

# Open Source ERP Software for Small-Medium Enterprises: A Case Study of Vietnamese Firm

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**Abstract.** Most enterprises use various applications for serving their routine business. One of the most widespread applications is the enterprise resource planning (ERP). This paper focuses on open source ERP software and aims to find out what benefits it can bring to small and medium-sized enterprises (SME) comparing to proprietary ERP. To serve that purpose, this paper introduces a successful adoption approach for open source ERP software through a case study of a small Vietnamese firm. The results show the advantage of open source ERP software and the possibility of adoption for SME.

**Keywords:** open source software, open source ERP, enterprise resource planning (ERP), small-medium enterprise (SME), Vietnamese firm

## 1 Introduction

The majority of ERP software come from famous and big global vendors and they are commercial versions, for instance, SAP, Oracle, Solomon, Microsoft Dynamics, etc. It means that the enterprise must invest a lot of money for commercial ERP solution. Therefore, it is very difficult for small-medium enterprises (SME) to implement commercial ERP software in their organizations.

The availability of open source ERP software has changed this situation [8]. Open source ERP software which has a low cost but still meets the enterprise management requirements is really a comprehensive solution for SME, especially in a developing country. Hence, the purpose of this paper is to indicate the advantages of open source ERP software for SME and illustrate it through the adoption case of a Vietnamese company using an open source ERP software. Section 2 provides an overall review of the main concepts used in the paper. Section 3 presents the case study clearly. Finally, section 4 discusses the implications of this research and conclusion.

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## 2 Literature Review

According to Wikipedia, open source software is computer software which has available source code and is under an open source license. Based on that license, anyone can get the software to use for their own purpose such as studying, researching, improving it by changing the source code or distributing the unmodified or modified software [5]. Besides, the user can participate, contribute, adopt, and use the software while the other companies can also invest this concept and build their own solution at the same time. [1].

Starting with the early development of computers in 1950s, through many ups and downs, currently, open source software has the irreplaceable position together with many brilliantly successful products such as Linux, Apache, etc. These projects became role models for further development of open source software and gave a lot of value for the community developing open source products [1]. Open source software is considered one of the 10 factors by Freidman [3] that contributed to the Globalization 3.0 of our current society in which the world has become more and more closer as a global village at an unexpected high speed.

The current ERP market is dominated by two main proprietary ERP software developers: SAP and Oracle with their billions of dollars revenues [6]. The appearance of open source ERP software has created a significant breakthrough in this market [5].

De Carvalho and Johansson [2] defined free/open source ERP as follows: it is ERP systems that are released as free software or open source software. Particularly, there are two classifications of open source software: community and commercial [7; 9]. The developed code is freely available to any user via the internet. *Commercial open-source software* is software that a vendor owns and develops for profit. It is a combination between community and proprietary software, so it has similarities to the above mentioned two types.

## 3 Case Study

The case study below describes the implementation of Openbravo, which is an open source ERP software, of a small enterprise in Vietnam, namely NgocPhucWeathertex Co., Ltd. This case study clearly illustrates the process of adopting an open source ERP of one SME in order to provide a closer look at how an open source ERP can be applied in SMEs.

### 3.1 Company background

NgocPhucWeathertex Co., Ltd is a limited textile company located in Ho Chi Minh City, Vietnam. From September, 2004, the enterprise started its own business and founded the official company in November, 2006. The company cushion factory was set up in 2005. NgocPhucWeathertex is specializing in manufacturing outdoor cushion, sofa, pillow, parasol cover, garden swing cover, gazebo cover, etc. Most of its products are exported to the USA, Europe and Australia. In addition, the company also aims at

clients in the UK market by producing cushions with F.R certification (BS5852 Standard) to meet the requests from UK market.

### **3.2 User requirements**

The board of directors is aiming to the ease of use of ERP system for the staff so they want the user interface to be entirely localized into Vietnamese. There are no more requests on the user interface such as color, image, etc. The company mainly focuses on the functionality of the ERP system.

