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DEVELOPMENT OF THE E-COMMERCE SITE MEKSIKOLAINENKAUPPA
USING WORDPRESS CONTENT MANAGEMENT SYSTEM
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E-commerce is the process of selling and buying goods through the internet. Businesses have seen the benefits of using the internet to increment the number of customers and at the same time reduce their operations expenses. Therefore, IT companies are developing e-commerce platforms that can be used by any kind of business, from entrepreneurs to big companies. Content Management Systems are programs that allow the users create and update their websites without requiring strong programming skills. Some content management systems, such as WordPress, have increased their functionalities in order to allow their users create e-commerce site.

The aim of this thesis was to create the e-commerce site meksikolainenkauppa. Meksikolainenkauppa is an online store that will sell representative products of the Mexican culture in Finland. Thus, it was required to create a site which handles online payments and multilingual content. The thesis report includes the theoretical information about e-commerce, content management systems and it described the development process of the site.

The result of this thesis was a responsive e-commerce site. This website was able to handle online payments and change its content in two different languages: Finnish and English. Although the site was not tested in physical devices, it was tested through a website that simulates the screen of different devices.

Keywords: WordPress, E-commerce, Content Management System, Web shop Development
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1 INTRODUCTION

During my studies at Oulu University of Applied Sciences in the degree of Business Information Technology I took a class related to e-business. This course gave me the possibility to understand the importance for organizations to have their own website online. Also I got a general knowledge about the main elements of an e-commerce site and how they function.

Since I have thought always of being an entrepreneur, I considered that this thesis would be the perfect chance to start my own business. In addition, I could put in my practice the knowledge I have acquired from my studies.

I considered this thesis would be useful to all the students and small companies who would like to start their own online commerce, but they lack the technical expertise and the financial resources to do it. Therefore, I decided to write about the development process and the tools required to build an e-commerce site.

The thesis is divided in two parts, the theoretical section and the practical section. In the theoretical part there is information about what is e-commerce, what are content management systems and how they can be used as an e-commerce platform.

In the second part of the thesis, the focus is on the development of the site. It includes information about the tools that were used during the project and how the project was developed.
2 BACKGROUND THEORY

This chapter presents the theoretical background of e-commerce, what are the benefits of having an e-commerce website and the classification of e-commerce sites according to their target market. Also it contains information about e-commerce platforms

2.1 E-commerce

Before discussing about e-commerce, it is important to have a clear understanding of what the word “commerce” means. According to the website encyclopedia.com, commerce is defined as the exchange of the products through the actions of buying or selling (Encyclopedia.com, cited 14.05.2016). The process of commerce occurs when two entities are willing to do an exchange of products or services.

There are two types of commerce: domestic and foreign commerce. Domestic commerce takes places when the trade of products or services takes places inside the border of a country. For example, when a factory sells their products to a retailer that is located in the same city. On the other hand, foreign trade occurs when organizations that are located in different countries exchange products between each other. There are plenty of reasons why an organization decide to trade with an entity in another country, but the main reason is that they cannot find that article or service in their own country. For instance, due to climatic and geographical conditions, Finland is not able to grow certain fruits and vegetables. Thus, those products are imported from other places, like Brazil. (Chimoriya, cited 14.05.2016.)

In the past, the big corporations were the only ones available to do foreign commerce, because it required a considerable amount of economic resources. But with the emergence of the internet, nowadays it is possible for any small and medium company to start offering and selling their products to markets from around the world by having an online presence.

Briefly the term e-commerce, also known as electronic commerce, can be defined as the process of selling and buying goods through the internet (InvestorsWord, date of retrieval 14.05.2016). Although the main essence of e-commerce is to sell and buy products and services, there are other
activities involved that are necessary in order e-commerce can occur. Some of this business activities are the administration of the supply chain, market research, customer relationship, among others (Schneider 2007, 5).

2.2 E-commerce benefits

E-commerce offers many benefits to the owners of a business and to their consumers. From the consumer’s perspective, e-commerce allows the users to buy a product from the commodity of their home. This can save them the time it takes to go to the shop and pay for the product, which at the end they can utilized in another activity. Another benefit is the product availability. With the internet, the users can visit online shops from a business that is located in other countries, allowing them to buy products that they would not have access to otherwise (About.com, cited 14.05.2016.)

Not only the consumers are benefited from electronic commerce; businesses get benefited from e-commerce too. The main advantage is that it can increase sales. They are able to sell their products to a broader audience of customers that are located around the world. E-commerce allows the use of different payment methods, which permit people from different backgrounds to acquire the products offered in their online shops. (Schneider 2007, 17.)

Another important benefit of e-commerce is that it reduces the cost of a business. E-commerce permit businesses to operate with a little amount of economical and human resources. With a properly established e-commerce site, it is no longer necessary to have a physical store. This reduce the amount of economic resources needed to pay for fixed expenses, such as rent and electricity. (Schneider 2007, 17.)

As we can see there is a considerable amount of benefits that e-commerce brings to the consumers and owners of a business. These benefits motivate consumers to use more the internet as a platform to buy products; and the businesses to sell their products online.

2.3 E-commerce risks

Although there is a considerable amount of reasons to start implementing an e-commerce site, it is important to know the risks that the users can face. One of the main risk of e-commerce for
businesses is the information security (visually, cited 14.05.2016). Nowadays the amount of cyber-attacks has increased. During these attacks valuable information from customers can be stolen, such as credit card information. This, in turn, will affect the image of a business. Information Privacy is an issue that customers are considering while selecting what site they will shop in. Therefore, it is important to take into account certain security practices that will reduce the chance of been attacked. This can be achieved by updating the e-commerce platform to the latest version and by using third party software’s that will maintain safe the server where the e-commerce site is hosted.

