CHARACTERISTICS OF OPEN-SOURCE PRODUCTS USED IN THE ACCOUNTING OF SMEs

Marian Pompiliu CRISTESCU [1], Uyar KUMRU [2]

[1] *"Lucian Blaga" University of Sibiu, Sibiu, Romania*
[2] *Nuh Naci Yazgan University, Kayseri, Turkey*

Abstract:
The current paper intends to develop this topic and to present a computer model consisting only of open source products aimed to the computerization of accounting in micro, small and medium enterprises. This work is highlighted by the fact that open-source products can be the ideal solution for SMEs, in providing accounting services at costs close to zero. In addition, it outlines how these products can be used to provide the accounts under normal conditions, in such a way that they will bring at least the same results as manual accounting, or one that involves the use of licensed accounting software products.

1. Introduction

The accounting domain, as well as other industries, has experienced a series of changes over the time, which didn't do anything else than to develop working procedures and carrying out this task by default. Living in the age of information, when data flows are increasing, the computerization of accounting domain becomes inevitable, in order to simplify work and to ensure the security of the data.

Solving problems in terms of reducing the costs of companies using open-source products, involves knowledge synthesis and some detail, at least

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[1] *Faculty of Economic Sciences, email: marian.cristescu@ulbsibiu.ro*

[2] *Production and Marketing Department*

in the area of accounting, computer science, economics, management, economic analysis and with regard to management information systems and informatics used in the economic area.

In recent years, licensed software industry has been invaded by voluntary movement of open-source software products. This phenomenon has its origins in the so-called "free software", meaning computer programs which can be used freely. As Richard Stallman claimed in 1983, "a software freedom implies the right to be able to be used for any purpose and can be adapted to users' needs. Also, they must have the opportunity to improve the program and distribute it to others, to increase the number of beneficiaries "(Stallman, 1983).

Open source products, as their name suggests, are those programs that provide free access to source code, bringing users the advantage to be able to view and change it at will. In this way, any open source software, regardless of their activity can be changed and transformed, as needed.

Most of the times, "this type of open source programs, are offered free of charge, for use, modification, or even sale in the form of other products. There are, however, certain circumstances, when modifying the source code requires compliance with certain commercial conditions"(OSI).

The term "open source" was coined in 1998 by the founders of a non-profit organization called "Open Source Initiative", whose sole purpose was to promote and provide education in relation to the benefits of the open source software products (OSI). This association operates to this day, having a large number of members and developing a broad portfolio of collaborators, who are there only for providing support with the existing open source software products. (Figure 1)
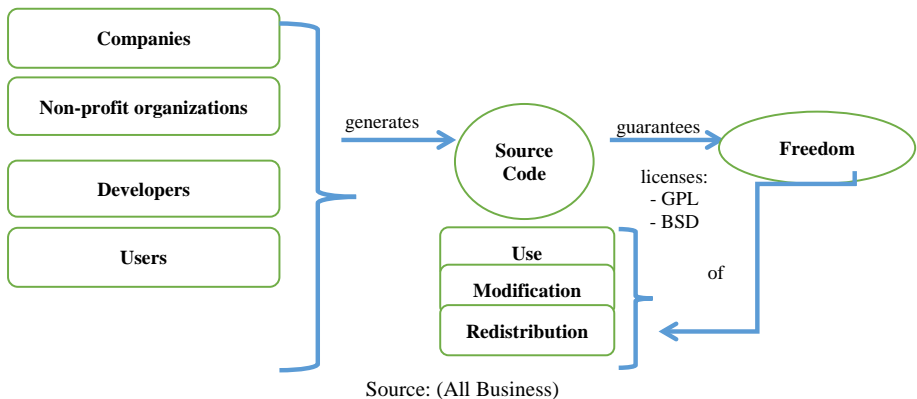
Figure 1: Open Source Initiative contributors

Source: (OSI)

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Open-source programs should not be confused with the 'freeware' software or the 'shareware'. The freeware is distributed free of charge for an unlimited period, but users can not access the source code and are not allowed to modify or further develop software. 'Shareware programs, most often, are offered free of charge for a period of time well established in versions called 'light' or sample,when the consumer can try the program before buying it' (All Business).

