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## Application Integration: Enterprise Resource Planning (ERP) systems in the hospitality industry

### A case study in Portugal

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#### Abstract

Business and technology evolution, globalisation and competitiveness improvement, are factors leading organizations to adopt last generation technology, therefore creating heterogeneous technical environments in most cases. Thus, the technical issue of Information Systems (IS) integration became more and more complex due to the need to share data and functionalities among several systems. And this is a challenge in what flexibility and adaptability are concerned. This paper has the objective of focus the problem in the context of ERP (Enterprise Resource Planning) systems, in particular in the sector of hospitality industry, through a case study developed in Portugal, discussing strategies towards application integration projects.

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## 1. Introduction

The fact that ERP Systems don't automate all processes of any organization implies the existence of other application software, either legacy or to be developed, that must be connected to the ERP system [1] [2].

In the hospitality industry, where the need to integrate internally and externally is even more marked, it is critical to map all available technology to integrate the applications running within the organization, as well as the connections to external players in the industry value chain.

Each type of integration has solutions focused on determined areas, sometimes sharing functionalities with the rest. This reality difficult the choice of the most appropriate solutions and complicates the understanding of existing technology. It is important therefore to describe and analyze such solutions.

Section 2 of this paper resumes evolution and status of ERP in the hospitality industry, while section 3 presents the methodology used in the investigation. Section 4 lists underlying reasons why integration is an issue and section 5 presents major integration standards offered by the software industry. Section 6 is dedicated to the results of the case study investigated, discussing some of its more relevant assumptions concerning integration. Finally section 7 presents the conclusions of this paper.

## 2. ERP Systems in the hospitality industry

The modifications offered by the impulse of technologies force the change in the way business is conducted in the hospitality industry. IS/IT in the hospitality industry must provide the required flexibility and efficiency by facilitating the understanding of customer needs and adapt consequently [3].

ERP Systems emerged as a way to automate repetitive processes and provide managers with a global vision and real-time all operations, solving the problems of disintegration and fragmentation of information [3]. The problem of fragmentation of information is felt, as in other activities, within the hospitality industry [4]. In this industry, ERP Systems have a particular relevance for the diversity of applications and specific systems for various functions. The predominance of legacy systems, of difficult upgrading, maintenance and incompatibility, makes its updating more complex [3].

The international chains, or larger units and groups, have adopted ERP Systems traditionally used in other industries. SAP is market leader, in particular for larger hotels [5]. With regard to the specific processes of the hotel units, primarily front office, for example, reservations, stock and supply, F&B (Food & Beverage), or point of sale management (POS – Point of Sales), specific solutions are adopted, often from suppliers who do not offer integration with the back office and the implemented ERP System [4]. As a consequence integration of applications is an increasingly relevant issue.

In a study carried out at the hospitality industry in Israel, Heart et al. found that 97% of the hotel units were computerized (but not by what could be considered ERP Systems), including those who had less than 50 rooms. The most common front office applications were the reservations and the front desk; the most common back office application was accounting. Unlike other industries, less common applications were sales and marketing, and human resources [4].

In the same study, Heart et al. found the absence of ERP Systems targeted for the hospitality industry in Israel, which forced the hotel units to acquire isolated applications from different suppliers. He also noted the absence of integrated applications that share the same database. The diversity of applications from different suppliers increases the complexity of the updating and maintenance of the applications implemented [4].

## 3. Methodology

With the purpose of identifying major critical success factors when implementing ERP Systems, as well as factors that may obstruct organizations from being competitive, a case study was carried out based on data gathered on an important economic Portuguese group. The study also intended to understand how the hospitality industry can solve the problem of the disintegration of information of the various implemented business applications. The research did not seek to confirm or refute hypotheses or the quantitative measurement of the influence of variables in a particular

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