Other risk that can occur to ecommerce sites is related to its technology (Visually, cited 14.05.2016). For example, there could be a problem in the server where the site is located. This will cause that the site will not be accessible to the clients anymore. In order to minimize this risk, it is recommendable to look for a reliable host provider who can guarantee that the website will be online most of the time.

2.4 E-commerce Categories

Depending on the type of entities that are involved during an e-commerce transaction, electronic commerce can be categorized in 5 groups:

Business to Consumers (B2C)

This is the e-commerce site most people are familiar with. In this categories the business sells their products to the individual consumers. An example of this category is the online shop Zalando. In this online shop Zalando displays products that the end consumers are interested in buying. (Schneider 2007, 5.)

Business to Business (B2B)

In this group, the business sells their products or services to another business. This kind of e-commerce site is not visited as often as the business to consumers site. Nonetheless, it is greater the quantity of products they sell per client. (Schneider 2007, 5.)
**Consumer to Business (C2B)**

In consumer to business sites, the consumers are the ones who offers a product or service to the business. This facilitate the process of businesses to find qualified workers for a specific project. (Moreno 2015, cited 15.05.2016.)

**Consumer to consumer (C2C)**

It is also possible that the consumers can sell and buy products among other consumers with the use of a third party platform. This is known as consumer to consumer. An example of consumer to consumer e-commerce site is eBay. This website allows users to post the products which they want to sell. This platform allows anybody able to sell their products without having to invest time and money in creating a web shop. (Schneider 2007, 7.)

**Business to Government (B2G)**

This category is used to represent all the transactions that occurs between the private business and the government. Lately the amount of governmental agencies that list in their websites the products and services they required have increased. This facilitate the process for private organizations to collaborate with the government. (Schneider 2007, 7.)

2.5 **E-commerce platforms**

IT companies have seen the necessity of the market of selling their products online, but they lack the expertise or the resources to create the system from the scratch. This pushed companies, like Magento, to create a platform that integrates the tools that are required to do e-commerce, such as: content management, marketing, pricing and promotion, order and inventory management. (Netsuite, cited 15.05.2016.)

Depending on the type of license they used to distribute their product, e-commerce platforms can be divided in the next groups:
Open Source e-commerce platform

Like any open source software, this type of platform can be used and modify without paying any monthly fee or license fee. This allows the users develop customized e-commerce sites, which they can be modified and updated according to the needs of the web shop.

On the other hands there are some disadvantage of using this kind of platforms. First of all, the user needs more technical know-how to implement it in the business. Although it is possible to find documentation on the internet that will teach how to use it, the user will need the help of a developer who understands the technologies used by the platform. Another disadvantage is the limited amount of features it offers. Although it contains the basic features to start a web shop, at some point it will require the functionalities of the paid version in order to improve the efficiency of the online store.

Open source e-commerce platforms are recommended for business who are starting to offer their products to the market and want to start selling their products online. On the contrary, if a company is already quite known by their target market, it is preferably to choose a platform that will be able to handle the demand of the customers.

Software as A Service e-commerce platform

Another way to implement an e-commerce site is by using Software as a Service e-commerce platforms. Software as a Service, known also by its acronym SAAS, is a new software business model. In this model the provider charges the user depending on the amount of time or the amount of features which are used. The program is distributed to the users through the internet, so they do not need to install any software on their own computers. There is a wide range of programs which are already being delivered using the Software as A Service model, including as an e-commerce platform. (Gartner, cited 15.05.2016.)

There are many advantages and disadvantages of using SAAS e-commerce platforms. This kind of platforms allows the user to create a high quality e-commerce site in a short amount of time and without the need of technical skills. Another advantage is that the software provider will take care that the web shop is secure and available online. Therefore, the user has more time to focus in the
core activities of their e-commerce site, such as handling orders and getting new customers. (Marsella 2015, cited 15.05.2016.)

Using this platform might not be for all businesses. There are some businesses that require a more complex e-commerce platform that can be integrated into their current system. This kind of platform is not flexible because it is not possible to access the source code. This limits the user in the creation of an e-commerce site according to the features that the SAAS software contains. Another aspect it is important to consider is the budget. Using this type of platforms requires the payment of a monthly fee, which it means it has a fixed cost that needs to be taken into account. At the end, this solution might be more expensive than using a commercial or open source e-commerce platform.

As it can be seen, this platform is not for all businesses. Although this platform is easy to develop and deploy, there are other aspects to consider before deciding to use SAAS e-commerce platforms.

**Commercial e-commerce platform**

Commercial e-commerce platform is the counterpart of the open source platform. It requires the payment of a license fee in order to install the program in a computer. This kind of platforms gives the possibility to use all the capabilities of the program. Another advantage of using this platform is that the software provider has a support service, which the user can contact any time there is an issue with the program. (Commerce Science, cited 15.05.2016.)
3 PAYMENT METHODS

The core activity of an e-commerce site is to generate sales. Therefore, accepting payments is one of the main aspects of an e-commerce site. Nowadays there is a wide range of payment methods that can be integrated in the site. This can be achieved by integrating a payment gateway to the e-commerce platform or to have a contract with a Payment Service Providers who handles the payments of the site.

3.1 Payment Gateway

A payment gateway is the service obtained from a third party that accepts debit and credit card payments (Webopedia cited 16.05.2016). This company receives the transaction request from the website and sends it to the payment processor. The payment processor are the companies that are in contact with the banks and who are in charge of verifying that the information the user give is correct and it has the necessary resources to cover the payment. If the information is valid, the payment will be accepted. Then the payment processor will send the status of the payment to the payment gateway, who sends the same status to the e-commerce website. (WildApricot, cited 16.05.2016.)

