

Opensource Alternatives in Ecommerce Activities

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Abstract: Using the Internet as a tool for promotion and sale of actual products implies a website - network card in the world. Who, today, has almost no site, and who has a poorly developed site, is likely to spoil their image to the target audience. Currently no company, whether it is serious (stronger) or not (less important), whether operating in the U.S. or Romania, can not afford to ignore the power of the Internet and to remain outside the network. A website can be used to obtain information about the company for those who are involved and to obtain information from potential markets (customers, competitors, suppliers, etc..) but, especially, can promote the company image or products. Having a website is necessary to complement other promotional activities of the company, but especially not to risk losing customers to its competitors. Current economic climate and those who operate commercial success in online environment, lead more and more entrepreneurs to develop businesses in this area. Commercial alternatives are costly and require industry efforts to be implemented and used, for this reason we considered that the analysis of the OpenSource alternatives in the electronic commerce is timely. In this analysis we present the main existing alternatives in electronic commerce field with hardware and software needs. So I watched the main objective commissioning of a functional virtual store that has all the tools necessary to develop such a business without considerable financial efforts.

Keywords: commerce, opensource, hardware, software

Introduction

To implement an electronic commerce site requires a number of decisions about what is intended by this implementation. For example, one should make an estimate of sales volume to be made by it done on a budget cost of implementation and use etc.

1. The Available Alternatives

Depending on your budget, forecasts turnover of profit estimates and other similar factors, have taken a decision on the solution to be implemented. In this sense there are three alternatives, namely:

- **Commercial solution** - purchase a software platform to manage online store - this way is budgeting for acquisition costs, but also provides guarantees on the use of the platform (security, technical support, etc.)
- **Solution Open Source** - Open Source community provides free e-commerce applications and also provides solutions that can adapt to their needs because the application is open source;
- **Own solution** - requires in-house development of e-commerce applications - requires additional financial and human effort, but customization can benefit the user.

Given the financial nature of the solutions available and the current economic situation for the beginning, we recommend an open source solution that has the price advantage and opportunities change. In this sense one can choose among one of the platforms listed below:

- **Magento** - www.magentocommerce.com - distributor statistics show that over 30,000 online shops using this platform and together have a turnover exceeding 25 billion USD. Is regarded as the fastest growing platform and is used by companies such as Samsung, Nespresso or Noprth The Face. Available in two versions: Enterprise and Community. Enterprise version includes powerful marketing tools that help increase sales, gift card management, management of multiple stores, etc.. Community version is for developers and no guarantees or support.

- osCommerce - www.oscommerce.com - is a simple, efficient and speedy implementation, configuration and management of a shop. It is used by over 220,000 merchants and has nearly six thousand tools and add-ons sites. It is considered the best free and open source platform.
- Zen Cart - www.zen-cart.com - is another easy and free solution that offers almost everything a trader wants. In addition to minimum requirements of such applications, offering manager for advertising correspondence, management of discount coupons, gift certificates and selectable types of cards accepted. There are many add-ons available sites, but the management component is a bit difficult to use.
- X-Cart - [www.tripwiremagazine.com / go / x-cart.html](http://www.tripwiremagazine.com/go/x-cart.html) - although this is an open source application this platform was sold at a price of 115 USD reason becomes unattractive for startuper-s. Instead, users enjoy professional support from both the manufacturer and the community. Is a fast, in accordance with W3C and oriented search engine optimization - an advantage in promoting shop. Technical support is a fee and has many customization options.
- CubeCart - www.cubecart.com - have multiple editions with prices ranging from 0 to 110 GBP. Free version has three design themes, historical controls, monetary support, search and provides an unlimited number of products sold. Commercial versions provide facilities SEO (Search Engine Optimization), delivery tracking tools, improved search engine and backoffice tools.
- VirtueMart - virtuemart.net - is an extension of the CMS (Content Managemet System) Joomla [1], ie can not be installed as a stand alone application. Is directed to the buyer, giving it more features than store manager. Supports multilingualism and has currency converter - ideal tools for those wishing to expand business abroad. Products can be rated by users and they can leave reviews on products purchased on site. Has the disadvantage of small errors in code that can be resolved by updating or proper effort.
- Ubecart - www.ubercart.org - this product is also an extension of an CMS in this case Drupal [2]. It is a specialized application for the sale of files (music, movie, book, etc..), registration at events and ticket sales. Payment has many tools, add-ons sites and design themes. For administrators Drupal CMS e-commerce platform it is easy to use, but is complicated to be administrated.
- PrestaShop - www.prestashop.com - this solution is used by approximately 25 000 of traders, even though it was launched only in 2007. Has the tools to customize design and offers a range of facilities such as free shipping, product image zoom, tracking shipments or online billing. It is one of the most attractive in terms of design and support exists from the community online. The weak point is its work speed - hard work, especially in the administration area.
- LiteCommerce - www.litecommerce.com - is a commercial solution in the sense that it isn't distributed for free. Instead it is very easy to manage because of the wizard tools. It is very simple to install and administer so easy. Interface or the shop can be edited by applications such as Dreamweaver.
- Spree - spreecommerce.com - is an application based on Ruby on Rails platform [3]. Has many extensions that help in configuring store by their requirements. Allows management of freight rates, the discounts or gift coupons. It has focused SEO and traffic analysis modules based on Google Analytics [4]. It is not recommended because small businesses cope with large volumes of traffic.
- Avactis - www.avactis.com - is available for free, but a monthly fee of about 20 USD or 200 USD for full version. Provides manual, video tutorials and wizards even to the free version. Includes a number of tools for advertising letters, marketing and sales reports that can be exported to Excel, supot international tax systems. If not possible hosting partner services or want support Service, update or installation, the manufacturer provides for a fee.
- AgoraCart - www.agoracart.com - is one of the most popular platform that is flexible and fully customizable. Has built design themes, and can design the structure and types of exposure to products according to their needs.
- WordPress e-Commerce Plugin [5] - any site based on CMS WordPress can include an online store by installing this plugin. It is one of the most popular plugins available, being downloaded by over 500 million users. Implementation of this offers almost all that is needed

