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Patrik Sabel

DEVELOPMENT OF AN E- COMMERCE SITE FOR UBM FLOWBOARDS

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Patrik Sabel

DEVELOPMENT OF AN E-COMMERCE SITE FOR UBM FLOWBOARDS

The objective of this thesis was to create the frame for an E-commerce site for UBM FLOWBOARDS, a Korea-based company. The main function for the site is to provide the company with a channel for marketing and selling their products. The site is required to be bilingual, with content in both English and Korean. The products are mainly flowboards with artistic graphics. The company does not have an existing site.

An action research method was used for this thesis. The thesis is a combination of practical work and theory. The theoretical part of the thesis consists mainly of general information about essential concepts as part of setting up an E-commerce site. The practical part consists of choosing and setting up suitable software for the project and comparing different hosting services. The site was developed with the WordPress platform in an offline development environment, and can be uploaded online, once a hosting service and a domain name has been chosen and bought.

The scope for the thesis included creating the basic layout and functionality for the site, and providing the commissioner with instructions on how to add content. Creating the actual content was not part of the thesis. Conclusive search engine optimization is also out of scope.

The result of this project is a nearly completed E-commerce site that can be uploaded to a host server and be configured. There were some challenges with the communication during the development process due to language barrier and cultural differences. The goals for the site were loosely defined. The goals set for the thesis were still met eventually.

KEYWORDS: wordpress, content management system, e-commerce, website

OPINNÄYTETYÖ AMK | TIIVISTELMÄ

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Patrik Sabel

VERKKOKAUPAN RAKENTAMINEN UBM FLOWBOARDSILLE

Tämän opinnäytetyön tarkoituksena oli luoda verkkokaupan kehys korealaiselle UBM FLOWBOARDS -yritykselle. Sivuston päätehtävänä on tarjota yritykselle kanava tuotteiden markkinointiin ja myyntiin. Sivuston on oltava kaksikielinen ja sisällön tulee olla sekä englantiksi että koreaksi kirjoitettua. Tuotteet ovat pääasiassa design painettuja flowboard-lautoja. Yrityksellä ei ole verkkosivustoa aikaisemmasta.

Teoriaosuus koostuu pääasiassa yleisestä tiedosta olennaisista käsitteistä osana verkkokaupan perustamista. Käytännön osassa valittiin ja asennettiin hankeelle sopivat ohjelmistot sekä tarkasteltiin muutamia hosting-palveluvaihtoehtoja. Sivusto kehitettiin WordPress-alustalla offline-kehitysympäristössä. Sivusto voidaan siirtää verkkoon, kun hosting-palvelu ja verkkotunnus on valittu ja ostettu.

Opinnäytetyön laajuus sisälsi sivuston perusasettelun ja toiminnallisuuden luomisen sekä ohjeet sisällön lisäämiseen toimeksiantajalle. Varsinaisen sisällön luominen ja sivuston hakukoneoptimointi ei ollut osa opinnäytetyötä.

Tämän projektin tulos on lähes valmis verkkokauppasivusto, joka voidaan siirtää verkkopalvelimelle ja konfiguroida. Kehitysprosessin aikana ilmeni jonkin verran haasteita kommunikaatiossa toimeksiantajan kanssa johtuen kielimuurista ja kulttuurieroista. Sivuston tavoitteet oli löyhästi määritelty, mutta opinnäytetyölle asetetut tavoitteet saavutettiin kuitenkin lopulta.

ASIASANAT: wordpress, sisällönhallintajärjestelmä, e-commerce, verkkosivu

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TIIVISTELMÄ

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LIST OF ABBREVIATIONS (OR) SYMBOLS

API	Application programming interface
B2B	Business to business transaction
B2C	Business to consumer transaction
BSD	Berkeley software distribution
CDA	Content delivery application
CMA	Content management application
CMS	Content management system
CPU	Central processing unit
DNS	Domain name system
ECM	Enterprise content management
E-commerce/EC	Electronic commerce
EULA	End user license agreement
GPL / GNU	General Public license
Linux	An open-source version of the UNIX operating system
Mac	Mackintosh
OSS	Open-source software
PHP	Hypertext pre-processor
SEO	Search engine optimization
SSL	Secure sockets layer
SQL	Structured query language
URL	Uniform resource locator
VPS	Virtual private server
WCM	Web content management
XAMPP	Cross-platform (x), Apache, MySQL, PHP, and Perl

1. INTRODUCTION

UBM FLOWBOARS is a Korean company that manufactures boards for flowboarding. The products range from standard sized to custom order boards with artistic graphics. Flowboarding is a hybrid watersport, which combines elements from skateboarding and surfing. The company needs a simple Ecommerce site for marketing and selling products.

The aim for this thesis is to review different content management system options and hosting service providers. In addition, the goal is to create the frame for the site with a suitable CMS, as well as instructions on how to add products and content to the site.

Chapters 1 through 5 contain general information about planning a website, CMS, Ecommerce, and web hosting services. Chapter 6 introduces the development environment for the site, including a description of the chosen platform and add-ons. Chapter 7 reviews suitable hosting service options for the site. Chapter 8 consists of instructions on how to add products to the site as well as instructions for translating the content. The last chapter is the conclusion of the thesis. The thesis is written for readers that are unfamiliar with terminology and conventions related to web design. The images in thesis are screenshots from the site's development environment.