3.2 Payment Service Providers

The Payment Service Provider, also known as PSP, is an organization that offers a payment system which handles different kind of payment methods. Beside handling payments, they offer extra services related to fraud protection and currency exchange. In order to use their services, depending on the company, it is required to pay a monthly fee and a fee for every completed transaction. (2Checkout, date of retrieval 16.05.2016.)
3.3 **Checkout Payment Service Provider**

Checkout is a Finnish payment service provider for small and large e-commerce sites. Through the use of Checkout service, it is possible to accept payments from the most known banks in Finland such as Nordea, Osuus bank, Danske Bank, Pop bank, Nooa, Aktia, Säästöpanki, etc.

This payment service provider offers three different packages to their customers. The basic package, named as “Starter package”, is free for use. Nonetheless it is needed to pay .50 euros per transaction and a commission of 2% the value of the merchandise. This package is suitable for new e-commerce sites who do not have a regular amount of sales. In case there are already regular customers to the site, then it is recommendable to choose the “bank package” or the “wide package”. In both packages, a monthly payment is required and has a .35 euros’ fee per transaction. In these packages the transaction fee is lower and also it charges a smaller percentage of commission. (Checkout, cited 16.05.2016.)
4 WORDPRESS

A content management system (CMS), also known as web management system, is a web based program that is used to create websites that are easy to update. This program separates the structure of the website and its content. Therefore, the information of the site can be changed easily through the user interface of the program without technical knowledge. (Beal 2016, cited 20.05.2016.)

Most of content management systems are made of two components, the content management application (CMA) and the content delivery application (CDA). The content management application function is to allow the user to create, change and remove the content of the site. On the other hand, the content delivery application is in charge of rendering the website with the content introduced by the user. (Rouse 2010a, cited 20.05.2016.)

There are many advantages of using content management systems. First, it facilitates the process of creating a website. Before CMS existed, only the persons who had knowledge about markup languages like HTML were the only ones able to create a website. Nonetheless, now it is possible to create a web page without that knowledge, meaning more people are able to make their site by themselves. Another advantage of CMS is that they are easy to update. By accessing the dashboard of the CMS it is possible to make the necessary changes without having to wait the IT department to do it. This allows the IT department to focus on their main activities while the business department is able to make updates to the site when they require it. Also it improves the Search Engine Optimization of the site. Search engines give priority to the pages that are updated constantly (Ray 2012, cited 20.05.2016).

Most of the Content Management Systems that are available at the moment are open source. So they can be downloaded and used for free. This increment the amount of users who chose these CMS to develop their sites.
WordPress is one of the most popular open source Content Management System. According to the World Wide Web Technology survey (W3Techs) the most used content management system is WordPress, which is implemented in 59.64% of the websites who are built with a CMS (W3Techs, cited 20.05.2016).

In order to use WordPress, first of all it is required a web host that covers the minimum requirements, such as PHP version 5.6 and MYSQL version 5.6 (Wordpress.org 2015a, cited 22.05.2016). Due to its popularity, it is possible to install WordPress in most of web hosting servers.

There is also another service called wordpress.com, which let the users create a blog or a website in a short period of time. With this service, it is not required to have a webhost since the blog is hosted by WordPress. The limitation of this service is that it is not possible to install plugins and it is just possible to choose one theme. Therefore, if more control over the design and functionality of the site is required, it is recommendable to download the program from wordpress.org and get a webhost. (Leary 2013, 1.)

4.1 WordPress themes

According to the site wordpress.org a theme is a group of files that are used to create the visual design of the website. The goal of the themes is to change the appearance without changing the content and the functionalities of the site. WordPress themes are composed mainly of PHP files and CSS files. The PHP files contain the structure of the site, while the CSS files contains the rules that are used to modify the presentation of the site. (Wordpress.org 2015b, cited 24.05.2016.)

WordPress offers a wide range of themes that have been developed by its community. Most of them are free to use. These themes can be installed through the WordPress dashboard or through the Cpanel of the website. It is possible for the users to develop their own themes as well in case they are not able to find a theme appropriate to their site.
4.2 WordPress plugins

A plugin is a program that is installed in WordPress in order to add more functionalities to the site. It can help the users create a slider or even transform their website into an e-commerce site without needing to code it. The programming language used to create a WordPress plugin is PHP, but other languages, like JavaScript, can be used to create more complex plugins. (Wordpress.org 2015c, cited 24.05.2016.)

WordPress includes two plugins that are already installed, but it is possible to add more plugins that are developed by the WordPress community. In case the users have previous experience of PHP language, they can develop their own plugins as well. The plugins can be easily install or remove through the dashboard. It is also possible to do it manually by using an FTP client software.

Plugins can be deactivated or deleted. It is important to know the difference between these two options. When a plugin is deactivated it means that it is not available to the user, but the plugin is installed on the website. On the other hand, in order to completely remove the plugin from the site, then it needs to be deleted. (WPBeginner 2016b, cited 24.05.2016.)

4.3 E-commerce plugins

Although WordPress has been used only for blogging purposes, currently is possible to use WordPress as an e-commerce platform. This can be done by adding plugins that extends the functionality of the website. At the moment there are many plugins that can be used to create an e-commerce site. Nonetheless, the most installed e-commerce plugins are “WooCommerce” and “wp-ecommerce”.

Wp-ecommerce is the plugin that transforms a WordPress site into an e-commerce platform. This plugin allows the users to sell physical and digital products, manage orders, add products and handle payments. It can be download for free from the WordPress dashboard or through the WordPress site. Although the plugin can be used for free, there are some functionalities that requires the user to pay so they are available.
The e-commerce plugin chosen for the meksikolainenkauppa was “wp-ecommerce”. Although “WooCommerce” and “wp-ecommerce” plugins were supported by the Checkout Payment System Provider, at the end “wp-ecommerce” plugin was chosen. This plugin was selected because it could be integrated to the site without having to purchase an extra plugin. Although the alternative provided by “WooCommerce” was easier and faster to implement, “wp-ecommerce” was chosen due to economic constraints of the project.