for an online store. Provides integration with PayPal payment services [6] and Google Checkout [7].

- OXIDE eShop - www.oxid-esales.com - is a commercial solution available and useful open source software for developers. Free versions do not provide guarantees or use all the features in commercial versions, such as engine optimization.
- Digistore - www.digistore.co.nz - is a derivative of osCommerce platform, easy to install and configure. Has many design themes, allows creating own themes.

2. The Hardware and Software Infrastructure

Another important aspect in implementing e-commerce solution is hardware. This should be the best solution found in terms of performance and price. Performance should be adapted to forecast traffic and store size so that equipment can handle a given volume of simultaneous requests. Databases used to face a popular level data that meets the requirements projected (estimated number of products, number of customers waiting, number of visitors etc).

Of course the decision about selection should be regarded aspects of software facilities that will be carried out such that operating system and other applications should "enjoy" the chosen hardware.

Hardware required for a electronic store is a relative matter because it may be a typical PC or a new generation - very expensive and also powerful. For those who do not have a computer system which dedicate to an electronic store, there are variants of hosting, and many of them free. By hosting the call in a provider of such services, which provides storage space to store website and database to its operation.

Free hosting services have some disadvantages in the operation site, meaning that customers requires should be subject to rules less commercially affordable. For example, not allowing a domain name or require its own display banners etc. Fee hosting services are more permissive and facilities according to the tariff increases.

In general, hosting services have some limitations in terms of size and site generated traffic, but provides availability 24/24 and security in terms of access to servers.

For version with your own hosting server should be a decision on its acquisition. As we saw above, the decision must weigh performance and price. For example, an online store which is not expected to scale development in the near future hardware may be modest, but without notable performances that meet certain minimum requirements.

Communications equipment is of particular concern as liaison between clients and server. Through their Internet connection is made and also should provide sufficient stability and flexibility so that supply can be transferred data flow continues regardless of the number of requests.

Internet connection is one of the operating costs of the shop and via a web service provider, called ISP - Internet Service Provider. Under a service contract concluded with the Internet provider to establish clear requirements like, connection speed, pricing, etc..

Connection speed - is measured in bits per second or multiples thereof, and the quantity of data transmitted per second. In the event that use technologies such as asynchronous lines (ADSL - Asymmetric Digital Subscriber Line) offering different speed in direction of download from the upload should be noted that these services are designed to facilitate surfing the Internet, that provides download speed and low speed for uploading.

To meet customer requests a server these speeds must be reversed in that the download speed (corresponding to customer requests) may be less than the speed for uploading (appropriate responses to requests). This can be requested and provided services provider in the contract.