2. PLANNING A WEBSITE

Putting some effort in the planning of the website of a company can save valuable resources such as time and money. A good start is to set the goals and aims, and figure out what is supposed to be achieved with the site. This could be followed by setting a budget for the project. Determining the target group for the site, and understanding what they are interested in, is another important factor to consider when planning a site. (King, 2017)

“Call-to-action” is a term used to describe what the desired action from a user is, when a user is visiting a specific site. Visitors should easily be able to navigate through the site in order to complete the call-to-action. The back bone of the site should be designed in a way, that the content and the structure matches the initial aims. (Team, 2016)

To make the site more visible, a good practice is to compile a list of keywords that will be used all through the website in order for the site’s ranking to go higher in search engines (SEO) such as Google. (King, 2017)

The above mentioned steps are common to all kinds of websites. There are certainly more steps to consider, depending on case specific aims.

3. WHAT IS A CONTENT MANAGEMENT SYSTEM (CMS)?

A CMS is a computer software application, or set of programs, that enables publishing, modifying, editing, removing, organizing, and maintaining content from a central interface. Commonly, a CMS consists of two aspects: the content management application (CMA) and the content delivery application (CDA). The CMA interface enables a content manager to create and manage the content. The CDA part of the CMS supports management and delivers the content that has been created in the CMA. (Srivastav, Nath, 2016)

CMS software is typically used for enterprise content management (ECM) and web content management (WCM). In the workplace, ECM systems usually provide functions like document management, digital asset management and records retention. Users are commonly assigned role-based access to the organization's digital assets. Web publishing functionality is often included in ECMs, but the webpages are often kept secure behind the organization's firewall. (Srivastav, Nath, 2016)

3.1. Open-source software

Open-source software (OSS) refers to software which source code is openly available to everyone. This means that OSS can be modified and distributed by anyone. OSS is often developed by communities instead of organizations. Open-source software is an outstanding example of open cooperation. Unlike in proprietary or closed source software, OSS creators create source code that is accessible to others who can view the code, learn from it, copy it, change it, or contribute to it. Because of the free nature of OSS, there is usually no technical support for the software. Users often have to rely on web forums and discussions to get answers to questions. OSS is typically a lower in cost choice compared to proprietary systems which are built, preserved, and usually hosted by a single company. (Nyman, 2015)

3.2. GPL license

General Public License (GPL) is a license dedicated to Open-source software. If one software is licensed under the terms of the GPL, it is free. However, free does not necessarily mean freeware, it can also be a paid software. As the advocator of GPL proudly announced, when claiming free software, it refers to freedom, not price. (Uzayr, 2016)

GPL grants users the freedom to alter and share software in whatever way they need to. Unlike proprietary or closed source licenses, GPL does not look for appointing limitations and restrictions on the freedom of users. GPL allows altering the software as the users desire, share and distribute the software, and even change the product. In contrast to GPL licensed software, closed source software is usually accompanied by the End User License Agreement (EULA). The EULA provides customers with a non-exclusive license to use one copy of the software, and the users do not get permission to change, adjust, distribute, and so on. (Uzayr, 2016)

The GPL license exists to protect the freedom of software developers and customers. Furthermore, there is several other open-source licenses, of which some claim to propose even more freedom than GPL (such as Mozilla Public License, BSD License, Apache 2.0 License, etc.). (Uzayr, 2016)

3.3. Open-source WCM

Open-source WCM platforms are often favored by small companies that are looking for something fundamental and affordable. There is a wide supply of add-ons to various WCM platforms available to users, so that sites can be personalized and upgraded with additional functionality. Some of the very well-known and broadly used open-source WCM systems are WordPress, Joomla and Drupal. These platforms are based on PHP and SQL database technology. (Srivastav, Nath, 2016)

3.3.1. WordPress

Released in 2003, the WordPress Open-source CMS dominates the global CMS industry. Originally WordPress was designed for blogging, but has evolved to be the easiest-to-install and user-friendly CMS for websites of all sizes. WordPress offers much of the advanced functionality in the form of plugins. There is a huge supply of free and paid themes, plugins and widgets available for this popular platform. The WordPress installation process is simple, and can be done in minutes. Many WordPress hosting providers have a one-click installation option for the platform, which makes it relatively easy for users to set up. (Mening, 2018)

A WordPress site's visual appearance can easily be changed using themes. WordPress has a few default themes pre-installed out of the box. Additionally, there is a wide range of addable free and premium themes in the official WordPress.org theme directory, as well as from other third party theme developers. (TechTerms, 2019)

The main perk in using WordPress platform lies in the huge amount of available plugins. This is probably also the reason for the platforms popularity. There are over 50,000 plugins to add functionality to the site available in the official WordPress plugin directory. Premium plugins are also available and come with paid support service from the plugin developers. (Mening, 2018)

Another perk and reason for the popularity of WordPress is the simplicity of the user interface. Managing the site can be achieved by simple mouse clicks to a great extent.