4.4 Multilingual content plugin

The internet is a place where people from all the world communicate with each other. It gives the users the possibility to share content with anybody who has access to the internet. Despite of the fact that the English language has become the standard language for internet websites, it is better to communicate with the customers in their own language. Therefore, it is a more common practice to have multilingual websites.

For the meksikolainenkauppa project, the target market was the Finnish population. Thus, the website should be available in English and in Finnish. This was achieved by implementing the plugin Weglot to the e-commerce site.

Weglot is a software as a service (SAAS) company that translate websites into multiple languages. In order to make more accurate translations, the user can personalize the translation of the site through the online service. As a SAAS solution, it charges a monthly fee depending on the service that the user used from their software. Also it offers a free plan that let the users try their service before using their paid version. (Weglot, cited 24.05.2016.)

There are two ways to integrate Weglot to the user’s website. The first way is done by copying a JavaScript code that can be obtained from the Weglot website and include it before the body closing tag of the user's website. The second way of incorporating Weglot in the user's website is by installing their WordPress plugin. This plugin provides a simpler way to integrate Weglot without having to modify the HTML file of the site. (Weglot, cited 24.05.2016.)
5 MEKSIKOLAINENKAUPPA PROJECT

This chapter will be used to describe the origins of the meksikolainenkauppa and what were the requirements at the initial stage of the development process.

5.1 About Meksiolainenkauppa

Meksiolainenkauppa is the name of the e-commerce that will sell Mexican art crafts in Oulu and Finland. The idea of this site started on December of 2015, after a student from Oulu University of Applied Sciences realized that a considerable amount of persons from Finland were interested in the Mexican culture and they appreciate the typical products that represents this culture. Nonetheless, it is hard for Finnish people to have access to these kind of products due to the elevated prices of traveling to Mexico. Therefore, it was thought that it would be a good idea to create an online shop where they can have access to these products without having to travel to Mexico in order to get them.

Another reason for creating this site was because this student has always considered the option of becoming an entrepreneur at some point of his life. Therefore, he considered that this could be the perfect opportunity to improve his technical skills as a WordPress developer and at the same time start his own business.

The meksikolainenkauppa will sell some of the most representative products of the Mexican culture. Mexico has wide range of products that are appreciated by the international market due to their colorful and exotic design. Although Mexico is most famous for its cuisine, there are products, like black clay, that are appreciate in other countries. The goal of the meksikolainenkauppa is to bring high quality traditional products from Mexico that can be used as gifts or to decorate the houses of people in Finland.

Although meksikolainenkauppa is not an official company yet, it is intended to become a registered company in the future. There are still legal and administration aspects that needs to be addressed in order to establish the company in Finland. Nonetheless the result of this thesis will be used as the foundation of the meksikolainenkauppa company.
5.2 Meksikolainenkauppa requirements

As in any IT project, one of the main aspects that needs to be defined before starting developing the project is to establish the requirements. Without having clear requirements of the project, it is not possible to know what is needed to be completed. The requirements can be classified in two categories: the requirements related to the design of the site and the requirements related to the functionality of the site.

In the first category, the meksikolainenkauppa needs a site with a clear and simple layout. Another requirement for the design is to have a menu in the header of the site where the categories of the products will be displayed. Therefore, the user is able to navigate easily through the site and find the products they are looking for. In every page where the products are displayed, the picture of the product should be present showing the information of the product and its price. Beside it, there should be a button that will let the users add products to their shopping cart. The shopping cart must be present in all pages, except in the homepage. A customer service page and the checkout page are also needed. The website should be compatible with all browsers and it should have a responsive layout.

Regarding the functionality of the site, the meksikolainenkauppa needs a page where the customers can send a message in case they have any question related to the store or their order. In addition, the site must contain a shopping cart where the customers can add and remove the products they are buying. Another important requirement of the meksikolainenkauppa is to accept online payments. Since the site is focused on the Finnish market, it is recommendable to integrate a payment service provider that handles payments with Finnish banks like Nordea or OsuusPankki.

Another important requirement of the meksikolainenkauppa is to include the option of having the website in 2 different languages Finnish and English. Although the official languages of Finland are Finnish and Swedish, most of the Finnish population have better English skills. Also the minorities that live in Finland who do not speak Finnish have been taken into account. Therefore, the site must contain a button in the header which will let the user change the language of the site from English to Finnish.
6 DEVELOPMENT TOOLS

The purpose of this chapter is to introduce the tools that were used to develop the meksikolainenkauppa site. It is important to have a basic understanding of these tools because they will allow you to understand better the development process.

6.1 Text editor

The text editor is one of the main development tools of all programmers. It is a lightweight program that allows the user to open, view and edit all kinds of files. This type of program is totally different from the word processors that we are familiarized with, like “Word Office” from Microsoft and “Pages” from Mac. which are used to give format to a text document. The goal of text editor is to write simple text files. (text editor.org, cited 17.05.2016.)

There are many text editors that are used specially for viewing and editing the source code of a program. The source code are the instructions of a program written in a specific programming language.

Thanks to the features that provided the text editors, it is possible to read and write source code in a more efficient way. Most of text editor add a number in each row of the file so the programmer is able to navigate through the code. In addition, it highlights the core terms of the programming language so it is easier to visualize the structure of the code.

There are available commercial and open source text editor. Even though it is better to get the commercial text editor due to the additional features it offers, at the end any text editor can be used to complete a web development project.

Although inside WordPress dashboard there is already a section where you can edit the source code of the site, it does not offer any of the capabilities of a text editor. That is why it is suggested to have installed a text editor which will speed the development process of the site.
6.2 File transfer protocol client software

File Transfer Protocol, shortly known as FTP, is the protocol that the internet uses to upload and download files (DomainIt, cited 15.05.2016). A protocol is group of rules that enables two computers to communicate between each other (Encyclopedia Britannica, cited 15.05.2016). It is possible to generate this communication through the browser or by using a software that is specialized for this purpose. This program is known as FTP client.

