Developing an E-commerce Website by Using WordPress CMS for "H.SWare Oy"

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Business Information Technology
Bachelor's Thesis
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Laurea University of Applied Sciences   **Abstract**
Degree Programme in Business Information Technology
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Nowadays, online shopping websites are developing at an unprecedented rate. They not only change the traditional mode of production but also have a very profound effect in economic restructuring.

This Bachelor's thesis aims to develop an online shopping site for a small-sized enterprise, H.SWare Oy, which plans to sell products to Chinese customers. This website was built on the WordPress platform. The thesis employs plugins to achieve a shopping site, which can carry out the release of, modification of and deletion of products.

WordPress is a PHP and MySQL language developed content management system, which users can establish their websites in. Using WordPress to build a website is not only quick and easy but also secure, economical and the website is easy maintained.

The development process of the website was based on the waterfall model, which is suitable for small projects. The data was collected by using research methods such as group focus and web wireframe. The project was accomplished with a functional shopping website delivered to the company. According to the feedback by the company, they were satisfied with the outcome.

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1   Introduction

The modern businesses are constantly innovating and implementing various ways to reach-out their customers. In recent times, the growing popularity of online businesses also utilized various e-commerce concepts including virtual enterprise, virtual bank, online marketing, online shopping, online payment and online advertising. With the rapid development of network technology, online shopping has been very popular on the Internet. People can shop at anytime, anywhere, which is entirely different than traditional shopping. There are many benefits. For example, the cost is far lower than the cost of traditional products in the store, easy to build online list of items, easy to buy, sell and deliver. Indeed, there are obvious benefits for buyers and sellers of goods. Overall, any businesses can get benefits for the development of a website with e-commence facility.

The purpose of online shopping website is smooth functioning of business. It also provides some additional benefits including possible e-commence and marketing method for the online business management of the enterprise. It also solves the problem of slow circulation of commodity information, restricted distribution area, unclear capital and operating status, and scattered market. Meanwhile, it is not only facilitates business process automation but also reduces the cost of enterprises to improve the overall efficiency of the company. In addition, it also establishes a simple, reasonable, fair and open transactions environment for users.

Many SMEs are benefiting from e-commerce online shops as explained above. Hence, Laurea University of Applied Sciences provided an opportunity to leverage the benefits and help a local company to design and develop new online web shop. An author has leaded a design and development project. The primary task of this project is to provide the platform of e-commerce for the merchandise and online shopping facility. The system can be used to manage the order including browse the products and items, confirm the goods availability, place an order, online payment and selecting possible delivery method.

1.1   Company Background

H.SWare Oy is a small shop which was founded in November 2015 in Helsinki (H.SWare Oy 2015). Their business includes importing products from several Finnish local brands Fiskars, Iittala and Arabia and selling to Chinese tourists. The way to attract customers is by cooperating with Chinese travel agencies. The shop signs a contract with a tour guides that promises the guide will take visitors to the shop and the guide can get a commission from the shop if tourists buy products. There were only 2000 Euro sales in January. With the weather warming up, more and more Chinese visitors came to Finland so that the sales increased rapidly during May to August. The off season is usually winters when less people come to travel. The shop

manager planned to sell products to Chinese to make satisfied profit even in off-season. In the past, they sold products to Chinese clients via a third-party company that brings more profit to the third-party company. Now, the company wants to sell products to Chinese customers directly to make more profit. Hence, an online shopping website is necessary for them the company.

1.2   About the Project

The reasons why a website is needed for the company are given as follows. Firstly, it is a start-up shop which needs a website to advertise their products. The company will publish the website in WeChat official account to Chinese customers who have subscribed the account. Hence, those Chinese customers can browse and purchase products after noticing the link of the website contained in the post. Secondly, selling products to Chinese customers directly instead of through the third-party company will bring considerable profit. The website will be the platform for the company to trade. Thirdly, there were a few people come to the shop in winter, which leads to unacceptable sales. Therefore, catching online customers will make up for the deficiency of off-season sales.

The target customers of the website are mainly Chinese thus Chinese is the only language supported by the website. One of the prominent reasons is that there is no purchase service for Chinese in the official site of the brands covering the products of the e-shop. Besides, there are some other online platforms selling products of those brands with extremely high price. Hence, selling products with normal price and providing convenience of purchasing service will make the website competitive.

The shop manager and the boss held a meeting with the author in May, 2016 to discuss the requirement of the website. The boss Mr. Huang wants a simple, clear website which means clients can access it easily and get familiar with our products quickly. The layout of the website should be user-friendly and color should be warmly because the shop sells household products. In the end, Mr. Huang requested the author to finish the website before next tourism off-season.

1.3   Objectives

The aim of this project is to establish a dynamic online shopping website for H.SWare Oy to sell products. Traditionally, H.SWare's customer-base are foreign tourists- mainly Chinese and south Asian tourists. Therefore the project was targeting few key objectives. First, the company is traditionally focusing on Chinese customers to separate from the other businesses. Hence, strategic goal is to target and serve to Chinese customers. Second, the online store will also helping to increase sales during the off-season when foreign tourist are not available

on mainland. This will be achieved by building a website which can help customers purchase products online and at the same time the owner of the shop can manage products easily. Some other objectives I set for this project are capturing requirement, a beautiful design, adding functions to meet owner and customers' needs. (Christian W. Daswson 2009, 61)

1.4   Structure of the Thesis

This thesis consists of 10 sections. In the first section, the project is introduced as well as main objectives of the project. Several research methods are listed in section 2. The main content of the third section is technical skills including CMS, HTML5, CSS, XAMPP and phpMyAdmin. The subsequent section 4 and section 5 relates to the core part of establishing the website, starting from designing to the final site created. Section 6 is about testing and launching, which will be mentioned compatibility test in different browsers and mobile platforms. Section 7 is implementation which indicates how the website transfers to a web host. Chapter 8 represents training approach and delivering the site to the company. The last two parts of the project are evaluation and conclusion in chapter 9 and 10 respectively.