3.3.2 Joomla!

Joomla is the second most popular Open-source CMS on the market. The CMS is an offshoot of the Mambo web CMS, and was launched in 2005. A fresh Joomla installation includes comprehensive CMS functions without the need for any add-ons. The installation and setup process is fairly straightforward, but takes slightly longer than WordPress. Joomla is considered to be the middle ground between WordPress and Drupal when it comes to need of tech skills from users. The platform is less user-friendly than WordPress, yet not as developer-oriented as Drupal. (Mening, 2018)

Similar to WordPress, Joomla comes with templates and extensions. There are good extensions available for adding functionality to the site, however, the quantity of these templates and extensions is significantly lower than that for WordPress. Some of the plugins available only function with specific scripts, thus installing some plugins and extensions simultaneously may cause problems. (Mening, 2018)

Joomla can be used for creating any kind of website, blog or E-commerce website. There is community-supported documentation and user forums available for support. (Mening, 2018)

3.3.3. Drupal

Drupal has been around since 2001. Drupal is considered to be the most powerful Open-source WCM platform available. This CMS is much more developer-orientated compared to WordPress and Joomla, and is not considered a suitable choice for users that are not skilled in web coding. (Mening, 2018)

The installation process is similar to both Joomla and WordPress. The post installation part is more complicated to users without proper tech skills. Users often experience difficulty with making changes to the site. In the user interface, it is fairly obvious how to add content, but making changes to appearance and adding non-content elements is more complicated. (Mening, 2018)

There are extensions and modules available for adding almost anything to the site, yet the overall quantity of options is much lower when compared to options for WordPress. The installation of add-ons is similar to Joomla. Unlike WordPress, where add-ons can be installed directly from the dashboard, users have to leave the site, find the add-on they want for their site, locate the project's zip file URL, and enter the URL in the modules or themes page to install them. (Mening, 2018)

Drupal is a developer-friendly tool, which requires some tech knowledge and experience to operate. However, Drupal is also capable of producing very advanced sites, and is good for sites that require complex data organization. (Mening, 2018)

Table below shows the comparison between three different CMS platforms. The table compares CMS market share, installation, ease of use, design, and functionality between WordPress, Joomla, and Drupal. The below table shows WordPress platform superiority in several aspects.

The ease of use and wide range of available add-ons are the main factors for choosing WordPress as a platform for this project. (Table 1)

CMS	WordPress	Joomla!	Drupal
CMS market share	58.9%	7.0%	4.7%
Installation	One-click Install / manual installation within 5 minutes	One-click Install / manual installation within 10 minutes	One-click Install / manual installation within 10 minutes
Ease of use	Beginner-friendly (5/5)	Fairly beginner – friendly (4/5)	Requires coding skills (3.5/5)
Design (Themes and Templates)	4500+ Official FREE Themes & 9500+ Premium Themes at ThemeForest https://themeforest.net/category/wordpress	NO Official Template Directory, 950+ Premium Joomla Templates at ThemeForest https://themeforest.net/category/cms-themes/joomla	2000+ Official Drupal Themes & 450+ Premium Drupal Themes at ThemeForest https://themeforest.net/category/cms-themes/drupal
Functionality (Plugins and Extentions)	50,000+ Official FREE Plugins https://wordpress.org/plugins/ (Thousands of Paid Plugins on the web)	7500+ Official Extensions https://extensions.joomla.org/ (FREE+Paid)	37,000+ Drupal Module at Official Directory https://www.drupal.org/project/project_module

Table 1. Comparison of three different CMS platforms. The table was published in January 2019. (Rai, 2019)

3.4. Themes, templates and plugins

Themes, templates and plugins are essentially add-ons to the core CMS platform. They are used to change, enhance, add, or remove functionality from the core software. Themes and templates refer to the same thing, depending on which CMS is used. These are mainly used to alter the visual appearance of a site as well as for adding additional functionality to the platform and site. Plugins also offer extended functionality to the CMS platform and site. (Powell, 2019)

The line between themes and plugins might seem blurred at times, since some plugins affect the appearance, and themes often affect the functionality as well. A wide range of add-ons for a CMS platform makes it highly customizable. (Powell, 2019)

4. E-COMMERCE

The procedure of purchasing and trading electronically, such as through mobile applications and on the Internet, is described as E-commerce. E-commerce deals with electronic transactions and online retail as well. E-commerce enables trading of products and services worldwide and around the clock, without having to deal with challenges or problems that might occur in a traditional store. (ecommerce platforms , 2019)

Some examples of different types of E-commerce are as follows: online banking, online reservations, online auction sites, business to business (B2B), and business to consumer (B2C) transactions. (ecommerce platforms , 2019)

The expansion of E-commerce has broadened the range taking place on mobile phones as well, which is recognized as m-commerce. This is due to the fact that, internet has gotten deep-rooted in people's daily lives, and it leads to rapidly growing recognition of E-commerce. (Bhat, Kansana and Majid, 2016)

5. WEB HOSTING SERVICE

Web hosting services enable websites and web pages to be published on the Internet. In order for a website or webpage to be viewable on the Internet, it needs to be stored on a live server. Servers are special computers on which websites are hosted, or stored. When Internet users want to view a website, they can type the domain, or address of the website, into their browser. Their personal computer will redirect them to the server and the pages will be delivered to them through the browser. (Cohen et al., 2014)

There are four main types of hosting: shared, Virtual Private Server (VPS), dedicated and cloud hosting. Each of these types have their own advantages and disadvantages. It's good to understand the differences between the types in order to choose the best option for any specific site. (Cohen et al., 2014)