The benefit of using an FTP client software is that it provides a visual interface that facilitates the process of connecting and accessing the files that are located in the server. In order to connect to the server, it is required the address where the file is located, the username and the password that is needed to access the web host account. After the connection has been established, it is possible to navigate through the content of the site and modify it.

6.3 Cpanel

Cpanel, which is also known as control panel or dashboard, is the program that allow the users manage their web hosting settings (WPBeginner 2016a, cited 15.05.2016). This program has a clear graphic interface which helps all kind of persons, from novice to experts, to settle the main options of their site. This is the place where the users manage the domain name of the site, setup SSL certificates, create the database for WordPress, among others.

6.4 Google Chrome Development Tools

Nowadays it is possible to use your internet browser for developing purposes as well. Some of the most popular browsers, like Google Chrome, have included tools that allows the programmers to inspect and debug the code of their website.

These tools let the coders inspect the structure of the website in a more efficient way and check their current values. For instance, if the developer wants to know the current values of an element in the website, he just needs to right click over the element and select inspect. This will open a
pane in the left side of the browser that will display the CSS values of that element. In case the developer would like to test new values on that element, it is possible to do it as well. This reduces the amount of time it is required to identify the elements that conforms a webpage.
7 SETTING UP MEKSIKOLAINENKAUPPA PROJECT

7.1 Domain name

The domain name is a group of characters or words which identifies a website inside the internet. It is easier for humans to remember a sequence of words which has a meaning, rather a sequence of numbers; that was the reason Domain Names were created. (Rouse 2010b, cited 08.05.2016.)

From a business perspective, the Domain name can be considered as the digital business card. It is the name that the users will be using when they are looking for a specific website. When choosing a domain name, it is important to keep in mind to use a short name that describes the product or service that is being provided to the customer. This way it will help the user to remember your site. Also it will increment the visibility of the website in the internet since more users will be available to find it. (Reynolds 2004, 44.)

The process of getting a domain is not complicated. The user needs to find out a website company that is registered with the Internet Corporation for Assigned Names and Numbers (ICANN). The ICANN is a nonprofit organization that control and updates the databases that contains the registered domain names and the information of the owner of that specific domain (Icann.org, cited 08.05.2016). Then the user needs to select an available domain for the website. Finally, the user need to give the contact information and pay for the domain name. The obtained domain name can be used with any hosting service. But in order to make the process easier, it is recommended that the user acquires the domain name from the same company that provides the web hosting service.

In most cases it is possible to get a domain name with any termination, for example .com, .net, .org, etc. But for certain domain names, like the domains with the termination .fi, can only be registered with specific organizations. They are the only ones authorized to provide the users with that specific domain name. In order to obtain a domain name with the termination .fi, it is needed to register the domain name with the Finnish Commission Regulatory Authority (FICORA). This
domain name can be only obtained if you the user is a Finnish citizen and have a permanent address in Finland. (fi-domain, cited 08.05.2016)

Since the main target of the web shop was the Finnish market, it was decided to use a domain and a company name which it would be easy to remember and identify by the Finnish population. Therefore, the domain name was written in Finnish. The name consisted of two words that would let the clients instantly know what the purpose of the site was, which were “Mexican” and “shop”.

For the meksikolainenkauppa web shop it was intended to use the domain name “mekzikolainenkauppa.fi”. But it was not possible to register this domain because the requirements from FICORE were not fulfilled. Thus, it was decided to use instead the domain name “mekzikolainenkauppa.com”. This name will be used temporarily until it is possible to fulfill the requirements to obtain the meksikolainenkauppa.fi domain name.

7.2 Hosting service providers

After selecting the name of your domain. It is the moment to choose a company that will make the website available online. The companies that offers that service are known as hosting service providers. The hosting companies used specialized computers known as servers, which are connected to the internet. In order to use their service, you required to have a domain name, which they will provide in case it has not been acquired yet.

Depending on the amount of capacity and features available from the server, there are four types of hosting plans. The most basic option is known as shared hosting. It is the cheapest one since the website share the same server with other websites. Therefore, the performance and security of the site can be affected by the other websites located in the server.

The second type of web hosting plan is known as dedicated server. When using a dedicated server, the user is able to use the whole server for the site. This way the server can be configured according to the needs of the project. Due to its price, it is recommended for websites that have a considerable amount of online traffic.
There is another hosting plan that combines the characteristics of the dedicated servers and shared hosting. This service is known as virtual private server. The server is divided in virtual servers where each user can configure it according to their needs the same way as if they were using a dedicated server. This gives the users more control over the server, but the performance of their site might be affected by the other virtual servers.

Cloud hosting is the last type of hosting service. This is a new service that consist of a group of server connected together in order to handle high amount of traffic. Depending on the usage of this service will dictate the amount of money it is required to pay.

Since it is the first time the meksikolainenkauppa website will be online. It is expected to have a low amount of traffic. Therefore, the most suitable hosting service is a shared host.

7.3 Secure socket layer certificate

Since e-commerce sites handle sensitive information of the clients, such as the client's personal information and credit card numbers, it is important to provide a safe environment where their data stays confidential. One way of offering a protection layer to an e-commerce site is by installing a Secure Socket Layer (SSL) certificate in the server where the e-commerce site is located. An SSL certificate is a digital document issued by Certificate Authority. This certificate contains the information of the organization who was provided the SSL certificate, the authority who issued the certificate, the expiration date of the certificate and a cryptographic key. This key is used for encrypting the information that is transmitted between the certified site and the client's browser key. (GoDaddy, cited 21.05.2016.)

