TÉCNICA DEL NORTE UNIVERSITY

FACULTY OF ENGINEERING IN APPLIED SCIENCES

CAREER OF ENGINEERING IN COMPUTATIONAL SYSTEMS

GRADE WORK PRIOR TO OBTAINING THE TITLE COMPUTER SYSTEMS

ENGINEER

SCIENTIFIC ARTICLE

THEME:

ANALYSIS AND SELECTION OF COMPONENTS FOR E-COMMERCE OF THE WORDPRESS PLATFORM FOR THE IMPLEMENTATION OF AN ONLINE STORE FOR THE SOFTWARE DEVELOPMENT AND DIGITAL MARKETING COMPANY "COOKIE DEVELOPMENT AND MARKETING"

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2017

ANALYSIS AND SELECTION OF COMPONENTS FOR E-COMMERCE OF THE WORDPRESS PLATFORM FOR THE IMPLEMENTATION OF AN ONLINE STORE FOR THE COMPANY'S SOFTWARE DEVELOPMENT AND DIGITAL MARKETING "COOKIE DEVELOPMENT AND MARKETING"

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Overview — The WordPress platform provides to web designers the necessary tool to create dynamic websites in a short time and with a minimum of effort, works based on small applications that are installed in the platform and that meet the needs of the site calls Plugins allowing the optimal application of e-commerce. Past: E-commerce allows the sale of products through the internet and with the exponential growth of users of electronic systems, this mode of commerce has become popular, revealing all its advantages compared to the traditional trade as its availability 24/7 this Has allowed organizations to maintain their business on the Internet without the need for physical infrastructure. Objective: Select the most appropriate e-commerce component for the CMS WordPress platform after analyzing the most popular components for the implementation of an online store for the software development and digital marketing company "Cookie Development and Marketing". Method: The agile XP development methodology is used to satisfy each of the requirements of e-commerce for the process of design and implementation of the online store, creating order management modules, products, among others. Results: According to the above mentioned, we obtain the implementation of an online store that allows the user a correct management of the orders received and the products offered among the most important. Conclusions: After analyzing the most popular components for the e-commerce application, it was determined that WooCommerce fulfills all the required functions.

Keywords — WordPress, e-commerce, WooCommerce, Plugins, JigoShop, MarketPress, Cart66.

Resumen — La plataforma WordPress provee a los diseñadores web la herramienta necesaria para la creación de sitios web dinámicos en un tiempo corto y con un mínimo de esfuerzo, trabaja en base de pequeñas aplicaciones que se instalan dentro de la plataforma y que satisfacen las necesidades del sitio llamadas plugins permitiendo así la óptima aplicación de e-commerce. Antecedentes: El e-commerce permite la compraventa de productos a través de internet y con el exponencial crecimiento de usuarios de sistemas electrónicos, esta modalidad de comercio se ha popularizado dando a conocer todas sus ventajas frente al comercio tradicional como su disponibilidad 24/7 esto ha permitido que las organizaciones mantengan su negocio en internet sin necesidad de disponer de infraestructura física. Objetivo: Seleccionar el componente más apropiado de e-commerce para la plataforma CMS WordPress tras analizar los componentes más populares, para la implementación de una tienda online para la empresa de desarrollo de software y marketing digital "Cookie Development and Marketing". Método: Para el proceso de diseño e implementación de la tienda online se utiliza la metodología de desarrollo ágil XP logrando así satisfacer cada uno de los requerimientos del e-commerce creando así los módulos de gestión de pedidos, productos, entre otros. Además, durante el proceso de investigación se aplica la norma ISO/IEC 25010 para el análisis comparativo entre cada plugin en base a métricas de cumplimiento para garantizar la calidad del software Resultados: De acuerdo a lo mencionado se obtiene la implementación de una tienda online que permite al usuario una correcta gestión de los pedidos recibidos y los productos ofertados entre los más importantes. Conclusiones: Tras el análisis de los componentes más populares para la aplicación de e-commerce se determinó que WooCommerce cumple con todas las funciones requeridas.

