramanian & Peslak, 2010). This study analyses the role of the ERPs as facilitators of information integration in the hospital environment, and identifies the influence exerted by the different cultural areas, especially clinical and administration, since their personnel is habituated to using independent information and control systems.

Specifically, the following sub-objectives are established:

1. To determine what were the prior expectations of those responsible for the hospital in respect of the implementation of the ERP system.
2. To analyze the system design and subsequent implementation process to determine if the terms, objectives, and initial expectations were met.
3. To evaluate the functioning of the system once it was implemented, to check whether the heterogeneity of the various pressure groups that coexist in every hospital, with their different visions in respect of the hospital’s role influenced the implementation of the system, and how that influence affected it.

BACKGROUND

For Newell et al. (2002), ERP systems represent a new class of information system designed to help integrate all the key areas of activity of a company, particularly the financial, productive and human resources functions. The appearance of ERP marked a trend towards the acquisition of standardized information systems, rather than tailor-made systems designed to meet the specific needs of a particular organization (Burns, 2009).

As a consequence of the division in functional areas, traditional information systems were focused on supporting each functional area, and only rarely did they ensure that data flowed smoothly between the different functional areas. This was aggravated by the fact of that the information systems of each area had, in many cases, been developed independently, with data formats that were incompatible or
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