5.1. Shared hosting

Many sites are stored on the same server, and all share the resources including central processing unit (CPU) time, memory and disk space. Shared hosting is the cheapest alternative, however it's also the most restricted one. This is a suitable hosting type for smaller sites with light traffic. (Cohen et al., 2014)

5.2. Virtual Private Server (VPS) hosting

This type of hosting is similar to shared type in the sense that several sites share the same server. The main difference is that there is a smaller number of sites sharing the space and resources and the server is partitioned into separate virtualized environments. VPS hosting also commonly offers guaranteed baseline resources to customers, and have additional resources available in case a site experiences a spike in traffic. (Cohen et al., 2014)

5.3. Dedicated hosting

This type of hosting means that a server is exclusively dedicated to a site. A site does not share the server with others, and has all the resources of the server available. The hosting environment can be configured to the sites exact specifications. (Cohen et al., 2014)

In general, dedicated hosting costs more but offers high performance as well as a higher level of security when compared to other hosting types. Dedicated hosting is suitable for large sized businesses and sites with a lot of traffic. (Cohen et al., 2014)

5.4. Cloud hosting

This hosting type is based on cloud computing technologies. This enables several servers to work together as one system. Instead of a site being hosted on one server, it can be hosted on a virtual partition of a server, and the site is provided with resources from a network of actual servers. The site shares resources with other sites, but due to the higher number of servers, there is also more resources available. (Cohen et al., 2014)

Cloud hosting is a reliable option, because if a server crashes, the other servers in the network can compensate. It is also considered a flexible and scalable type of hosting since it is easy to add resources if needed. (Cohen et al., 2014)

5.5. Domain name

A domain name is unique and identifies a specific site on the Internet. Domain names function as addresses for sites, and are needed for the sites to be accessible. The domain name appears in the web browsers address bar, whenever a site is visited. The name is often preceded by "www", however, this is not part of the domain name. A domain name also comes with a suffix, to help identifying what kind of site is in question. Some common suffixes are .com, .net, and .org. Country codes are also often used, such as ".dk" (Denmark) or ".se" (Sweden), to identify the location and target group of the site. (Web Hosting Explained, 2014)

When a site is visited, the domain name is translated into an IP address. This address points to the server where the site is stored. The dynamical translation is performed by a service know as Domain Name System (DNS). Domain names are available for anyone to purchase. When a domain name is registered, it`s owned by the buyer until the renewal period expires. If the registration is not renewed in time, the domain name becomes available again. A domain name is required by most hosting service providers, in order for them to host a site. Many hosting service providers offer domain names in addition to hosting plans. (Cohen et al., 2014)

6. DEVELOPMENT ENVIRONMENT

For this project, a locally-hosted development environment was set up using a popular open source web server program named XAMPP, and WordPress CMS. XAMPP stands for Cross-platform (x), Apache, MySQL, PHP, and Perl, and enables easy installation of these elements. Cross-platform means that the program is compatible with Windows, Mac, and Linux based computers. PHP programming language and MySQL database management software are both required to run WordPress. (Revel, 2018)

Creating sites locally is a quite common practice among web developers. Doing it locally enables safe testing of features and functionality, on a site that is completely private. Creating a site locally is also a cheap alternative, since it does not require a domain name or a hosting service. (Ganesan, 2017)

The frame for the site was created with WooCommerce, which is an E-commerce plugin for WordPress. Since the goals and requirements for the site were very loosely determined, WordPress seemed like a good general purpose platform. Because of its high customizability and wide range of available add-ons, a WordPress site can also conveniently be changed or updated in the future, if new goals appear. The platform's user-friendliness makes it relatively easy for anyone, regardless of tech-knowledge level, to manage the site.

6.1. Selected theme and plugins

Shop Isle theme was the theme of choice for the framework for this project. The frame for the site was built on a child theme of shop isle, in order to avoid future problems that might occur with theme updates. Code customizations in parent themes will automatically be canceled, when the theme is updated. (WordPress.org, 2019)

Shop Isle was chosen due to its responsiveness, flexibility and full compatibility with WooCommerce. Since the requirements for the site is loosely determined by the commissioner, shop Isle is a good alternative. It has a simple and elegant style which works for almost any type of shop. The free version of the theme comes with several functions that are useful for the site. (themeisle, 2019)

Features and functions included in the theme:

- Custom templates for “About Us” and “Contact” pages
- User friendly customizer interface
- Built in “privacy policy” and “Terms and conditions” pages
- Social sharing module so visitors can share the site on social media
- Compatibility with several translation plugins
- Light weight and SEO friendliness (themeisle, 2019)

The following plugins were installed for additional functionality.