Moreover, one Internet connection speed should be sized so that it can handle the volume of data expected (data volume is directly proportional to the estimated number of simultaneous users).

Network equipment used must be sized to meet the needs of traffic expected.

Software component contains all the applications used for the operation of an electronic store. Thus, the minimum required software is limited to:

- Operating System
- Server applications
- E-commerce application

Software is recommended to be fitted with other additional applications such as antivirus application, system access security (firewall), etc. Data backup system.

Operating system software is most important in the functioning of electronic computing. The operating system is a set of programs to ensure optimum utilization of physical and logical resources of a computer system. It is designed to manage the operation of computer system hardware, coordinate and control the execution of programs and to allow communication with the computer user. Using the hardware of a computing system would be difficult and inefficient without an operating system. Operating system software component that coordinates and oversees all activities of computer system and ensures the communication with the computer users and should be able to achieve an interface between the computer itself and use these interpret user requirements, expressed in language command, executing these requirements by machine instructions.

A powerful operating system should have the following attributes:

- *Response time*: time interval defined expresses a call to service and system response to this request.
- *simultaneous use*: the degree in which one system can work simultaneously for multiple users or multiple jobs be running for the same user.
- *utility*: should satisfy all user requirements providing easy interface to application programs.
- *generality*: they can respond correctly to all requirements and thus allow solving various problems as the user.
- *efficiency*: should ensure optimum utilization of physical and logical resources of the computer system.
- *transparency and visibility*: the ability to allow users to get some information about how the system operates, additional information may result in better use.
- *flexibility*: the possibility of modifying the operating system depending on user requirements.
- *opacity*: in terms of the user should only need to have knowledge of level of interface, without needing to enter the lower structures, which the user is the "black box" of the operating system.
- *security*: the operating system must be protected against intentional or unintentional destruction attempts by user programs.
- *integrity*: the operating system with applications designed for it must be able to communicate with other operating systems or programs designed in the other OS. This quality is actually put into value when working in computer networks.
- *capacity*: the ability of the operating system facilities necessary to supply some, but which can not be physically due to hardware restrictions.
- *reliability and availability*: operating system's ability to remain very rare in black-to isolate any errors that may appear to continue under capacity and low efficiency.
- *servicing*: operating system possibility provide the user with information necessary for debugging programs as soon as possible.

- *extensibility*: adding new facilities to keep up with user requirements.
- *interoperability*: the operating system must allow access to data structures that were built under a different operating system. To enable integration and interoperability have been defined international standards specifications operating system.

To be accepted by the user, an operating system must meet the following conditions:

- easy to use;
- should require minimal hardware resources;
- to have a large number of applications that run under that operating system;
- have a purchase and maintenance cost as low as possible.

PC hardware platforms are two trends for use of operating systems:

- Windows systems
- Linux systems

These two platforms have a number of advantages and disadvantages

- Windows - very popular operating system used by most home users and business. It is not very friendly with Internet applications and presents a major drawback related to security - there are viruses on Windows platforms. Another drawback of this platform is the price - licensing Windows operating systems for use leading to increased implementation costs. The license of Windows Server version can reach prices an operating system of thousands of dollars [8].
- Linux - the kernel name for those operating systems which are called distributions. A Linux distribution use Linux kernel and provides a suite of applications. Linux-based operating systems are protected from viruses simply because they can not run on these systems. In terms of security are better protected because of the way they are designed, which is why the majority on the Internet servers use this solution. Most Linux distributions are based on free, even in the server options. Exist on the Internet a site that explains understandable why Linux is better www.whyLinuxisbetter.net.

Given the advantages of Linux in the following I will make a brief overview of the main Linux distributions. Although there are hundreds of these kinds of distributions, I will summarize the most common, namely: Ubuntu, Fedora, OpenSuse, Debian, Mandriva, LinuxMint, PCLinuxOS, Slackware, Gentoo Linux, CentOS, FreeBSD. All these distributions are free and allows you to run servers required to implement shop. Among them we chose the first solution that Ubuntu Linux as it provides support and interface in Romanian and is one of the most popular and easy distribution.