Based on the company needs and status, open source ERP software will be implemented to match company size, the current business procedures and the strategic development goals of the enterprise owner in the future.

There are five main modules the company needs to operate all its activities in the ERP system including procurement (or purchasing), inventory (or warehouse/storage/repository), production, sales and material requirements planning (MRP). The most important aspect is that the current business processes of Weathertex's departments have to be executed within the appropriate modules. For example, repository management module should allow warehouse manager to perform internal and external businesses such as import goods, export goods, inventory, etc. Additionally, ERP system must ensure the ability to access data and functions of each user within the system by using appropriate privileges in order to provide each user with a particular role which has specific permissions, which are different from administrator privileges.

### **3.3 Results after the implementation process**

When the implementation stage had ended, the enterprise entered the new critical stage, which is the go-live period. In that period, the company and new ERP system would really work together. Working with the new ERP system, at first, the NgocPhucWeathertex's staff were not familiar because they did not use any kind of enterprise software before. It was a big leap for the company. After that, because of the ease of use of user interface along with the corresponding business processes, the staff could operate all daily activities of the company in Openbravo and they found that their job became easier and more comfortable than it was before. Therefore, they could improve their performance considerably and their work was more effective. The board of directors also felt that the external and internal business of their company was carried out smoothly than before and they could manage it easier and better. They could immediately capture the real-time data without going to the production section or the warehouse department in person when they needed the information or waiting for reports from the staff. Additionally, using the Openbravo system helped them reduce the sheer volume of business that they have to take care of, which they would have to do manually if they did not have the ERP system. Thus, they were able to concentrate on more critical missions such as building strategic goals, consolidating company's brand name, organizing marketing campaigns and finding out new business partners, etc.

With the optimistic situation that resulted after the go-live period, the company hoped to not only gain more valuable benefits but also sustain its strengths along with the competitive advantage from Openbravo as they were going to expand NgocPhucWeathertex's size and develop strategic goals for the future. Adoption of the ERP system motivated them and gave them power and a chance to be more successful in the high growth rate economy.

Figure 1 shows the main screen and main menu of Openbravo when the users log in successfully. From the main screen, users can execute different functions related to data management, procurement management, warehouse management, production management, sales management, financial management, etc. The system provides easy and intuitive interface for users to accomplish various tasks.



**Fig. 1.** Openbravo's main screen after logging successfully

## 4 Conclusion and practical implications

This paper has discussed the issues in adopting an open source ERP package and used the NgocPhucWeathertex company as a case study. It makes the following contributions to the readers.

Firstly, it offers an alternative which is extremely attractive over proprietary ERP software to potential SMEs who have an ERP implementation plan or a similar requirement in the future. The reality is that ERP is a complex system. So, open source ERP software with its distinct advantages will be a suitable and right choice for SMEs to fulfill their critical goals in business. Especially, open source ERP is very good for the developing and poor countries [4]. SMEs in these countries may not be able afford but may have the necessary conditions to adopt proprietary ERP software. In contrast to proprietary ERP software that may not really be reasonable, open source ERP packages may have better fit and be appropriate for them not only from the functionality perspective but also from the productivity perspective.

Secondly, it lends empirical support to practitioners through the case study of

NgocPhucWeathertext company. SMEs will understand clearly and specifically how the real implementation process of an open source ERP software is carried out. It is good source of reference for SMEs in case they are going to adopt open source ERP software in the future. They will know what needs to be done for a smooth adoption of open source ERP package.

In the next few years, open source ERP technology will be one of the most notable emerging technologies. The trend of adopting open source ERP software will be more popular within the SME community instead of spending a lot of money on the commercial ERP software. Along with the development of information technology (IT), SMEs can find other ways of adopting the ERP software such as using software as a service (SAAS), or through cloud computing environment, etc. besides open source ERP software. These forms are getting popular as the emerging paradigm. It will hopefully bring promising experiences for prospective SMEs by the new way of using IT applications and gain value from it.

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