Figure 2: Operation mode of open source software

Source: (All Business)

As figure 2 illustrates, "open source products are those software programs that can be used, studied, modified and redistributed with minimal restrictions by any user. Source code of any open source software, is accompanied by a legal licence guaranteeing all these permissions. The licence can be of LPG-General Public License type, which ensures that the software remains free to all users, regardless of their contribution to the final version, or BSD-Berkeley Source Distribution, that involves minimum restrictions regarding the redistribution of the software"(Jesus Garcia, 2013 p.5).

The use of the open source products, due to specific characteristics, brings to the users a set of advantages. Open source software applications are transparent, available mostly free, that allow viewing, modification and development of the source code. This is ideal when is desired the customization of applications, depending on the needs they have or when the

users intend to solve an existing problem, each of them being a step ahead in the acceleration of information progress.

2. Open source software versus commercial software

Since the development point, an open source software differs from one done traditionally for commercial purposes (paid licenses or not). The main goal of an open source product is to create something useful and helpful for those who have particular needs. Mainly those who develop such programs are unpaid volunteers, who bring their contributions to a project or passion for programming, either popularity or simply for personal satisfaction. From this simple fact derives a number of differences between a commercial software and an open source one, which are doing nothing but emphasize the advantages and disadvantages involved in each category (Table 1).

The main differences are the problems of cost, independence, reliability, robustness, innovation, durability, security and support. The licensed and also open source products fail to achieve perfection and are not providing a package of services that meet all the quality features ideal for a software program. However, at least one category, succeeds to provide a greater number of quality characteristics, and this is assessed differently, depending on the needs of each user. The differences between a commercial software (owner) and an open source software are:

Table 1: Differences between open source and commercial solutions

Open source software	Commercial software
Free (most of them)	Involves costs
Access to the source code (with the possibility of modifying it)	No access to the source code
The right to install and copy the program for countless times	Limited rights to use and copy
After modifying the source code, the product may be reissued with the condition of mentioning the changes made	The software can not be resold
Most times the documentation doesn't exist, but there are large communities of active users	Full documentation conducted by producer
The product is rapidly changing and the performance advance due to the multitude of contributions of external users	The product is developing according to producers budget and time
Technical support can be requested from any specialist, this bringing the advantage of low consultancy prices due to the concentrated competition	Technical support is provided by the producer (sometimes surcharge)

Source: (Agora, 2010)

This table illustrates that open source products are an option that competes effectively with commercial software on the market, so users can decide what is best for their needs. For example, when an organization collects information on available software solutions, open source applications can be tested at this time, while only certain owner programs offers are free of charge and without delay. Also, the purchase of an open source product is cheap and most of the times free, unlike commercial programs which require payment of a licence for use. Moreover, if in a given moment you are unable to pay for the licence, most often the application is locked and shall be disqualified from service. Also, if after the acquisition, the owner doesn't want the program anymore, the money paid on the licence are lost, instead by quitting an open source software, nothing is lost.

An important advantage the owner software are bringing is that manufacturers invest more in them during the design process so they are simple to install and set up, while open source applications are sometimes involving the allocation of costs for requesting external help. However, due to the flexibility of open source programs, because they involve accessibility to the source code, users are allowed to make customization changes or repair errors. At the same time they can consult, in relation to certain amendments, to the many other experienced open source users support community.

3. The current situation of open source software

Even though at the time of the emergence of the open source software idea, people did not show much interest, the latest studies show the usefulness and the growing popularity of open source products among users worldwide.

At the willing of the company Bull, Forrester Consulting conducted a survey in 2010 regarding the open source programs (Club IT * C 2010 pg. 6-7). It was found that from the 132 large companies that were interviewed, 45 percent of them are using open source solutions in their own applications. Moreover, at the European level, these products are used in numerous projects in the public sector of various countries such as Germany, the United Kingdom and France.

Furthermore, another study conducted in November 2010 by the Gartner consultancy, on a scale of 274 companies in the United States, Asia and Europe claims that 85% of them use open source technologies, and the remaining 15% are planning to implement such applications in 2011.