Including an SSL certificate in the website provides benefits that are worth to take into account. The main benefit is that it secures the information that is sent and received from the e-commerce site and the client browser. This increases the amount of users willing to buy products from the site. (SSLShopper, date of retrieval 21.05.2016). In addition, it improves the research ranking of the site. Search engines, like Google, are intending to make the internet a safe place for the users; therefore, they are giving priority to the sites that include a digital certificate (Illyes 2014, cited 21.05.2016).
On the other hand, there are some disadvantages of using SSL certificates. First, having a SSL certificate creates an additional cost to e-commerce sites. Also including an SSL certificate might affect the performance of the site. Since the information that is sent from the server to the client browser needs to be encrypted first, it takes more resources from the server. (SSLShopper, cited 21.05.2016). Although there are more advantages than disadvantages, is important to have knowledge of them before deciding to integrate an SSL certificate to an e-commerce site.

There are different ways to install the SSL certificate in the host server. Some hosting service providers can install the SSL certificate in the user hosting account. It is also possible to install the SSL certificate through the Cpanel of the hosting account. Some hosting service providers, like nameCheap, include a plugin in their Cpanel, which facilitate the installation process of the SSL certificate.

Another way of installing the SSL certificate is done by using the tool SSL/TLS Manager of the Cpanel (see figure 1). In this case, the user needs to generate a private key from the Cpanel. Then it is required to create a Certificate Signing Request. The Certificate Signing Request is a text file that contains the private key that was generated and the contact details of the e-commerce site, such as the domain name, the official name of the organization, the organization's address, among others. This Certificate Signing Request is sent to the Certified Authority, which provides the user a certificate code by email. This code is introduced in the option Manage SSL sites and the certificate is activated. (Namecheap, cited 21.05.2016.)
Installing WordPress is well known for its 5 minutes installation process. The first step is to create a database where all the data from WordPress will be stored. This can be done by accessing the Cpanel of the website and selecting the option “MYSQL databases”. From there the database and the user of the database are created. Then, it is required to download the folder that contains all the WordPress files from the website wordpress.org. After downloading WordPress, the user needs to upload all the files that are inside the WordPress folder to the public folder of the web host. This can be done by using the FTP client program or through the Cpanel “file manager” tool. Finally, the user just need to go to the website address where WordPress will be installed and follow the
installation process. During the installation, the user need to provide the name, user and password of the database it was previously created. (Wordpress.org 2015d, cited 21.05.2016.)

In case the user considers that the previous steps are challenging, most of hosting service providers offers a plugin that facilitate the installation process of WordPress. This plugin is located in the Cpanel. After launching the script, the user just needs to fill some information about the WordPress site and the name of the database the plugin will create automatically. At the end the result is the same as installing WordPress manually.
The process of development the e-commerce site was divided in two phases. The first phase of the project consisted in creating the look of the meksikolainenkauppa. This phase involved selecting and modifying the theme of the meksikolainenkauppa. On the second phase of the project the e-commerce functionalities were integrated into meksikolainenkauppa, which consisted on installing and configuring the required plugins. This process is described in this chapter.

WordPress offers a wide range of themes developed by the WordPress community. Most of WordPress themes can be downloaded for free. It is also possible to develop a theme from the scratch, which gives the developer of the site a better control of the theme. On the other hand, this requires more time to create the site. Before considering that option, the current themes that WordPress offered were checked. In order to search for a theme in WordPress, select the appearance section from the dashboard and select the option Theme. From there click the button “Add new” and there it will appear the most popular themes available at the moment.

Since the goal of the project was to create an e-commerce site, a theme designed for e-commerce sites was selected. This was done by using the keyword e-commerce in the search option. After looking through different themes, it was decided to choose the theme called “store”. This theme was chosen because it had a simple and clear layout that it was considered to be appropriate. Another reason why this theme was selected was because it had a responsive layout. In other words, the layout of the site would react according to the size of the browser or the size of the screen in which the website is viewed. Having a responsive layout was an important aspect to consider while choosing the theme of the site because nowadays there is a wide range of devices of different size and resolutions. Thus, it was important to have an e-commerce that can be browsed through any device; otherwise the amount of users who access the website would be affected.

After selecting the store theme, the theme was installed through the WordPress dashboard. The installation process was the same as looking for a new theme. After finding the appropriate theme, the install button was clicked. This downloaded the theme files into the webhost.
Every time there is an update of the WordPress theme, all the files of the theme will be updated. Therefore, the changes for the website might be lost. In order to prevent this from happening it is necessary to create a child theme. A child theme is a WordPress theme that inherits all the functionalities and styles of another theme, known as the parent theme. This way the parent theme can be updated without losing the modifications that were done to the child theme. (WPbeginner 2013, cited 22.05.2015.)

There are two ways of creating a child theme. The first option is to do it manually by creating a new directory inside the folder content/themes. This folder will contain the style sheet file and the PHP function file that will override the parent theme. It is also possible to create the child theme through a WordPress plugin.

In the meksikolainenkauppa a child theme was created through the use of the plugin “Child Theme” Configurator. The plugin can be downloaded by going to the plugins panel and selecting “Add new” option. From there the plugin “Child Theme Configurator” was searched and downloaded.

In order to use the plugin, it needs to be installed and activated from the WordPress dashboard. After finding the “Child Theme Configurator” plugin through the search bar, the button “install now” was selected. When the plugin was installed, it was activated by clicking “Activate Plugin”. When the “Child Theme Configurator” plugin was activated, it added a new option to tool panel called “Child Themes”. This option contained all the tools that were required to create and configure the child theme.

By using the “Child Theme Configurator” plugin the child theme was created. In order to create the child theme first of all the plugin will ask you to select a theme from which the child theme will be created, in this case it was the theme called “store”. Then the user needs to provide the name of the child theme. It can be used the same name as the parent theme, but at the end it will be written “-child”. The child theme was named meksikolainenkauppa so it was easy to identify which theme contain the custom changes.