Introduction

Methodology

Technical Tools Used

Design

Development Process

Testing

Implementation

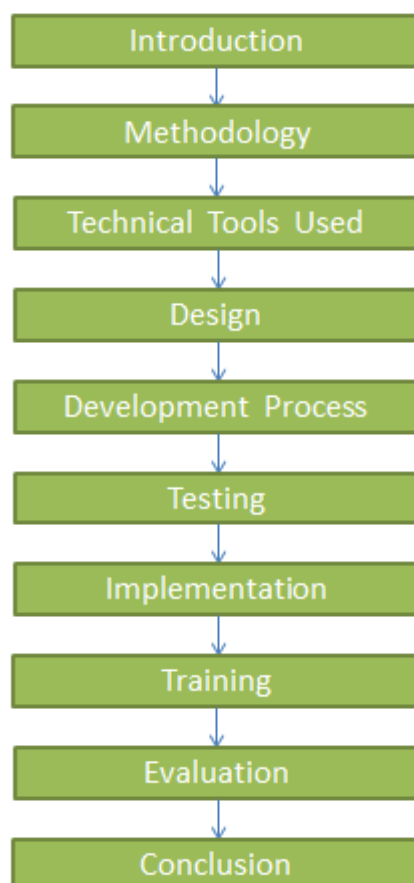Training

Evaluation

Conclusion

Figure 1: Structure of the Thesis

The figure above indicates the structure of the thesis in order to give readers a clear and comprehensive impression. The last section mentioned suggestion of future maintenance by the company.

2   Methodology

Methodology is the systematic, theoretical analysis of the methods applied to a field of study (Methodology 2016). This project is based on waterfall model to develop the whole website. In addition, there are several research methods used such as focus group and website wireframing.

2.1   Waterfall Model

The waterfall model a sequential design process (see figure 2). It is also known as a linear-sequential life cycle model (waterfall model 2016). In the waterfall model, the beginning of each phase is based on the completion of the previous phase. At the end of each stage, there will be a review process to allow clients' needs to be addressed more efficiently (what is Waterfall model-advantages, disadvantages and when to use it? 2016). There are several reasons to choose this model. First and foremost, it includes only five phases, which is straightforward and easy to apply. Additionally, it is easy to manage since each stage has clear outcomes and a review process. Lastly, this project is small and short as well as fully understood requirements. The website was developed by following waterfall model step by step.
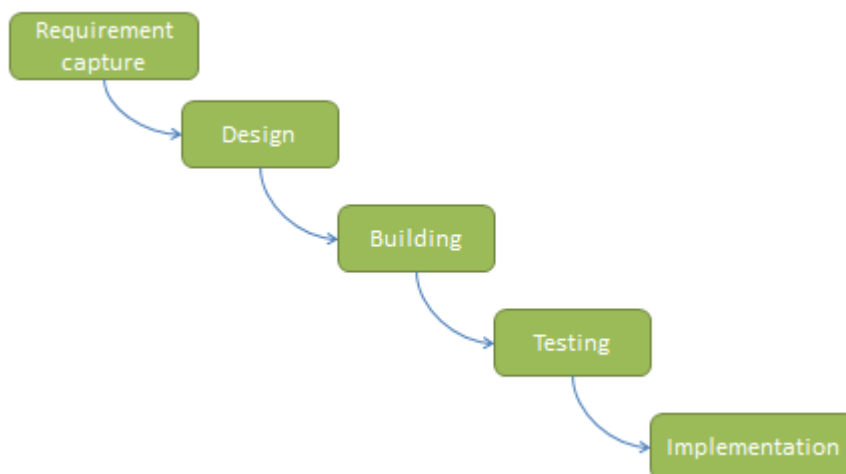
Figure 2: Waterfall Model

In this project, requirements analysis is done by a focus group bring together to find out what is needed for the website. The idea of requirement capture is to define clear requirements from the company. The design phase covers web wireframe design and development process.

Design concepts are based on what is founded in requirement capture. Building is the development of the website. The site is built in WordPress and shopping functions are fulfilled with Woocommerce. Testing phase is done by assuming that a user purchase products from the website and running on other devices. Testing is to ensure there will be no bugs appearing when the site is running. Implementation phase is done by transferring the site to a rented web host. When the website has been launched, users can access to it.

2.2   Focus Group

A focus group is a form of qualitative research in which a group of people (usually between 4 and 15) bring together to focus on a particular product or topic (Focus group 2016). There are some topics came up with in the meeting where participants are free to talk with other group members. At the same time, the researcher takes notes or records for collecting ideas and comments. The benefit of a focus group is that members can express their thoughts, share the feeling and comment others instead of on individual responses like an interview.

Two group discussions were held during the project. The group consists of five people (Mr.Huang, the manager, the author and two staffs) who attended in the first discussion before the design phase. We talked about design idea and functions of the website. As a result, the group members had an agreement that there should be sufficient images of the shop on the main page of the website and products category should be clear. The second discussion was formed before the testing phase with the same group members. They gave suggestions about the demo website. Focus group method played a major role in the project: it brought a broader range of information and made targets more specifically.

2.3   Web Wireframe

A website wireframe is a screen blueprint that presents the skeletal framework of a website. It can be drawn with a pencil or using the wireframing software. It helps establish functionality and the relationships between different screen templates of a website (Website wireframe 2016).

For web design, in most cases, clients need to understand how sites will work. Using a wireframe can hugely help them understand the majority of functions rather than simply explaining to them verbally. Therefore, clients and developer can communicate easier and clients can come up with more useful comments. The draft of designing plan was represented in the first discussion where the group members proposed valuable suggestions and the finalized version was then drawn.

3   Theoretical background and technical tools

This section covered concepts of technical tools that used to support the whole project. How the skills used and why they are necessary to the project are explained as well.

3.1   CMS

CMS is the abbreviation of the content management system which located between a web front end (web server) and a back office system or process (content creation, editing). Content creators, editors, and publishers can use content management systems to submit, modify, approve, and publish content without coding. The term "content" may include information about files, tables, images, data in the database, and even videos (Content management system 2016).Content management also optionally provides content crawlers that automatically fetch content from third-party sources, such as text files, HTML pages, Web services, relational databases, and analyze and place them in their content repository. With the development of personalization, content management also provides a customized front-end content to users.

CMS provides a visual content editing interface and abundant plugins so that the programming skills are not necessary to build websites. The project is developing a website for a small shop which the staffs have no web development experiences. Therefore, using CMS to establish a simple and easy-managed website is significant for the future maintenance. As the leading and the most popular content management system WordPress was applied to be the platform realizing the goal.

3.2   HTML5

HTML5 is the markup language on the World Wide Web for structuring and rendering content. It is the fifth and current version of the HTML standard. It was published by the World Wide Web Consortium (W3C) to support the latest multimedia with better language in October 2014. It makes not only human readable but also computers and devices such as web browsers can understand it quickly.