- TranslatePress, a multilingual plugin was installed and setup for translation functionality. This is a free plugin that enables the site to be translated manually in a convenient and easy way.
- Contact form by WPForms, the plugin was installed for easy customization of the contact page. WPForms is a drag and drop form builder, that can easily be embedded in the “Contact” template of the theme using a short code.
- Naver Pay plugin, this is an additional payment gateway plugin for a commonly used payment service in Korea. (WPForms, 2019)

6.2. Payment gateways

WooCommerce comes with many integrated payment options right out of the box. The plugin does not charge anything for the transactions. For businesses registered in Korea, WooCommerce offers the following payment options:

- Direct bank transfer - Payment via direct bank transfer
- Check payments - Payment in person via checks
- Cash on delivery - Payment in cash (or by other means) on delivery
- PayPal Standard - Redirects to PayPal for entering payment information (DOCS, 2019)
-

6.2.1. PayPal standard

The PayPal gateway is one of the most recognized and widely used. Setting up the PayPal option requires a PayPal business account. The application programming interface (API) information from the account is needed in order to make it possible to receive payments. However, customers do not need to create an account to be able to purchase through the gateway. PayPal offers the option of paying directly with various major credit cards such as Visa, MasterCard, American Express and Discover. This payment option will redirect the customer to a PayPal online portal where the transaction is handled. PayPal charges a transaction fee that varies depending on the type of account, the volume of sales and where the funds come from. A fee will also be charged for currency conversion. More information about merchant fees can be found at PayPal's official website. (PayPal, 2019)

6.2.2. Naver Pay

The Naver Pay gateway is similar to PayPal, and the plugin requires a merchant account in order to be setup and configured. Naver Pay is a popular payment option in Korea, and this gateway was requested by the commissioner. Naver Pay enables customers to pay online with a Naver ID. (CodeMShop, 2019)

A Naver ID can be obtained by registering a credit card or bank account with the portal. Using the Naver Pay option also redirects the customer to a third party online portal. The owner of the E-commerce site does not need to worry about processing, authorization, or security issues as the payment service provider handles it all. Naver has partnered with several Korean banks and credit card companies in order to be able to provide the payment service. (CodeMShop, 2019)

There is over a hundred additional payment gateways available for WooCommerce sites. They come in the form of plugins, and can easily be added later on if needed. The target market and audience for the site has not been defined. (woocommerce.com, 2019)

7. HOSTING SERVICE OPTIONS

Choosing a good web hosting service is crucial for an E-commerce site. The following criteria was set for the service:

- Speed, the average load time for sites needs to be on a good level
- Uptime, a measure for the time that a server has been up and running. This is usually shown as a percentage, and should be close to 100%
- Free secure sockets layer (SSL) certificate with hosting plan. Non-SSL certified sites are shown as “Not Secure” in Google searches. This is bad for business. Most payment gateways also require SSL certification
- One-click installation for WordPress. This makes it easy to setup the core platform and enables easy migration of site from development environment
- Customer Support, the support should have a good reputation, and be available 24/7
- Price, good value for money
- Money back guarantee incase the choice turns out to be unsatisfactory

(Mening, 2019)

The following hosting service providers offer plans that come with all the above mentioned features. These providers offer convenient upgrading of the hosting plans, incase more resources are needed. The hosting services are also considered good options for E-commerce sites that sell internationally.

Bluehost is a popular option among small business owners. Over two million sites are hosted by Bluehost. The hosting service has strong uptime and load time, and offers affordable yet reliable hosting plans. All hosting plans come with a free domain. The domain name stays registered as long as the hosting plan is not expired. Bluehost is officially recommended by WordPress.org. (Mening, 2019)

SiteGround is a large hosting service with over 800,000 domain names worldwide. The hosting service is also known for solid uptimes and loading times. The hosting plans offer good value for money, although the plans does not come with a free domain. The domain needs to be purchased separately. A hosting plan can also easily be updated, if necessary. SiteGround is another hosting service provider officially recommended by WordPress.org. (Mening, 2019)

8. INSTRUCTIONS FOR ADDING PRODUCTS

Adding products to the site with WooCommerce and shop isle theme is a fairly easy. For this site, an example product was created, and set to private. This means that the product is only displayed when the site is managed. To further simplify the procedure of adding a product, the pre-created and example product can be duplicated and modified. Since the site only has one product category and the products are very similar, the same preset settings apply to most of the products. Once the duplicate has been modified and saved, it can be set to public, in order to make it visible on the site. To add multiple products, the procedure can be repeated. (WooCommerce.com, 2019)

In order to add a product, the user needs to be logged in to the Dashboard (back-end) of the site. On the left side of the dashboard there is a “products” option. Clicking the “products” link shows a list of all products created. Under the example product in the list, there is a “duplicate” option. Selecting this will create a duplicate of the example product. (Figure 1)

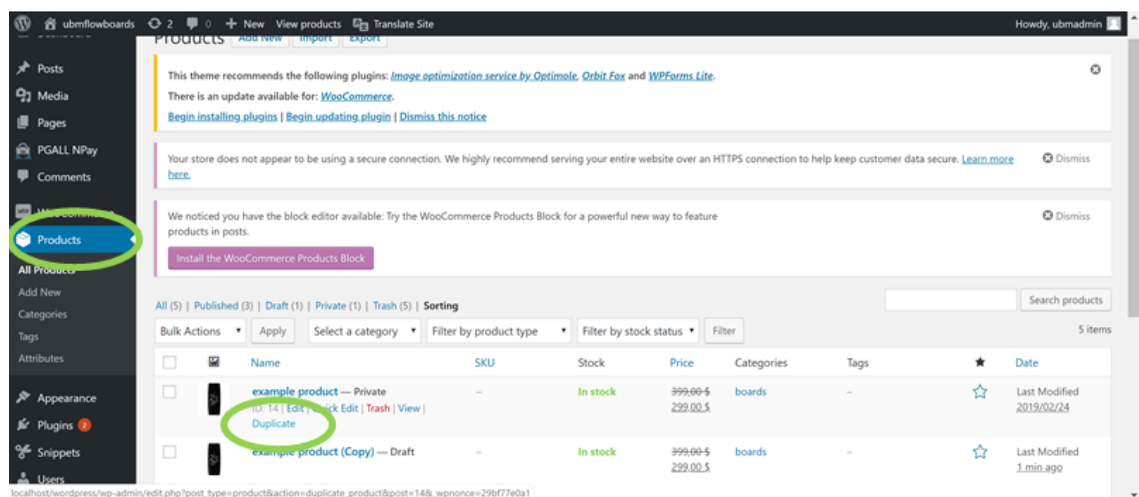


Figure 1. Adding products. This image shows the user interface, and highlights the options for adding and managing products as well as for duplicating them.