Whichever solution on the operating system, server applications needed to implement the shop are:

- Web Server - provides customers pages of the site. Most applications require for online store to run PHP scripts;
- Database Server - manage databases of information to be found in the online store;
- Mail server - SMTP server is necessary only to provide virtual store application to send email messages to clients;
- FTP Server - files management allow remote _ - is a necessary application to manage online store;
- Ssh server - allow remote management of the operating system and all installed applications.

Given the statistics, the most widely used Web server on the internet is Apache. It is an open source HTTP server that has played an important role in developing the web, currently being used for more than half of Web pages [9].

Apache was the first viable alternative to the Netscape Communications Corporation, and rapidly evolved in functionality and performance as a competitive rival other Unix-based web servers.

Apache is developed by an open community of developers under the banner of the Apache Software Foundation. The application is available for a variety of operating systems including Unix, FreeBSD, Linux, Solaris, Novell NetWare, Mac OS X, Microsoft Windows and OS / 2.

The main competitor to Apache is Microsoft Internet Information Services (IIS), followed by Sun Java System Web Server of the company Sun Microsystems and many others, such as Zeus Web Server.

Given that most CMS applications, including online stores listed, use the MySQL database, we chose to use this type of server.

MySQL is a management system relational database produced by the Swedish company MySQL AB and released under the GNU General Public License. The most popular open source database management system currently being a key component of the LAMP stack (Linux, Apache, MySQL, PHP).

Although often used with PHP, MySQL can build applications in any major language. There are many schemes APIs available for MySQL that allow you to write applications in many programming languages to access MySQL database, such as: C, C ++, C #, Java, Perl, PHP, Python, FreeBasic, etc., Each using a specific type API. An ODBC interface called MyODBC allow other type programming languages that use this interface to interact with MySQL databases such as ASP or Visual Basic. In support of these programming languages, some companies produce components of type COM / COM + or. NET (for Windows) through which respetivele DBMS can use that language more easily than via ODBC. These components can be free (like MyVBQL) or commercial.

MySQL is an integrated component of LAMP and WAMP platforms (Linux / Windows-Apache-MySQL-PHP / Perl / Python). His popularity as a web application is closely linked to that of PHP which is often combined with MySQL and called the Dynamic Duo.

MySQL can be run on many existing software platforms: AIX, FreeBSD, GNU / Linux, Mac OS X, NetBSD, Solaris, SunOS, Windows 9x/NT/2000/XP/Vista.

3. osCommerce Application

osCommerce is an online application for e-commerce offering a wide range of tools and features for configuration and use. Application is available for free as open source under the GNU / GPL.

osCommerce was started 10 years ago and since then has been developed and promoted arriving today to be the most used free e-commerce solution.

Today, osCommerce has not remained just a tool for electronic commerce, it has evolved to allow the administrator to make known their store and products and customers to meet the their wishes.

The success of this solution is guaranteed by active community that develops and supports community of which members help each other and participate in solving all the problems reported.

Notice, as well as many other applications for electronic commerce offers a range of facilities such as:

- is compatible with all versions of PHP4 - gives independence from a particular server;
- has all the facilities needed for a online store;
- is Object Oriented Backend;
- is multilingual, including Romanian;
- installation procedure is easy and is done through the web browser;
- has facilities for setting up templates:
- has facilities for dynamic images;
- no limit to the number of products and product categories;
- offering support for both traditional products and software products - download;

- management area is secure;
- offering facilities direct contact with users (customers) via email and / or newsletters;
- have backup procedures and user performance;
- offering billing facilities;
- generate statistics for products and activities of customers;
- has facilities for converting currencies with automatic update of exchange rates;
- offering facilities for static and dynamic banners, is easy to use by clients: orders can be tracked, the customer can define the multiple shipping addresses, CART is permanently registered clients and temporary visitors, customers can achieve search for products, offering facilities for product reviews, secure transactions are SSL displays the most popular global products or categories;
- offering online payment facilities (paying cash, check etc..) and accept payments online through specialized payment processors (PayPal, 2Checkout, etc..)
- provide opportunities for monitoring the delivery;
- how to tailor fees to each state.

Conclusions

Because of his popularity, but also for facilities offered, we opted for this software solution. Server installation requirements are minimal web server with PHP and MySQL server v3 + v4 +.

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Supplementary recommended readings

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- <http://httpd.apache.org/docs/>
- <http://dev.mysql.com/doc/refman/5.5/en/index.html>
- <http://www.theoscommercestore.com/osCommerce-user-manual.htm>