Chapter 2.12

Enterprise Resource Planning Systems for Small and Medium–Sized Enterprises

Rogerio Atem de Carvalho
Fluminense Federal Institute (IFF), Brazil

Björn Johansson
Center for Applied ICT, Copenhagen Business School, Denmark

ABSTRACT

After the implementation peak of ERPs that occurred during the pre- and post-Y2K periods, the high-end ERP market started to saturate and major ERP vendors started to seek for new business opportunities, in special towards Small and Medium-sized Enterprises (SMEs). On the buyer side, demands for becoming more competitive in a globalized market, have been pushing SMEs to adopt ERP too. Additionally, influenced by the free/open source movement, new types of ERP licensing appeared by the beginning of the decade, creating a classification according to the basic licensing model: free/open source ERP (FOS-ERP) and proprietary ERP (P-ERP). Therefore, this paper aims at exploring the merge between SMEs, P-ERP, and FOS-ERP, by analyzing the differences between the two proposals and offering guidance for prospective adopters.

INTRODUCTION

For the last fifteen years the biggest software category in terms of investment has been Enterprise Resource Planning (ERP) systems and nowadays most of the bigger companies, including practically all global-players, have implemented ERP systems in the search for achieving competitive edge in their business areas (Church, 2008; Hendricks, Singhal and Stratman, 2007). After the implementation peak that occurred during the pre- and post-Y2K periods, the high-end ERP market started to satu-

rate and, according to Kim and Boldyreff (2005), major ERP vendors started to seek for new business opportunities, in special towards small and medium-sized enterprises (SMEs).

On the buyer side, demands for becoming more competitive in a globalized market, have been pushing SMEs to adopt ERP too. However, the ERP strategic nature (Caulliraux, Proença and Prado, 2000), and the fact that it cannot be used instantaneously (Dreiling, Klaus, Rosemann and Wyssusek, 2005), makes ERP a different kind of software which implementation requires high quantities of resources and entails high risks. These factors have been raising the interest on ERP versions for SMEs on both the demand and supply side of the market, making a recent market movement towards simplified versions of proprietary ERP (P-ERP) and bringing more attention to free/open source ERP (FOS-ERP). Therefore, it is clear that the merge of P-ERP, FOS-ERPs and SMEs is a topic with many facets and yet to be more explored in both theory and practice.

This chapter aims to explore this merge, firstly by briefly introducing Generalized Enterprise Reference Architecture and Methodology conceptual framework, which in the following section is used to guide the description of the adoption process by SMEs, followed by an detailed analysis of the differences of each proposal, and finally by a basic guidance for prospective adopters.

A FRAMEWORK TO GUIDE ERP ADOPTION

Selecting an ERP for adoption is a complex process, because, besides the size of the task, it is an important enterprise component that impacts the adopter organization in financial and self-knowledge terms. In that aspect, the Generalized Enterprise Reference Architecture and Methodology (GERAM) is a well-known standard that can be used to identify the main phases of an ERP

Figure 1. GERAM lifecycle phases
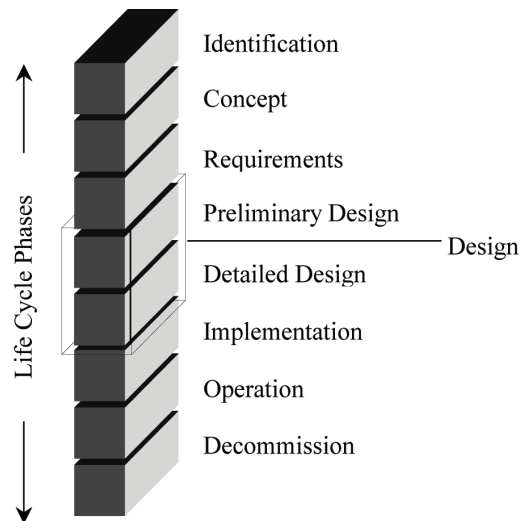
adoption project, helping guiding the comparison of free and proprietary alternatives.

The GERAM framework provides a description of all elements recommended in enterprise engineering and a collection of tools and methods to perform enterprise design and change with success (IFIP – IFAC, 1999), providing a template lifecycle to analyze ERP selection, deployment, and evolution. GERAM defines seven lifecycle phases for any enterprise entity that are pertinent during its life. These phases, presented in Figure 1, can be summarized as follows:

1. **Identification:** identifies the particular enterprise entity in terms of its domain and environment.
2. **Concept:** conceptualizes an entity's mission, vision, values, strategies, and objectives. During this phase, high-level objectives are established, such as the acquisition strategy, preliminary time and cost baselines, and the expected impact of ERP adoption.
3. **Requirements:** comprise a set of activities needed to develop descriptions of operational requirements of the enterprise entity, its relevant processes and the collection of all

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