Selecting the duplicate option opens a product editing interface for the copy. The new product can be renamed by simply changing the “example product (Copy)” title to the actual product name. (Figure 2)

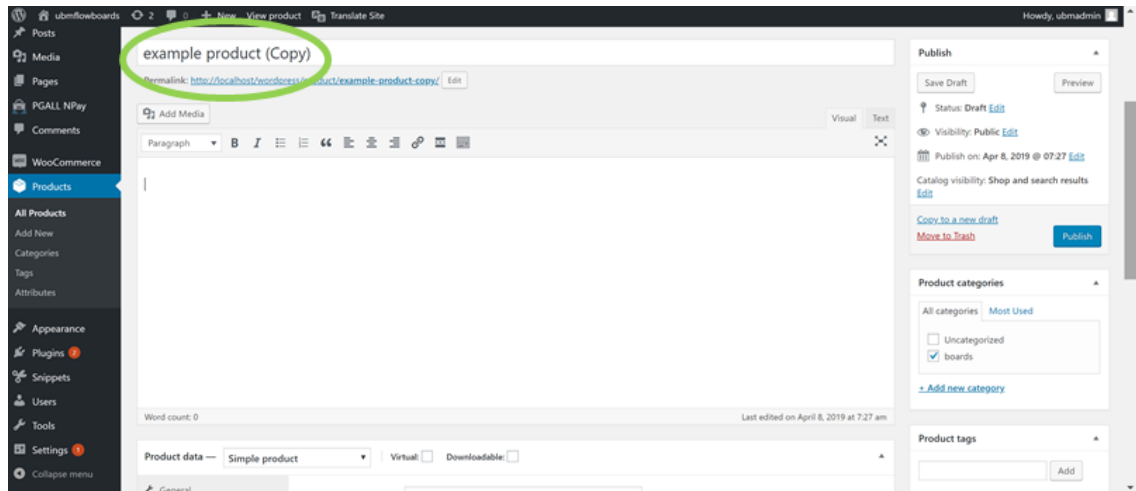


Figure 2. Duplicating products. This image shows the product title that can be changed.

The product data box on the edit interface enables setting product specific details. The price and possible sales price (and the time period for the sales campaign) can be set under the general tab of the box. The currency has been set to US dollars by default, since no further instructions have been provided by the commissioner. (Figure 3)

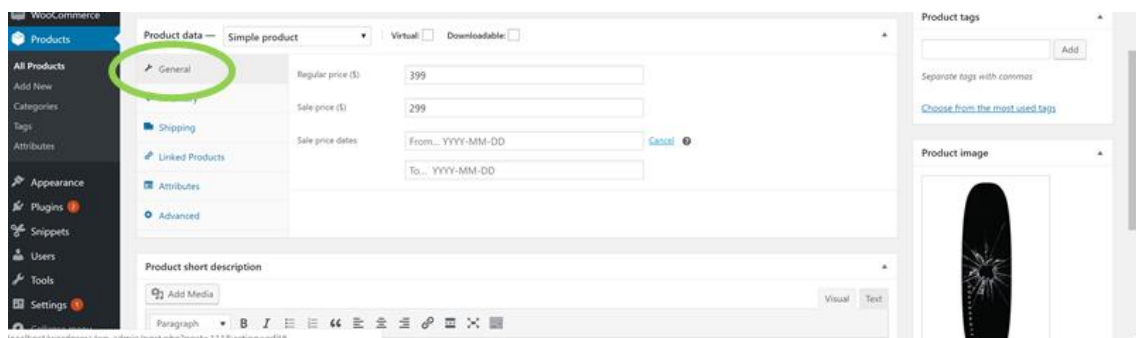


Figure 3. General tab in products. This image shows the editing interface tab where product specific details can be added.

The dimensions (length, width, height) and weight (kg) of the product can be set under the shipping tab. These will be displayed under the product description on the site. (Figure 4)

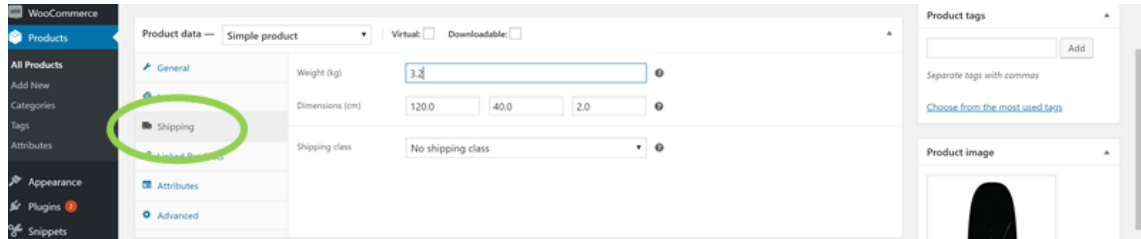


Figure 4. Shipping tab for products. This image shows the editing interface tab where product dimensions and weight can be added.