HTML5 includes intricate processing patterns to encourage more interoperable implementations; it extends, improves, and provides rationalized document markup for complex Web applications and introduces markup and application programming interfaces (APIs). For the same reason, HTML5 is also a cross-platform candidate for mobile applications, as it includes design-time considerations for low-powered devices (HTML5 2016).

There are three main advantages of HTML5 which are easy use, support video and audio and browsers' compatibility. HTML tags make it easier for the developer to access the content.

Using the new definition tags, the developer can understand the HTML document better, and create a better user experience. HTML5 make inserting video and audio as simple as inserting pictures. HTML5 is supported in all modern browsers. All browsers automatically handle un-recognized elements as inline elements so that even an old version browser can cope with unknown HTML elements (HTML5 Browser Support 2016).

HTML5 were seldom used in process of building this website as WordPress provides a visual editing interface. In other words, the developer can edit content without coding. On the other hand, the coding function is also permitted to modify any content. The shortcuts of common HTML5 tags are provided in editing page which is convenient for the developer coding. For the purpose of enriching content of the website, HTML5 codes were used to insert images, a map and a music player in this site.

3.3   CSS3

CSS stands for cascading style sheets which describe how HTML elements are to be displayed on the screen (CSS Introduction 2016). CSS3 is the latest evolution of cascading style sheets language which can achieve the separation of web content and design of the content. Compared with the traditional HTML page, CSS can position any object in the page and support almost all the font style. There are three methods to use CSS3 in a web page: Linking, Embedding, and Inline. When it needs to be applied to a lot of pages, linking CSS will be the ideal choice. Appearance of the entire site can be changed by only editing a file. When a single page requires a special style, embedded CSS is a good choice. When a particular style needs to be applied to individual elements, inline CSS is a good choice.

In this project, CSS codes were not used in the process of web development because the font size, color and content position could be modified in management page of theme. However, it played a significant role in fixing bugs. There was a bug appearing when Woocommerce is installing. This problem was solved by modifying the linking CSS file of the theme. The CSS codes had been tested and adjusted many times to get the suitable one so that content displayed properly.

3.4   XAMPP

XAMPP is a free and open source cross-platform web server solution stack package. It stands for Cross-Platform(X), Apache (A), MariaDB(M), PHP(P) and Perl(P). It includes server application (Apache), database (MariaDB), and scripting language (PHP) which means XAMPP has everything needed to set up a web server. Developers can build a web server easily with XAMPP application. The most web server deployments use the same components as XAMPP, it makes transferring to live server easier (XAMPP 2016).

XAMPP provided substantially supports to build website in local host. The initial site of the project was founded in local host and the database was created by running MySQL in XAMPP. After everything completed, the website transferred to a web host.

3.5   phpMyAdmin

PhpMyAdmin is a free software tool written in PHP that is designed to handle MySQL administration via the Web. PhpMyAdmin supports a broad range of MySQL and MariaDB operations. Common operations such as managing databases, tables, columns, relationships, indexes, users and permissions, can be performed through the user interface. (Bring MySQL to the web 2016). Database is essential for a website no matter in local host or web host. PhpMyAdmin was used to create database of the website in local host and export the database for launching the site.

3.6   Use Case Diagram

A use case diagram illustrates the activities that are performed by users of a system. It represents the relationship between the user and the activities (Scott Tilley & Harry Rosenblatt 2016, 113). The diagram was created to clearly indicating what users and the administrators can do in the process of functional design. Since the company had no background in managing website, a diagram could help them understand how the system will work.

4   Design

In this part, the requirement analysis and web wireframe design concept will be explained. The purpose of a focus group was to collect design ideas from the shop operators' aspect and customers' aspect. The development of the website that presents how the requirements achieve will be also explained.

4.1   Requirement Capture

The waterfall model begins with a requirement analysis or requirement capture which describes problems or desired changes in a business process. "When managers can users develop their business plans, they usually include IT requirements that generate systems requests." (Scott Tilley & Harry Rosenblatt 2016, 20) The method focus group is employed to capture the company's requirement for the website. According to group findings the mainly task is to accomplish purchasing process to increase profit for the company. Specifically, the website should contain company introduction and products' introduction and appearance should be well-designed. What's more, the website should be easy managed that the company can maintain it in the future. The outcome from this phase of the process are a use case diagram with explanation that clearly defines what the customers and the administrator can do and a checklist that indicates what is present in the website. (Christian W. Daswson 2009, 116)
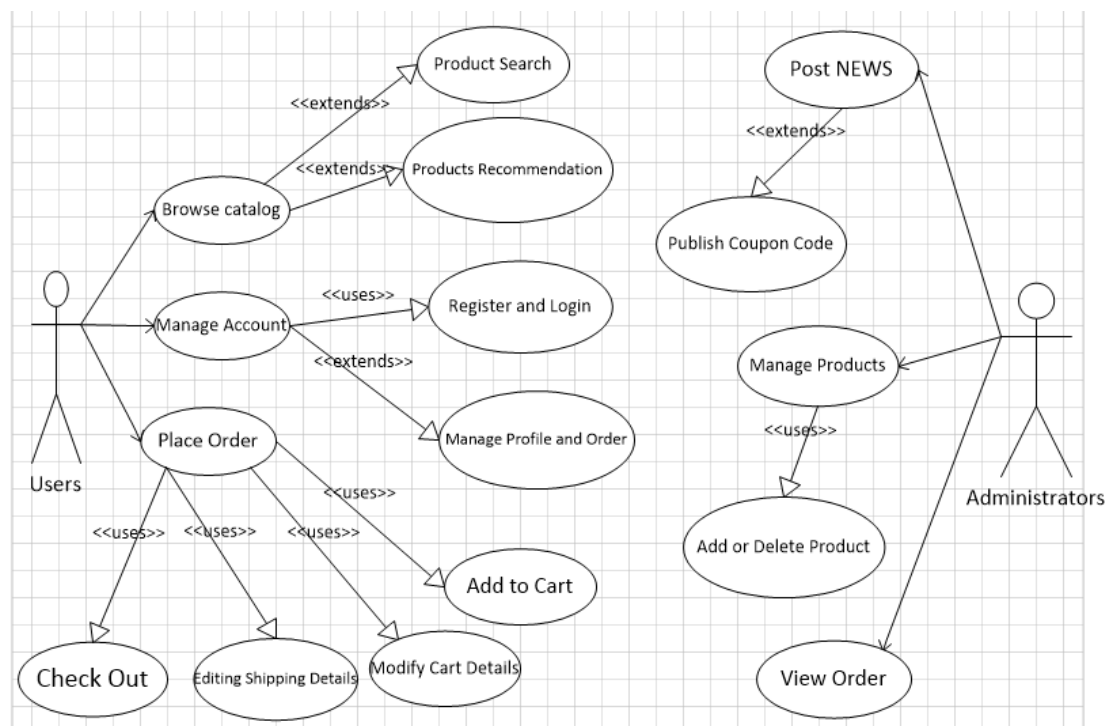
Figure 3: Use case diagram

