Evaluating Open Source Enterprise Resource Planning (OSERP) System:
Toward a Stable E-Commerce Support

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INTRODUCTION

Managing an enterprise is a demanding task that mostly includes a series of related activities such as purchases, inventory, supply chain, sales, delivery, finances, manufacturing, and human resources, among others. Nowadays, tracking the mentioned activities for getting management information, and taking business decisions, is a complex and time consuming task which turns into the introduction of several computer-based systems and applications for facilitating it, such systems have the mission of providing information required by managers and decision makers.

Enterprise Resource Planning (ERP) systems are some of the proposed solutions to facilitate data exchange among different departments or processes within an enterprise. With the appearance of e-commerce, as a way to offer products (goods and services) making them on-line available in a 24/7 format, information exchange among the business stakeholders has become more demanding. This emerging scenario has influenced the evolution of ERP systems which tend to include certain technologies into their architecture to move toward the e-commerce approach.

We have found in an introductory review that many Open Source ERP systems (OSERP) have enough completeness to afford the managing task mentioned above, nevertheless their levels of development are heterogeneous, it means in every OSERP there were enough support for some tasks which we defined as basic ones, while for some other, defined by us as advanced ones, support is limited to only some of the studied OSERP.

E-commerce is one of the tasks considered as advanced in the introductory evaluation we performed. This e-commerce support is also heterogeneous, given that technologies supported are different, while some OSERP included proved and stable Web technologies, others include emerging technologies as Knowledge bases. In this scenario, we consider that there is a lack of studies which could provide candidate users with a detail criterion that include the mentioned variables, so that final user could have enough information to choose a OSERP according to their requirements.

In this work, we propose to bring in a characterization of OSERP systems based on their e-commerce support, the respective Web technologies included in each OSERP, and a view about their scalability henceforward. Moreover, a brief evaluation of classical features such as installability, usability and documentation support toward e-commerce was included.

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EVOLUTION OF SYSTEMS TO SUPPORT BUSINESS MANAGEMENT.

Technology has always been a success key factor for Enterprises; consequently, managers attempt to include it in their business process as soon as it becomes available. In this vein, ERP systems were not the exception, and they have evolved along time, including certain technologies which facilitate reaching their goals. This technological evolution was identified by (Delsart & Nieuwenhuysen, 2011) and (Bepi, 2008) with some differences. The first authors identified three major periods, and the second one was more specific and identified six periods, furthermore they mentioned features that characterize such periods.

Figure 1 introduces a view of ERP evolution, on the horizontal axis there is a timeline that starts at the 50th – 60th decade and a vertical axis for the complexity evolution, this last one indicates when a certain feature was introduced. During the first three decades, there was a sort of legacy ERP system called Manufacturing Resource Planning (MRP), it evolved from simply stock and order managing toward Enhancement, and Forecasting, it is relevant to take into account that in those years the cost of computers and system still represented a high cost (Schreyer, 2002) for enterprises. Consequently, in those years small and medium size companies could not take advantage of such technologies.

In the 80th decade, the exchange of information among different departments of the company was possible with the advent of microcomputers (Hammer & Champy, 1994), and networks. It contributes to identify customers and marketing needs as new important factors. At this point, the term Enterprise Resources Planning (ERP) was firstly introduced as an indication that the enterprise vision was changing; henceforth, enterprise departments should not be seen as isolated items anymore.

Figure 1. ERP Evolution along time