Palabras Claves — WordPress, e-commerce, WooCommerce, Plugins, JigoShop, MarketPress, Cart66

I. INTRODUCTION

With the emergence of the technological boom and the birth of the internet information exchange gave a very stride in the history of humanity, then anyone with access to the vast network of networks could know what was happening in any part of the world in real time, at the end of the 1990s, and with the growth of e-commerce on the internet exclusively devoted to this activity called eBay portals were created and Amazon as leaders in e-commerce today.

It wasn't until 1995 when the members of the G7 and G8 groups consolidated electronic commerce initiative of creating a global market for SMEs and thus increase the use of electronic commerce (E-Commerce) throughout the world [1].

With the growth of the virtual application, the emergence of social networks and the use of handheld electronic devices

like Smart phones, tablets and the emergence of web 2.0, and electronic money. SMEs have been implementing their sales systems to the development of e-commerce enabling them to carry out their trade activities without being in the presence your customers or much less than be in your same city, country or continent, through the use of their credit cards where the payment process is performed in real time, thanks to the use of payment gateways through different companies like Diners Club today provide transactions of electronic money and money transfers between bank accounts and others that make use of its own electronic currency as Paypal which allows its users to perform payments with greater ease and security providing the benefit of transfer to the bank account for his retirement by a credit card [2].

- *Content management systems*

They are CMS are systems installed on web servers that allow you to manage pages, blogs and content of articles online without need to have storage on desktop and perform its load every time is required to make changes. The CMS also allow different administrators and editors for the maintenance of online content without causing conflicts to the other [3].

The main characteristic of a content management system is the separate content from design. Where the pages are stored in templates and the content can be stored in separate files or database. Combined these two parts is a standard HTML page. This type of environment allows administrators to make modifications of the site by modifying the templates and without altering the content or your individual designs [4].

The features of the CMS tools, are usually used in blogs, where are assigned one or more categories depending on the type of content that has each publication, in such a way that a semantic access key can be offered to the content of each post [5].

The skeleton of the web site is comprised of 4 sections main created in separate files: index.php, header.php, sidebar.php and footer.php as shown in Figure 1; This structure can be modified by manipulating the code source, install themes and through the use of plugins to add features or for visual layout [6].
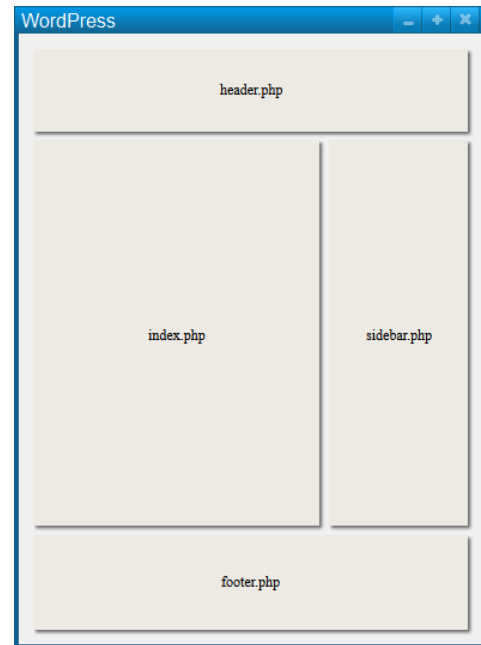

Figure 1. Typical structure of the WordPress template
Source: Own

- *Requirements*

- MySQL version 4.0 or higher
- PHP version 4.3 or higher
- FTP Account
- Apache Server
- CPanel (hosting accounts)

- *E-commerce (e-commerce)*

*"*E-commerce to the sale of products is considered through the internet. With the exponential growth of users of electronic systems, this form of trade has been popularized informing all their advantages over traditional commerce:
- Permanently available "24/7" 365 days a year.
- It has no geographical limitations.
- It enables the segmentation of clients.
- ·   Generates higher profits in unit costs.
- In the same way as any technology it has certain disadvantages.
- ·   Limited warranty provided to the customer by the seller.
- ·   The capacity of physical display of the requested product is not available.
- ·   Vulnerable to rogue computer" [7].