From the image above, it can be seen that the website has contained necessary functions of online shopping. Users can manage accounts after logging in to the system. Search can be done by the name of the products and the classification of the products. When users are browsing products, recent views or related goods will be recommended in order to help them find what they are looking for rapidly. Places Order consists of adding to cart, modifying cart, editing shipping details and checking out. On the other hand, Administrators post news to the main page such as publishing coupon code. They can add or delete items and edit orders to ensure the orders process successfully. In addition, it is not mandatory for users to register and they can purchase products as well.

The following figure 4 in next page explains what content would display on the website. The company and brands introduction would give users a general impression of the shop, which contains a Google Map, shows the company location to make the online store reliable for those customers who have not been to Finland before. The products' categories and details help users to find what they want. Users can leave comments to help the company improve services and the company can analysis users' satisfaction from comments. The Coupon code is created to attract customers result in gaining profit for the company. The language of the entire site is Chinese due to the target customers and this eases users acquainting with the Finnish brands.

❑ Company introduction

❑ Brands introduction

❑ Products categories

❑ Products images and descriptions

❑ Comments form

❑ Coupon codes

❑ Chinese available

Figure 4: Check list

4.2   Interface Design

A well-designed interface will helps users to perform their actions and help them to learn a new system rapid and be more productive. Based on the group findings, the color, layout and ease of use are taken into account to design an attractive layout. Web wireframe is an employed method to present design idea of the appearance. (Scott Tilley & Harry Rosenblatt 2016, 244) The appearance customizing will be descried particularly in section 5.4.

"Balsamiq Mockups 3" is the application chosen to draw wireframe for this project. The following figure 5 shows general appearance of the main page. Once users enter to the page, they can see many pictures plays in the slide. Hence, they will have a preliminary understanding of the products. The primary menu and search box are on top of the page which makes users select what they want to explore quickly. Below the slide, there is some news such as the latest discount or new arrival information. There is also a small area below the navigation bar to record the 2-3 products that users recently viewed.
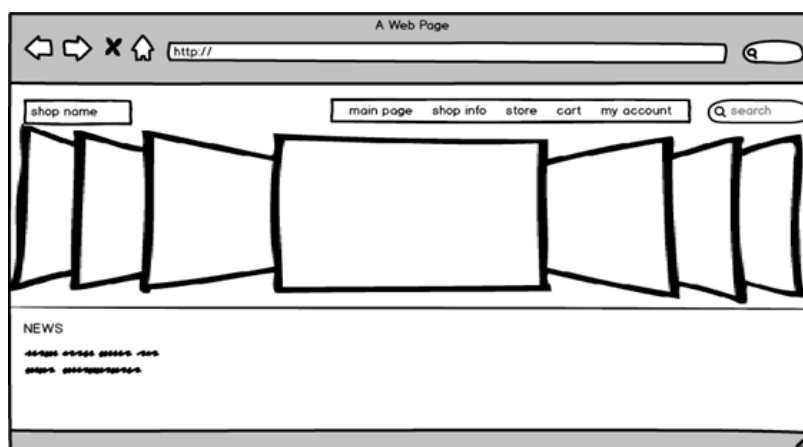

Figure 5: Main Page

The following figure 6 presents the store page. Like most shopping websites, a plenty of goods display in the center of the page. On the right side, there is a detailed product navigation bar including categories (brands classification) and subcategories (series classification).

Figure 6: Shop Page

The figure 7 is the navigation structure. It is straightforward and clear which mean users can access it quickly. A draft of web wireframes was sent to Mr.Huang, and he was very satisfied with the design.
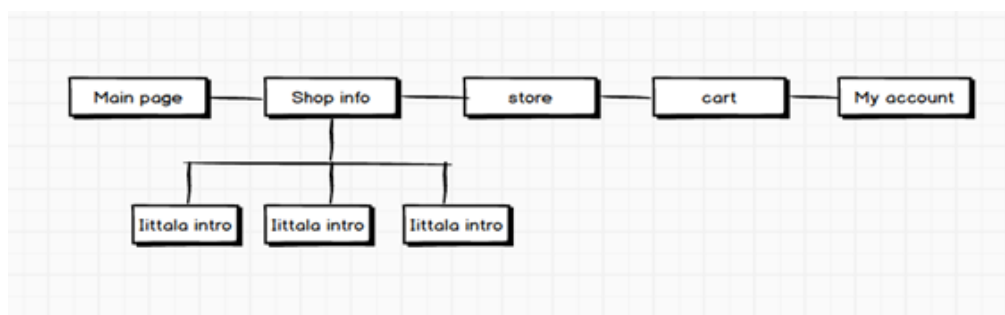

Figure 7: Navigation structure

5   Development Process

5.1   Choosing a Proper CMS

The project truly begins with the selection of the content management system. Nowadays, three mainstream CMS software are popular in the market which are WordPress, Joomla and Drupal. It is hard to choose right one because they are all powerful and free. Hence, the author made a comparison among Drupal, Joomla and WordPress.

WordPress is the world's most popular content management system which is used on almost 40% of CMS-based websites (CMS Usage Statistics 2016). It is easy to use even if you do not have any experience on web development. It is mainly used to build small-to-medium-sized websites, blogs and small e-commerce stores.

Drupal with an 8% ratio of usage becomes the second modern content management system (CMS Usage Statistics 2016). It is the most difficult but the most powerful one. So you need have basic knowledge of HTML and other programming languages to use it. Besides, Drupal does not have any web host which means you need to buy your domain and host (Robert Mening 2016).

Joomla is less popular than WordPress and Drupal but still powerful enough to run most websites. Using Joomla has demands of programming skills. It is ideal for social networking websites and e-commerce stores (Robert Mening 2016).