After creating and activating the child theme, it was time to modify the theme. The first changes of the theme were done through the theme customization. The theme customization provides the user the ability to modify and visualize the changes that will be taking place (Wordpress.org 2015e, cited...
Through the theme customization the color of the header and the footer were changed. This was done by selecting the skin option from the Theme customization dashboard and changing the skin from the default blue skin to GrayScale skin. Another modification that was done with the theme customization tool was to add the logo of the site. This was done by selecting “Title, Tagline and Logo” option, and then clicking on “upload logo” (see figure 2). This opened a window that showed all the pictures that have been uploaded previously into the WordPress site. Since the logo had not been uploaded yet, it was selected the option “upload file”. The size of the logo was adjusted through the customization dashboard.

Since it was not possible to make complex modifications of the theme through the theme customization tool, it was needed to add some styles rules to the style sheet contained in the child theme. These styles overwrote the styles that already existed in the parent theme.

The styles could be added through the WordPress dashboard, but I felt more comfortable to write CSS styles through the text editor. Therefore, the CSS styles were written by using Sublime text editor. Then, the CSS file was uploaded to the child theme folder using the FTP client program cyberduck. Before starting to write the style rules, first it was needed to identify which elements
needed to be modified from the theme. From the current state of the theme the logo needed to be adjusted. Also the search bar included in the header of the site needed to be removed.