Figure 2. E-commerce around the world
Source: Cookie Development and Marketing

II. METHOD

A. A quality standard ISO/IEC 25010

Necessary to evaluate a software product based on the characteristics of quality, mainly used to measure the degree of satisfaction of the users, giving a value-added software. These requirements represented in quality model categorized the quality of the product features and subcaracteristicas [8].
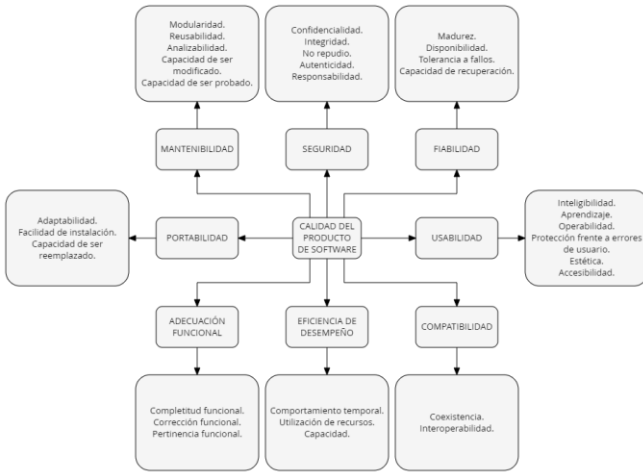
Graphic 1. The product quality of software according to the ISO/IEC 25010
Source: Portal ISO 25000

B. Definition of metrics for benchmarking

It defines a set of metrics to measure to estimate the degree in which each plugin complies with the characteristics of the standard 25010, these assessments are taken from the available documentation of the selected plugins.

Table 1. Definition of metrics for benchmarking

Compliance metrics					
Compliance		SI		NO	
Equivalent		1		0	
Metric for evaluation according to values					
Valuation		**Excellent**	**Very good**	**Well**	**Regular**	**Bad**
Range		5	4	3	2	1
Resources	# Extensions	1	2	3	4	5 +
Documentation	Quality - quantity	5	4	3	2	1
Errors in the code	Percentage	0%	1%	2%	5%	10% +
Weight of files	Peso en KB	1.000 -	3.000 -	8.000 -	11.000 -	14.000 0 -
Popularity WordPress	# Facilities enable (☆)	1+ million	100.000 +	9.000+	5000+	900+

Source: Own

C. Model of quality according to standard ISO/IEC 25010

The eight characteristics of the standard ISO/IEC 25010 can be taken as a starting point to get an analysis more specific plugins selected by determining several measurable attributes with an emphasis on the set of metrics defined in the table above, obtain the following result:

Table 2. Summary of the Benchmarking

FEATURES OF THE ISO/IEC STANDARD 25010	WooCommerce	JigoShop	Cart66	MarketPress
FUNCTIONAL ADEQUACY	17	16	16	11
PERFORMANCE EFFICIENCY	13	11	7	5
COMPATIBILITY	7	6	5	5
USABILITY	22	18	18	13
FIDELITY	6	4	2	3
SECURITY	6	5	5	5
MAINTAINABILITY	10	10	8	8
PORTABILITY	10	10	10	10
SUM / 96	91	80	71	60
TOTAL %	94%	83.33%	73.95%	62.5%

Source: Own

D. Comparative analysis of plugins on the market

This process of comparison of the e-commerce plugins is to assess the cost of extensions depending on each provider knowing that WooCommerce and JigoShop are distributed extensions batch while Cart66 and MarketPress do based on versions.

Table 3. Comparative of prices between the e-commerce plugins

Plugin	Price features	Annual cost 1 site
WooCommerce	Although most of its extensions are distributed for free, its distribution batch has a cost of $49 for a site, $79 for 5 sites and $149 for 25 sites per year with support and upgrades. Separately its value is scaled from $0 to $ 50 c/u..	It is not set
JigoShop	Similar to WooCommerce has free and paid extensions with a slight increase in its value ranging from $0 to $90 each.	It is not set
Cart66	The lite version is free, the PRO version has 2 plans: -Ember: at a cost of $ 9.99/month or $99/year -Fire: with a value of 29.99/month or 299 per year Both with two free months.	Ember: $99 Fire: $299
Marketpress	The lite version is free and Premium version has a value of $49/month.	$588

Source: Official sites of WooCommerce, Jigoshop, Cart66 and Marketpress.