According to these statistics, the main reason they chose this kind of application is related to the cost reduction (56% of respondents), and the second reason is the code editor independence, which is important for 45% of respondents. Also flexibility and innovation are some of the reasons why companies have chosen to use open source applications.

Regarding the technologies with paid license, they are considered "a waste of public money that most managers did not allow", according to the statement of the European Commission Vice President Neelie Kroes, which supports and recommends the use of open source by the Member States of the European Union (Kroes, 2012).

The latest study, conducted in 30 October 2012 by Forrester Consulting claims that the "open source solutions are bringing the highest satisfaction rate among consumers" (Forrester Consulting, 2012). At the request of the company Acquia, the study was conducted on a sample of 160 companies from all over the world, and those who make use of open source technologies in carrying on their activity are clamming that appreciate mostly the flexibility that these programs ensure and the ease of customization. According to a respondent from United Kingdom, adding new functionality to a paid licensed software lasted between nine and ten months, while in an open source solution, the company was able to introduce those new functionalities within a few days.

Over the past five years, numerous companies and organizations in Romania (a good example is the Rosedu, association of the Faculty of Automatics and Computer Science of the Politehnica University of Bucharest) seeks to promote and provide education in the field of open source, precisely because their internationally prevalence and facilities involved in their use.

4. Open source products in the accounting field

Open source products are noted in the accounting, and by their characteristic features are trying to simplify and streamline the practice field, from the desire to reduce resource consumption. Open source products are growing as the running company increases. Since the code is open, they allow personalization changes according to the needs of the business.

Accounting oriented open source products offer flexible alternatives for all types of businesses, from small companies, which are not able to

purchase an accounting software, to large companies which are dissatisfied with the performance of used software application.

The accounting operations are among the most important in an entity, therefore accounting software packages should be designed to process complex transactions. I say this because accounting programs decide how companies execute, process and track financial transactions.

Both people and businesses need accounting software to help them automate the routine tasks that accounting involves, to establish control and to create financial statements.

Choosing financial accounting products is a management issue, which aims to automate accounting processes of the entire organization. Therefore, it is necessary to have a package of open source applications to handle the entire computer system of the company in an economic and efficient manner.

4.1. Open source ERP system - Webgest

Webgest is an original Enterprise Resource Planning system, which uses the latest Web-based open source technologies. It works on many operating systems including Linux, Windows, FreeBSD and Mac OS and requires for installation and use a processor of over 2 GHz and over 1 GB RAM of memory (Webgest, 2013).

Webgest accounting system is useful for small and medium enterprises in different fields of activity or the accounting activity of the companies and includes the functions of an ERP management system in the relationships with customers and suppliers, treasury operations, accounting and reporting. It also performs the management of the documents and the exchange with business partners and institutions.
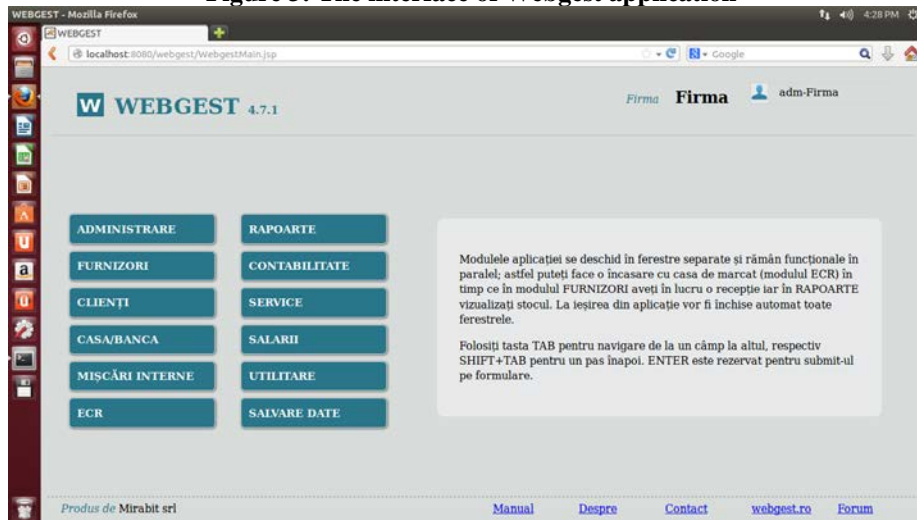
The access to the application is made via a Web browser over the Internet, wherever they need, from any mobile device, since there is no need to install client software on each device.