After selecting which elements would be changed, it was required to find the ID’s and classes names of those elements. HTML elements uses ID’s and classes to attach the style rules to the webpage. In order to identify the names of those classes and ID’s, it was used the tools that google chrome browser offers to examine the website structure. This was done by pressing the right button of the mouse over the browser window and selecting the option “inspect”. This opened a panel on the left side of the browser where it showed the structure of the website and it was selected the chosen element from the website. By doing this it was possible to identify the names of the classes of the elements that would be modified. Then the styles rules for those elements were written and saved in a file called style.css (see figure 3.).

```
/*
Theme Name: meksikolainenKauppa
Template: store
Author: Kevin Mendez
Author URI: http://
Description: This is the theme for the meksikolainenKauppa Website
Version: 1.0.0.4.1462038905
Updated: 2016-04-30 17:55:05
*/
.
.

#site-logo{
  padding:1.5em;
}
.
#text-title-desc{
  padding-top:1.5em;

}.
div #top-search{
  display:none;
}
.
#secondary {
  float:right;
}
.
#weglot_here{
  float:right;
}
.

FIGURE 3 Adding CSS style rules to the Child Theme’s CSS file

Then the “wp-ecommerce” plugin was installed through WordPress dashboard. In order to install a plug in from the WordPress dashboard, the plugin option was selected and then “Add new”. The plugin was searched using the search bar. After finding the plugin, it was installed by clicking the “Install Now” button. Then, the plugin was activated by selecting the option “Activate plugin”. In the
moment the “wp-ecommerce” plugin was activated, two items were added to the WordPress dashboard: products and store. From the product option the user manages the products that are displayed in the e-commerce site. While the store option is used to modify the settings of the e-commerce site.

After the plugin was installed and activated, the settings of the e-commerce site were changed through the store option. First of all, the general settings of the plugin were changed. Finland was selected as the region of the store and the target market. Then the currency of the store was changed to euro. Also the option that displays the euro currency sign after the price of the products was selected. Since the payment method was not implemented yet in the meksikolainenkauppa site, it was not configured at that moment.

Wp-ecommerce has a shopping cart that can be integrated into the e-commerce site. This shopping cart is included as a widget. In order to activate this widget in the site, the appearance option was selected and then “Widgets”. It was possible to add the shopping cart in two different locations. The first place where it could be added was inside the page. Using this option would display the shopping cart at the top of the site. The other location the shopping cart could be added was in the sidebar as a widget. The second option was selected because it was considered that the website would have a better design.

Another task that was performed during the development of the meksikolainenkauppa was adding some products to the site. Since at the moment I was working on the website I only had a couple of products that I took with me on my past trip to Mexico, I used some pictures of products that could be used as an example to illustrate what kind of products could be sold in the site. In order to add the products to the site, the option products from the WordPress panel was selected and then “Add new”. Here the name, category, price and image of the product were introduced. The categories used to classify the products were Art craft, Candy, Men, Women and Party. Since the final prices of the products were not available, an estimation of the prices were given. When the information of the product was introduced, the “Update” button was selected so that the product was published on the site.

After the sample products were added to the web shop, the payment gateway was integrated to the site. The guide for incorporating the Checkout payment system to an e-commerce platform was found on the website of the service payment provider under the category technical material. There
I selected the instructions written for the plugin “wp-eCommerce”. In order to install this payment method, the PHP file checkoutfinland.php was downloaded. Then this file was uploaded inside the folder wp-merchants, which was located on the “wp-eCommerce” plugin folder. This was done using the FTP client program to connect to the meksikolainenkauppa site and upload the file. This enabled to use the payment method with “wp-eCommerce” plugin.

When the PHP file was uploaded to the wp-eCommerce folder, the payment gateway was activated by selecting “Checkout Finland” from the list of Payment Gateways (see figure 4). It was also required to add the user ID and the security key of the e-commerce site. This information was provided by the company Checkout after creating an account with them.

![Activating Checkout gateway through WordPress dashboard](image)

**FIGURE 4** Activating Checkout gateway through WordPress dashboard

The last task of this phase consisted on integrating the multilingual plugin Weglot. The process of installing Weglot plugin was the same as the “wp-eCommerce” plugin. After the plugin was installed and activated, the settings of the plugin were changed. First of all, the destination language of the website was Finnish. Then it was selected that the translation buttons would be displayed as flags. These buttons were added to the website manually in order to have more control over the position of the flags. The plugin provided the needed code to add the flags buttons in the header of the site. After the code was added, the flags were displayed in the left side of the header. Due to esthetic reasons, that was not the appropriate place to display the flags buttons. So a style rule was added to the Child Theme’s style sheet in order to change the position of the flags to the right side.
9 TESTING MEKSIKOLAINENKAUPPA

The final stage of the meksikolainenkauppa project was to test the site to see that all the functionalities work properly. It is important to test the site to make sure that the clients will not have any problems while using the site. Three aspects were evaluated during the test of the site: the responsive layout, the payment system and the multilingual functionality.

One of the important characteristics nowadays in websites is that they can be accessed from any kind of device. Therefore, they need to have a layout that responds to the size of the browser and screen of the device. In order to test that the meksikolainenkauppa responsive layout, it was used a website that emulates the different devices screens. The website used for testing the layout was responsivedesignchecker.com. Even though the best way to test a site is by using real devices, this kind of websites gives a general idea of how the site might look in those devices. The test was a success since all the elements of the layout were render properly across the different emulated devices.

The payment system of meksikolainenkauppa was tested by employing the use case technique. This technique consisted on simulating situations, known as cases, that the user could encounter while using a program or website (Tutorialpoint, cited 24.05.2016). The test was conducted using two uses cases: a user who wants to buy a product through his desktop computer and a user who wants to buy a product through his mobile phone. For testing reason, the price of the product that will be used for the test will be changed.

The first use case consisted on a male user who wants to buy a t-shirt from the meksikolainenkauppa using his desktop computer. First the user will visit the website by typing the address of meksikolainenkauppa to the browser or through a web search engine. Then the user selects the categories “Men”. After selecting the “Men” category the list of products for men will appear and the user will look for the desired product. He will add the product to the shopping cart. Since that shirt is the only product the user will buy, he proceeds to do the payment by selecting the checkout button. This will take the user to the checkout page where the user writes all the required information. Then the user selects the purchase button, which will open a new window that will take the user to the site of the Checkout payment service provider. From here the user will select the bank he wants to use to make the payment, in this case Nordea Bank was selected.
Then the payment service provider will send the user to the website of the bank where the user will have to introduce their credentials to log in to their account and confirm the payment. After the payment is accepted, the user will be taken back to the e-commerce site and the test will conclude. The second use case will consist of the same actions, but the user will be using his mobile device.

After completing the test following both use cases, it could be said that the test was a success. The website was able to accept the online payment from the user. On the other hand, it was identified a problem. When the payment was accepted and the user was directed to the e-commerce, there was no message that indicated that the payment was successful. Instead it displayed a page with an error message (see figure 5) This problem could be caused due to a misconfiguration of the “wp-ecommerce” plugin.

![Error message](image)

**FIGURE 5 Error message obtained after testing the payment gateway**

The last aspect that was tested in the meksikolainenkauppa site was the multilingual content. It is important the user is able to change the language of the site when requested. This test was performed by retrieving each page of the site and changing the language of the page. At the end of the test it was verified that the language of the page could be changed from Finnish and English and back.
E-commerce has changed the way the people buy and sell products. More people are starting to notice the benefits of having an e-commerce site to increment the sales of their product and get customers from other countries. There are also risks that are needed to be considered before starting an e-commerce site. Nonetheless the demand for e-commerce site has been increasing, which invites software companies to create e-commerce platforms that are affordable for all kind of users and are simple to implement. Therefore, content management system, like WordPress, have expanded their functionalities in order to cover the need for that kind of users.

The chosen e-commerce platform for developing the meksikolainenkauppa was WordPress. In order to use WordPress as an e-commerce platform, “wp-ecommerce” was required to be installed. This plugin provided the required functionalities to process a transaction from the client. In order to accept online payments from Finnish banks, a payment service provider that was compatible with them was required.

Most of Finnish payment service providers charge for a monthly fee, but the Checkout payment service provider offer their service without charging a monthly fee. For this reason, it was the payment system selected for the site.

Meksikolainenkauppa site was developed in two phases. The goal of the first phase of the project was to work on the look of the site. The second part of the project consisted on adding the functionalities of the site. This was done by installing and configuring the required plugins. Also the Checkout gateway was integrated during this phase and a plugin that translate the site from English to Finnish was installed.

After the project was completed, the payment method, the responsive layout of the site and its multilingual content functionality were tested. The layout and the multilingual content functionality test results were positive. On the contrary, a small problem was found after the payment was accepted by the bank and the user was returned to the e-commerce site. Due to time constrains, the problem was not addressed.
In general, it can be stated that the thesis was a success. The meksikolainenkauppa was created and was able to handle a test payment. The layout was responsive and two buttons in the header were added to allow the user changed the language of the site.

10.1 Discussion

This thesis gave me the opportunity to get to know more about e-commerce and practice my skills for developing WordPress site. It also gave me the chance to take the first steps to becoming an entrepreneur. Although I have not registered the company yet, I am planning to use the results of this project to start my own business in the future.

The development process was quite straightforward since I took classes where I learned the fundamentals of WordPress. Also during my studies at Oulu University of Applied Sciences I had the opportunity to participate in a project that consisted on developing an e-commerce site. Thus I already had previous experience that helped me to develop my own project. On the other hand, this project gave me the opportunity to learn how to install it an SSL certificate on my website.

Although the website is working properly and it is possible to handle online payments, there are still other aspects that need to be improved. Before selling products, it is important to improve the security through a security plugin and getting to know more about the security policies of the web hosting provider. Therefore, at the moment the shopping cart is disabled. Nonetheless the site will still be available online.

I decided to choose WordPress as the e-commerce platform for meksikolainenkauppa because of my previous knowledge and skills. Nonetheless it would be interesting and worth to get to know the other e-commerce platforms and what kind of solutions they provided for creating e-commerce sites.
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