E. Software implementation methodology

Agile XP development methodology is used for the implementation of the solution to the problem of research detailing each of its phases. According to the methodology applied the customer can interact with the application in each deliverable that receive for a further correction.

The main deliverables have the module catalogue and inventory (products) and sales process management and order management.
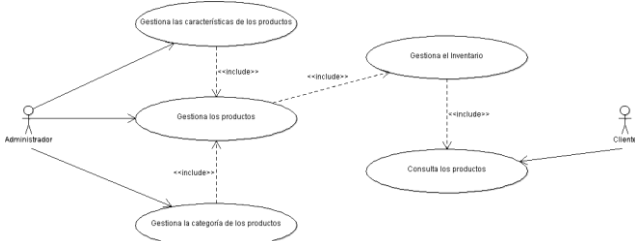

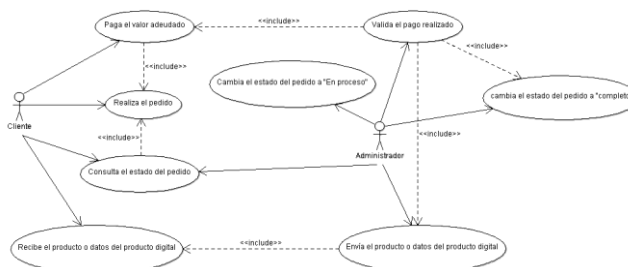*Figure 3. Catalogue and inventory management use case*
Source: Own

Figure 4. Use case sales and order management
Source: Own

The phase of delivery allows to know iterations to develop user stories.

Módulos	Nro	Historia de usuario	Fechas estimadas		Esfuerzo en desarrollo		Iteraciones			Entregas		
			Inicio	Fin	Días	Horas	1	2	3	1	2	3
Administración	1	(Gestión de catálogo e inventario) Administrador de tienda	10/1/2017	13/1/2017	4	32	x				x	
	2	(Venta y gestión de pedidos) Administrador de tienda	16/1/2017	20/1/2017	5	40		x				x
Cliente	1	(Compra de producto o servicio) Cliente	23/1/2017	27/1/2017	5	40		x				x

Figure 5. Plan deliveries online shop
Source: Own

During the testing phase is carried out a test for possible failures or lack of functionality defined in the user stories. This is to demonstrate that it meets the requirements of users interviewed for stories.

III. ANALYSIS OF RESULTS

- Through the application of the standard ISO/IEC 25010 determined that most suitable for the application of e-commerce in WordPress is WooCommerce.
- The application allows that customer related is better supply of the company having a catalog online products and services, without having to wait for an operator to respond to your requests.
- Settled benefits received by the company after the implementation of the online store.
- Created an online store for software development and digital marketing company "Cookie Development and Marketing" with domain www.cookiedam.com.

IV. CONCLUSIONS

- Popular plugins Group discussed to implement e-commerce in WordPress and WooCommerce was elected as the most appropriate to be used in the development and implementation of an online store and it was determined that WooCommerce satisfies all needs in a 94%.
- Comparison method was based on the costs in time and the General functionalities that each plugin e-commerce must also provide that established a comparison by applying the standard ISO/IEC 25010.
- Created an online store for software development and digital marketing company "Cookie Development and Marketing" with domain www.cookiedam.com.
- The implementation of the online shop allowed the company to report more broadly its catalogue of products and services through the internet, also achieved a better interaction of its customers, thanks to online chat embedded in the online store.

V. RECOMMENDATIONS

- It is recommended to be trained to the shop administrator user before beginning the process of inventory control and management of products or services.

- It is recommended to always have the user manual where necessary to make settings outside the store management process.
- In the development and implementation phase a backup plugin installation is recommended to maintain the integrity of the application in its first stage and to safeguard information in the stages of production.

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