For this project, WordPress was applied to establish the e-commerce site. Compared with other two CMS, WordPress is the easiest one. It will take less time to fulfill the project demands. In addition, the web development course in Laurea Leppävaara gives the author a preliminary understanding of WordPress. WordPress has thousands of free plugins can be used, one of which is called Woo-Commerce meet most requirements of an e-commerce website.

5.2   Development Environment Establishing

The first step is to download XMAPP from the Internet and then install and launch XAMPP. Click "start" button to run Apache and MySQL, as shown in below image:
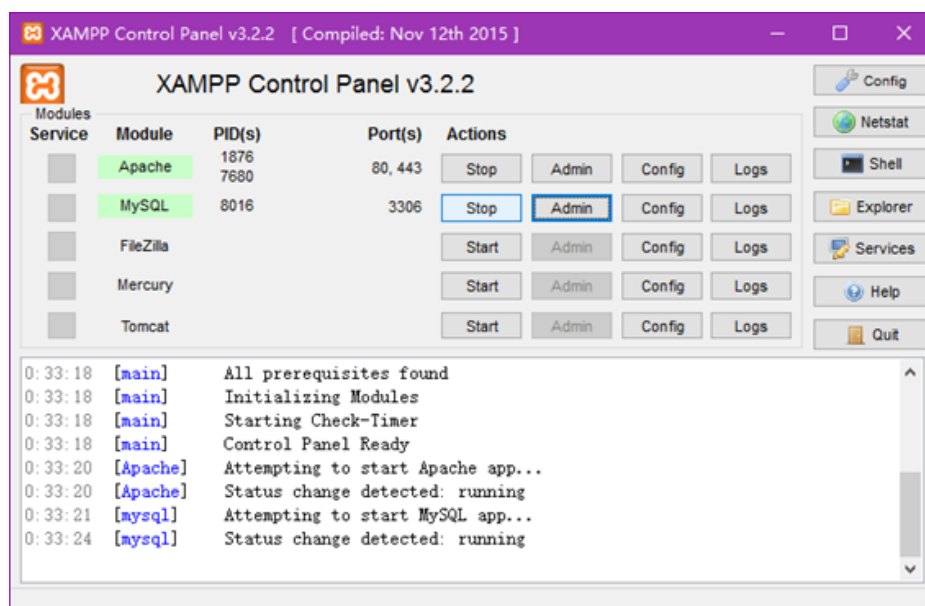

Figure 8: Installing XAMPP

The second step is to download WordPress from official website WordPress.org, extract files to xampp/htdocs and rename the folder name to "hsware". The following task is to create a

database in phpMyAdmin (see figure 9) to save website data and add a user account to administrate the database. The image below shows a completed database with a user.
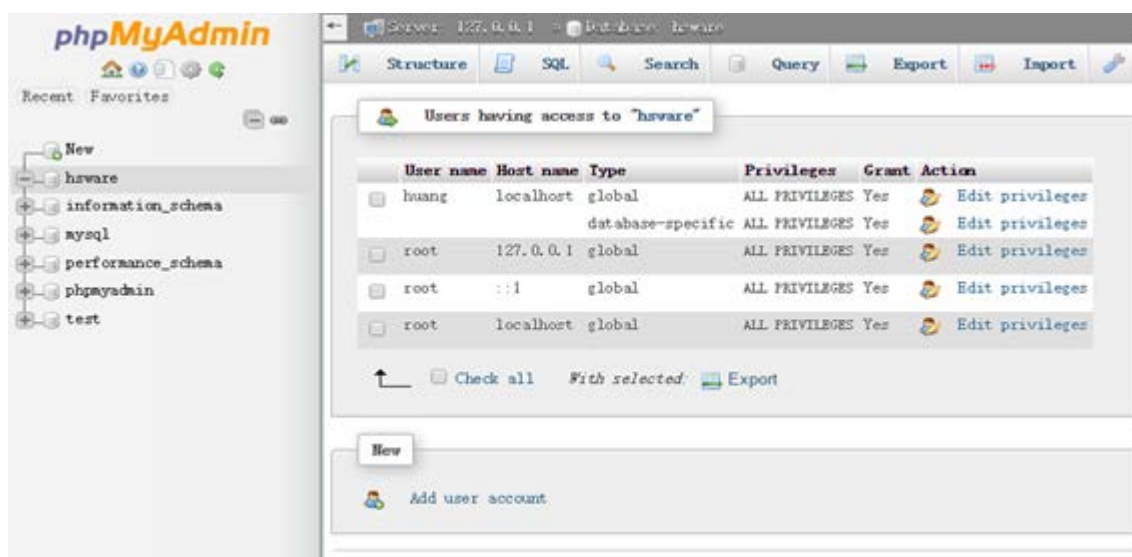

Figure 9: Creating database and user

Next was renaming the file "wp-config-sample.php" to "wp-config.php" in hsware folder and enter the created database information to instead default information.

```
 // ** MySQL settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define('DB_NAME', 'hsware');
/** MySQL database username */
define('DB_USER', 'huang');
/** MySQL database password */
define('DB_PASSWORD', 'Ljq19931107590');
/** MySQL hostname */
define('DB_HOST', 'localhost');
/** Database Charset to use in creating database tables. */
define('DB_CHARSET', 'utf8');
/** The Database Collate type. Don't change this if in doubt. */
define('DB_COLLATE', '');
```

After above steps, launch localhost/hsware in the browser to setup configuration file (see figure 10 in next page). By this time, the entire environment has been built successfully.

Figure 10: setup in WordPress

5.3   Choosing and installing a theme

WordPress provide two default themes but they did not meet the design idea. The key element to find a proper theme is that home page contains a slide, a menu and the general layout fit the design. The author tried many themes with good appearance, but they have a common problem that they cannot customize the image of the slide unless upgrading the theme to pro-version. Fortunately, an ideal theme named Sydney was found which can customize any content freely. Sydney is a powerful business theme that gives companies or freelancers a fast way to create a satisfied website. Sydney brings a wealth of customization possibilities such as access to all Google Fonts, full-color controls, layout controls, logo uploads, full-screen sliders, title images and much more. According to the statistics, the theme is downloaded around 1000 times per day (Sydney 2016). Consequently, the Sydney was applied to support the website.