Lower down on in the product editing interface is a box for a short product description, which will be displayed once a visitor selects a product from the front page catalogue of the site. The example content in this box can be deleted and replaced with a product description. (Figure 5)

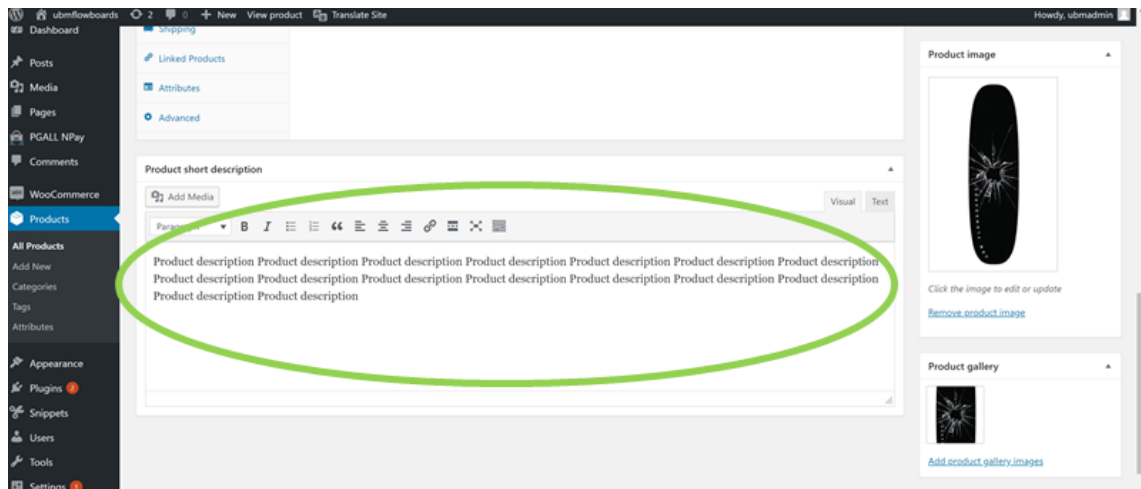


Figure 5. Product description. This image shows the box where the product description can be added.

There are two boxes for adding product images on the right side of the editor. One for product image and another for product gallery image(s). The procedure for adding images is the same in both cases. The product image will be displayed once the product is selected on the site. The gallery image is displayed in the product gallery on the front page of the site. The product image can be updated by clicking on it in the editor. The recommended size for gallery images is 262px width x 325px height. The aspect ratio for product images has been set 20:25. (Figure 6)

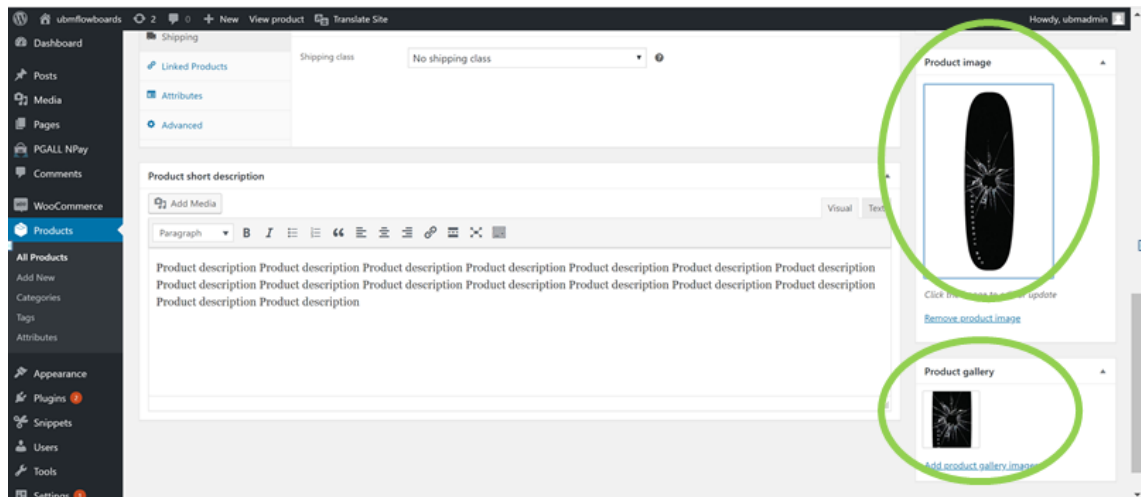


Figure 6. Product images. Above image highlights the boxes where the product and gallery images are displayed in the user interface.