Licensing costs for Webgest and all the software support needed for running are zero, from the operating system up to the last bookstores are free and open source. Installation requires the Apache Tomcat open source server and MySQL database management system. (Webgest, 2013).

Webgest application is an ERP system, which includes most of the functions of such an application, such as the management's administration, relations with suppliers and customers, reports and other specific accounting operations. Access to the application is organized hierarchically, on many levels, both within a company and across groups of companies.

The application interface is simple and intuitive, most operations having no need for a separate explanation. Forms and reports are specific to each mode or document, and where fields or buttons are not suggestive enough, there are further explanations (by positioning the mouse over the item) (Figure 3).

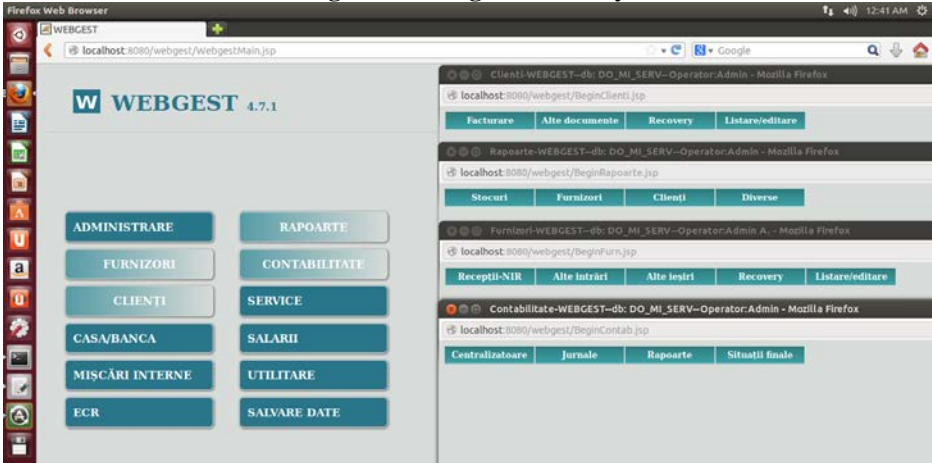**Figure 3: The interface of Webgest application**

Webgest belongs to the category of applications distributed on multiple levels, unlike other client-server applications. The main engine is not the database server whose role is indispensable, but the server application, the one who distributes information to users (are in fact simple web browsers).

The access to the application is made simultaneously by as many users in different locations via the Internet or intranet only. Access and data safety is secured, both by ordinary authentication and encryption of data transferred.

From the operative point of view, a user can do several things at the same time, without being forced to close a running task to gain access to another. For example, to generate a receipt or other document which may take a long time, does not preclude the ability to view a stock or other more urgent operations because each opens in a separate window (Figure 4).

Figure 4: Webgest efficiency

As regards the general control, it is accessible only by a user with full rights on the database server. It is called "super administrator" and can make anything externally, but does not operate. There is also an "general administrator" who has access to one or several companies within a group. May be even more of the same group of companies. An operator has access to a single firm under certain restrictions established by the Superintendent. However, some operators may give administrator the right to have access to any operation on a company.

5. Conclusions

SMEs are an important element of economic growth both in Romania and other EU countries. Unfortunately, the most important problem for the creation, advancement and sustainability of SMEs is the access to finance. Given that the main problem that currently faces almost any micro, small or medium is the shortage of resources, the priority becomes finding a solution to reduce their consumption in order to ensure sustainable development of the entity. Precisely for this reason, this paper offers a solution for SMEs, to reduce the consumption of material and financial resources and to reduce the time and effort invested by employees in financial accounting of a company.

It has been proven that the use of open-source computer applications packages, especially for accounting, does nothing but contribute to the saving of time and resources, reducing the total costs of a company, motivating employees, by facilitating their work and ensuring clean, orderly, updated and accurate records.

Open source products have known a broad development and diversification in recent years, standing out in the accounting field, where their characteristic traits is trying to simplify and streamline the practice field, in desire to reduce resource consumption.

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