5.4   Customizing appearance

After the theme was installed, customizing appearance such as font size, background color, could be done in management interface. White and Grey was chosen as the main tone of the whole page in order to reflect the Nordic home style and also make customers comfortable. As for the font size, they were enlarged to make the content displayed more clearly. In the widget part, some unnecessary functions were removed such as page categories, RSS and

login because a simple and clear page is the goal and users can purchase goods without login. The theme and the design ideas were almost the same, so the structure of the site was based on the theme. Most of the content and format were directly modified without changing in CSS or PHP file. However, there were probably some compatibility issues between WooCommerce and the theme, the box of purchase quantity was too small to show the number. Hence, I changed the CSS file with codes below to solve this problem. The effect shows in Figure 11.

```
.woocommerce .quantity .qty {
        width: 5em;
        text-align: center;
        font-size: 20px;
}
.coupon_code {
        width: 135px!important;
        height: 36px;
}
.single-product .woocommerce .quantity .qty {
         width: 5em;
         text-align: center;
         font-size: 25px;
        height: 35px;
}
```


Figure 11: Effect of Changing CSS (Source: hsware.rockpug.com)

5.5   Applied Plugins

WordPress plug-in can be a program or a set of functions written by PHP. It allows a developer to modify, define and enhance the website's functionality in a convenient way. Developers can add features to WordPress directly without changing the core code. To achieve and enhance the functions of the website, I used several plugins which are introduced as follows.

5.5.1   Woocommerce

WooCommerce is a free e-commerce plugin for WordPress. It offers a platform for store owners to sell anything. Nowadays, it is used in 30% of all online stores which makes it become the most popular e-commerce plugin for WordPress (WooCommerce 2016). There were five reasons to install it in the project. First of all, it is a secure online shopping platform with a plenty of functions. With this plugin, the store can sell physical products on the platform; it can also set a different tax rate and shipping fees for different regions. Customers can complete browsing, selecting and purchasing actions within a secure environment. Secondly, it is mobile friendly. It displays products matching the screen on computer perfectly as well as on customers' cell phone. So customers can shop it anytime and anywhere. Thirdly, it has business data analysis system. Sales report can be obtained directly in WooCommerce management interface instead of making administrators collect and analyze sales data manually. Lastly, it is easy to train. Although WooCommerce has some complex functions, it is still very simple to use. Even those who do not have any experience in web development can adequately manage the store skillfully in a short time, which is beneficial for the future maintenance of the website by the H.SWare Oy.

WooCommerce can be downloaded in the plugin directory. After adjusting some basic settings such as store area and currency, WooCommerce is installed successfully and products information can be input. WooCommerce is bundled with Store page and Cart page which can be used by adding them to menu directly. The setting up process will be explained in following section 5.6.

5.5.2   All in One SEO Pack

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a web search engine's unpaid results. SEO is the key element of successfully advertising any websites.

All in One SEO Pack is one of the all-time most downloaded plugins for WordPress (All in One SEO Pack 2016). It is used to achieve the WordPress web page (especially the article page) of

the overall optimization. As we know, WordPress is SEO-friendly in static URL and other aspects. However, in terms of title, description and keywords, it still shows particular weakness. All in One SEO Pack plugin can appropriately make up for these needs.

5.5.3   WP Image Zoom

WP Image Zoom allows customers to see the details of images. It works well in WooCommerce with easily enable the zoom on all the products' images. It can also apply the zooming effect on any images in normal pages. It would give users a better experience than only creating an image gallery.

5.6   Setting up e-shop with WooCommerce

The setting up process shows as figure 12 in next page, which explains specifically as follows. WooCommerce is downloaded in the WordPress plugins repository. After it was activated, a tutorial for initial settings presented. WooCommerce will create four pages automatically that are needed for an online shop, which includes Shop, Cart, Checkout and My Account pages. However, Checkout page is not necessary in the main menu since customers can follow the instructions in Cart page step by step to checkout. A clear and simple menu will provide a better users experience. Hence, only the Shop, Cart and My Account pages are added to the main menu. After the above steps, the WooCommerce has been set up completed and the store can be accessed by the main page. The next step is adding new products to the shop. There are two new tabs in the dashboard's side menu-WooCommerce and Products. The new products are added by creating a title and short description in Add Product which is a subpage in the Products tab. The image, price and category of the product are also added in Add Product section. The detailed process of adding products are explained in section5.7. To attract customers, a coupon is then created by customizing the discount and restrictions in the coupon editing screen, which will be one of good features of the website. The last step is finalizing Setting section in WooCommerce tab. There are 8 aspects of the e-store need to be customized, which are General, Products, Tax, Shipping, Checkout, Accounts, Emails and API. The store's location, selling location and currency are customized in General tab. The weight unit and dimensions unit are set as kilogram and millimeter in Products tab. There are no other settings in Tax tab except choosing if the price entered with tax. The shop will not use default shipping method because the shipping fee is hard to count. The company's plan is adding 5 euro to price of each product to be the shipping fee and they will use the third-party shipping services. In other words, the entered price includes shipping fee thus customers don't need to pay extra. Hence, nothing has been set in the Shipping tab. The payment method are chosen as bank transfer in Checkout tab and bank information has been uploaded. The Account tab has been remained as default. Emails tab is used to set which email will receive the new order notification from WordPress. The author's own email was utilized in the

building phase and it is replaced by the company's email after the website had launched. There is no content changed in API tab. Afterwards, the e-shop has been setup completely.
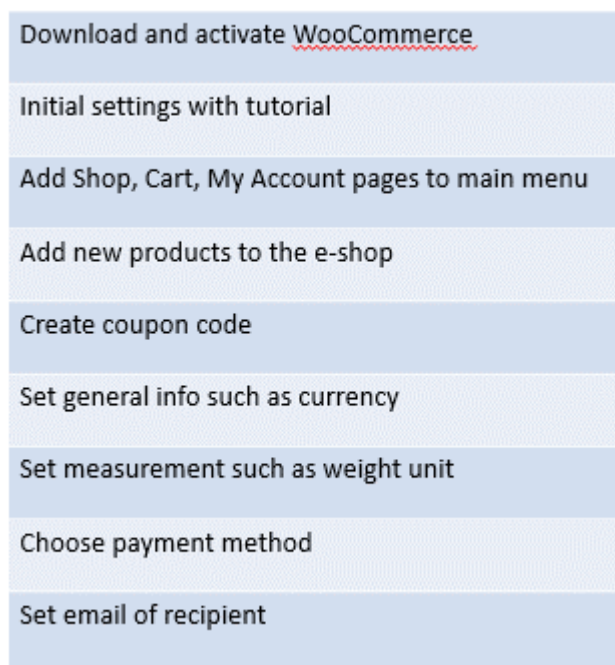

Figure 12: Process of setting up e-shop

5.7 Adding new products

Adding new products is the core part of setting up an online shop. Before adding products, a specific product brand and series classification was made. During the process, each product was marked with an appropriate category and tag, allowing users have a clear understanding of the classification of the product and also easy for users to search. All product images were taken in the physical store and did not use pictures on those brands' official website in case of copyright disputes. However, the product size data were obtained from the official website. The introduction of brands and series were gathered and translated on the internet by the author. Since the website is mainly for Chinese customers, the entire contents of the site are in Chinese. Furthermore, there were totally 30 items on the demo website.

5.8 Finalizing the website

Based on the group focus research method, the second group discussion was held. The team members were the same as the first meeting. In this session, the author gathered some reasonable suggestions. Mr.Huang thought that the products were of much less variety. It could not show the scale of the shop. The shop manager came up with a creative idea that light music played on the website can make customers relax and comfortable. The currency could be

changed to Chinese Yuan because most Chinese people cannot pay Euro. The sign of Word-Press and Sydney should not inscribe in the footer.

For the first problem, more products were uploaded to the site. As a result, there were 67 items in the final version. Secondly, a text function was added to widget which the content of the text function was a set of code:

<embed src="http://www.xiami.com/widget/0_1769496770/singlePlayer.swf" type="application/x-shockwave-flash" width="257" height="33" wmode="transparent"></embed>

Then the page displayed a music player in widget part as Figure 13.

Figure 13: Display music player (Source: hsware.rockpug.com)

Thirdly, all the prices were transformed to RMB with a 7.6 exchange rate. Lastly, copyright and contact email replayed previous content according to web design best practice checklist. (Terry Ann Morris, ED. D. 2016). At this moment, the final website was created completely.

5.9   Features of the Website

A successful web page should take into account not only the user interface design but also the practical functions. Every developer is striving to make website's appearance and content look more attractive. In the following chapter, some useful features of this site are described.

5.9.1   A Google map

A Google Map was inserted (see figure 14) by using HTML5 codes to make this website look more reliable. This can give Chinese customers who have not been Finland before a better impression of the shop.

```
<iframe style="border: 0;" src="https://www.google.com/maps/embed?
pb=!1m18!1m12!1m3!1d1984.8239740115866!2d24.945849316106326!3d60.16709288195976!2m3!1f0!2f0!3f0!3m2!1i1024!2i768!4f
13.1!3m3!1m2!1s0x46920bcecfeeded7%3A0xf60cd7fb13e53a49!2sEtel%C3%A4esplanadi+12%2C+00101+Helsinki!5e0!3m2!1sen!2sfi
!4v1476895480970" width="400" height="250" frameborder="0" allowfullscreen="allowfullscreen"></iframe>
```

本店地址位于芬兰首都赫尔辛基市中心。

地址：Etelaesplandi 12,00130, Helsinki，Finland

邮箱：hsware@gmail.com

Figure 14: codes to insert Google Map

5.9.2 Clear products categories

As it was mentioned before, a detailed product brand classification and series classification were listed. Moreover, each product was marked with tags such as bowls, mugs, plates, ceramics and glass. Customers can not only browse by the series of goods, but also search a particular type of products by clicking the tags (see figure 15).

Figure 15: Products Classification (Source: hsware.rockpug.com)

5.9.3 Coupon Created

For the newly opened stores, using coupon is a good way to promote. Thus, in the project, a coupon was designed, if the consumption is more than 3000 CNY, users can use the coupon code to decrease the payment by 200 CNY. However, each user can only use once. The coupon code was posted in the article at the home page. This was just a simple example of an

offer, and the site administrator can design more discount events to attract customers in the future.

6   Testing

This section contains the test part and launch and maintenance part according to waterfall model. Functionality and compatibility were considered when test is preceded. After the website was launched, the customer can access the site anytime and anywhere. Then the training has conducted for staff in the company.

During the test process, a new user was created as a customer to test his actions in purchasing products, commenting products and viewing the order in the personal account page. On the other hand, administrator's actions were also checked.
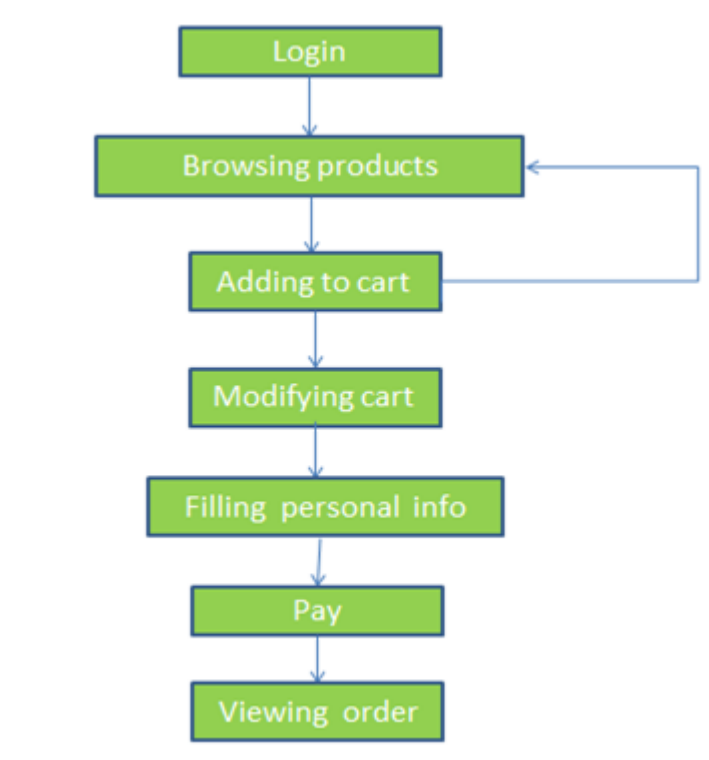

Figure 16: Purchasing Process

Figure 16 in previous page shows a whole purchasing process (website screenshots see appendix1). User login first and then goes to the store page to choose what they want and add to cart. At the same time, the user can decide to pay directly or continuing scanning. Next, the user modifies the number of the products to confirm the order. The only one payment method is the bank transfer. When the user selects "bank transfer" to pay, he can receive an email with bank info and order description. In "My account" page, the user can view the order and manage personal information. Next time the user purchases, the shipping address will

default to the set address. When the user receives the goods, he can give comments in products description page. For those who do not register, they can also buy products and provide comments, but they cannot view the order in "My account" page. For the administrator of the site, he can find the order in WooCommerce management page and receive an email as a reminder (see figure17 and 18).

Figure 17: Order

Figure 18: Email Reminder

The compatibility of the website is tested in different browsers such as Google Chrome, Microsoft Edge, and Safari. It is also tested in difference devices. This site can adapt to a variety of browsers and devices because the WordPress and WooCommerce can support most browsers and devices correctly.

7   Implementation

The case company was not willing to buy a domain name and server considering the management of server in the future, so the server and domain name were rented from one of the author's friends. He established his own server. He allowed the website to use a subdomain name to an existing domain name for free, but the company needs to pay him 20 euros per month for renting the server. He indicates that he will be responsible for server operation and management in the future. Mr.Huang agreed with this plan. Thus, the author asked him about the server IP address, FTP account and domain name and uploaded all website files to FTP. Then, the database was exported from local host and imported to the server. Lastly, the url in WordPress management system was changed to hsware.rockpug.com. Now, the website officially launched and we can see in the following figure.
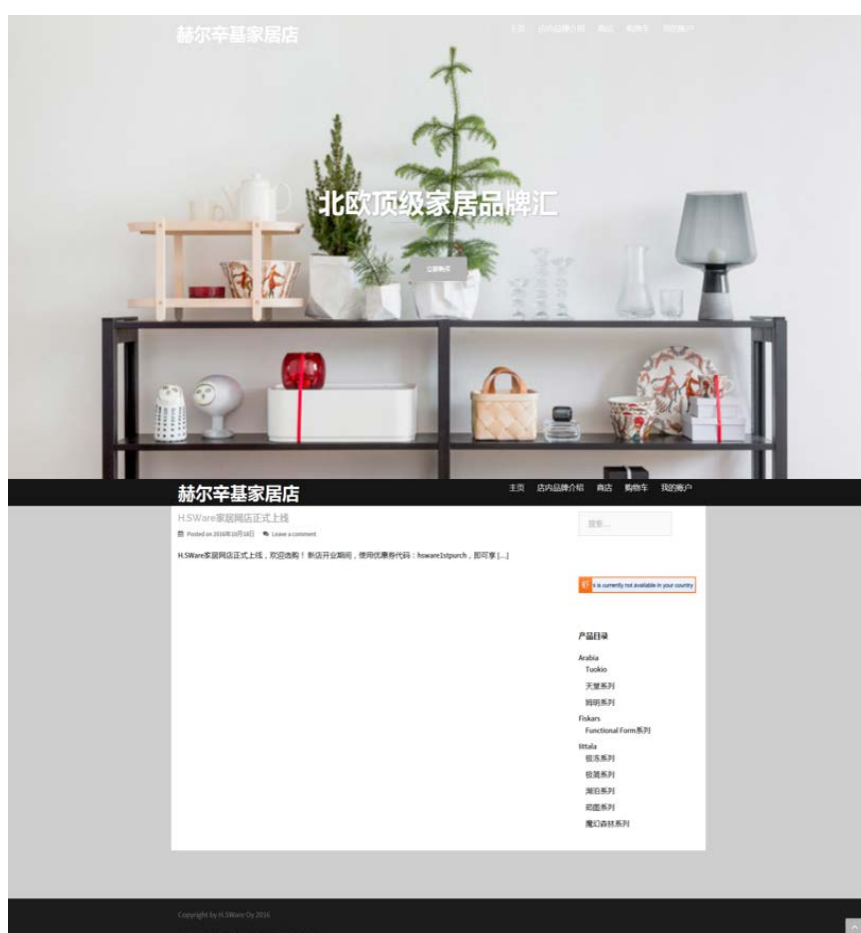

Figure 19: Main page of the website (Source: hsware.rockpug.com)

8   Training

After the site had launched, the site is delivered to the company. Their staffs should operate the future management and maintenance. Since their employees do not have any experience in managing the website, as the website developer, the author has the responsibility to teach

them how to manage this site, as well as a variety of functions of the site. Therefore the author went to the company to give them demonstration of purchasing process by the user and managing orders by the administrator. The author also taught them how to add, change products and post new articles. Taking into account the company's confidentiality, two new users were created as administrators to their employees, and delete the developer's account. The using email and bank information were replaced by the company's. So far, the project was finished. The author still can help them if they need to add new features or encounter any problems.

9   Evaluation

Although this website has been on launched but it has not received any order until the thesis report finished. The company is making publicity plan for the website. They plan to spread the site to the tour guide, hoping the site can be extended to tourists. They will also publish the website in WeChat official account. On the other hand, if Chinese tourist who visited the physical store like our products, they can still purchase products from the website after they go back to China.

From the feedback by the company, the project outcome is useful and functional and all the requirements were achieved. The whole shopping process can be smoothly done via this website. The outlook was designed properly which will give users a good emotion. They can manage it after training by the author. The cooperation was excellent and each step of process was explained and informed to the company. Mr.Huang is keen to see that the site will help the company increase sales in the off-season. He also believes that even if nobody orders from it, the site does an excellent job of advertising the shop. More and more Chinese people understand and like these brands are also his wishes. I will also keep in touch with this company to see the future development of this site. Mr.Huang is very satisfied with the website; he said that if he opened the other store, he would still ask me to build a website.

The main goal of this project for me is to develop a shopping site and increase website development experience by using WordPress. I used much knowledge learned in the classroom to support this project. On the other hand, in the process of the project I have learned a lot of new skills. From this point of view, I believe that the project is successful.

10   Conclusion

The website has been delivered to the company and they can manage it properly. From the author's perspective, however, there are suggestions given for the future development. The company can consider using online payment to achieve money transfer. Because the default online payment PayPal does not support Chinese yuan, it cannot be applied to this site. They can try to install other payment applications such as Alipay and Wechat Pay that are common

used in China. Besides, the products information should be updated frequently as well as the coupon code. For example, they can upload new products and design promotion activities to attract customers. Security test is also recommended to fulfill. Confidentiality should be concerned for protecting customers' data and sales status especially if they applied online payment. The website should provide a secure and convenient online shopping environment.

I believe the website will increase sales in the future. WordPress is a platform for a broad range of applications, which can support any typical website. I will continue learning how to use WordPress to build other types of sites, and I expect the cooperation with Mr.Huang next time.

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Figures

Appendices

Appendix 1: Screen shots of ordering process