Clicking the image opens the sites media library. An image can be uploaded to the library through the “Upload Files” option in the upper left corner of the library. This enables browsing to and selecting an image from the computer, and adding it to the library. Once the new image is in the library, it can be set as the product image by selecting the image and clicking the blue “Set product image” button. (Figure 7)

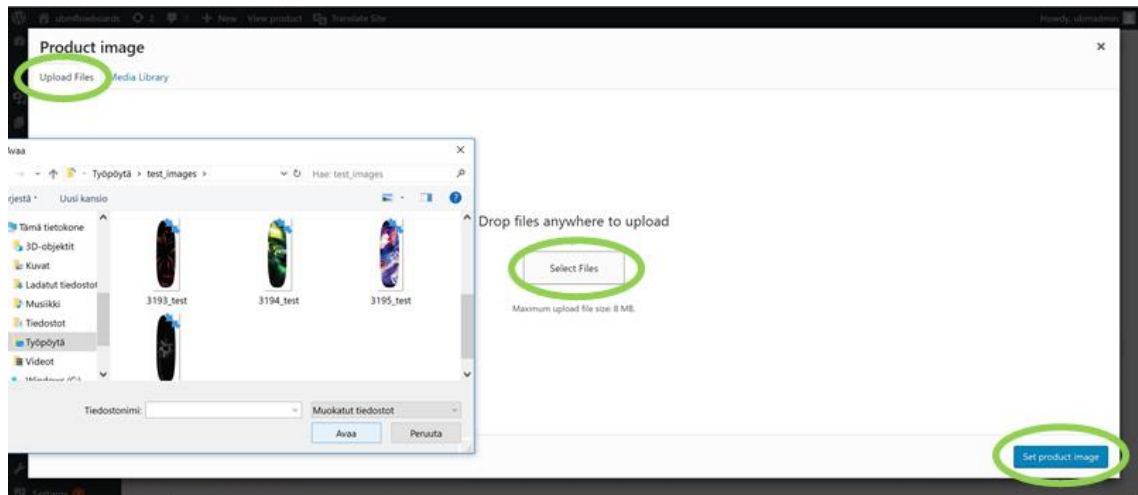


Figure 7. Adding product image. The image highlights the steps for setting a product image.

Adding product tags is optional, however it is strongly recommended considering the visibility of the site. Search engines use tags for information about the site. This can help a site to get a better position in search engine results.

There is a “Products Tags” box in the editor for adding descriptive labels for products. The tags will be displayed under the product description. (Figure 8)

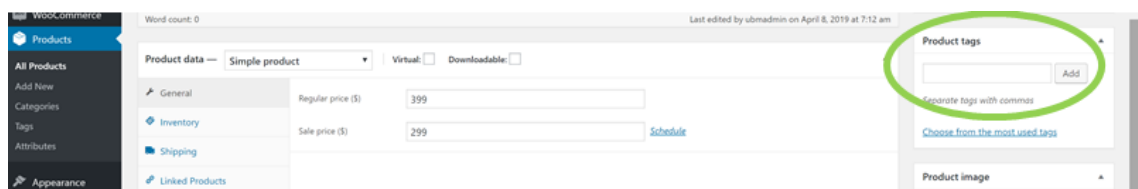


Figure 8. Product tags. The image highlights the container where descriptive labels can be added.

Once all changes have been made to the new product, it can be published by clicking the blue “Publish” button on the right side of the editor. Products that are created from duplicates of the example product will automatically be set to public. This means that the product will be visible to everyone visiting the site once published. (Figure 9)

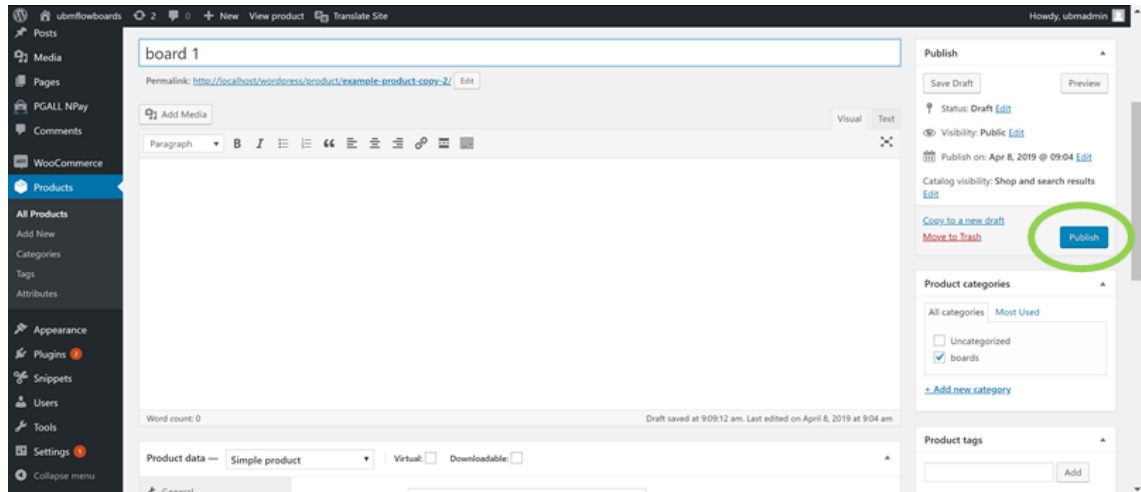


Figure 9. Publishing product. Image highlights the button for publishing product.

The products will be displayed in a catalogue on the front page. The catalogue is set to display four products in a row when viewed on a computer. In tablet and smart phone view there is two products in a row. Several rows will be lined up vertically, depending on how many products there is. The site can also be set to display products on several pages, if the number of product becomes high. An estimate of the amount of products for this site has not been determined. (Figure 10)

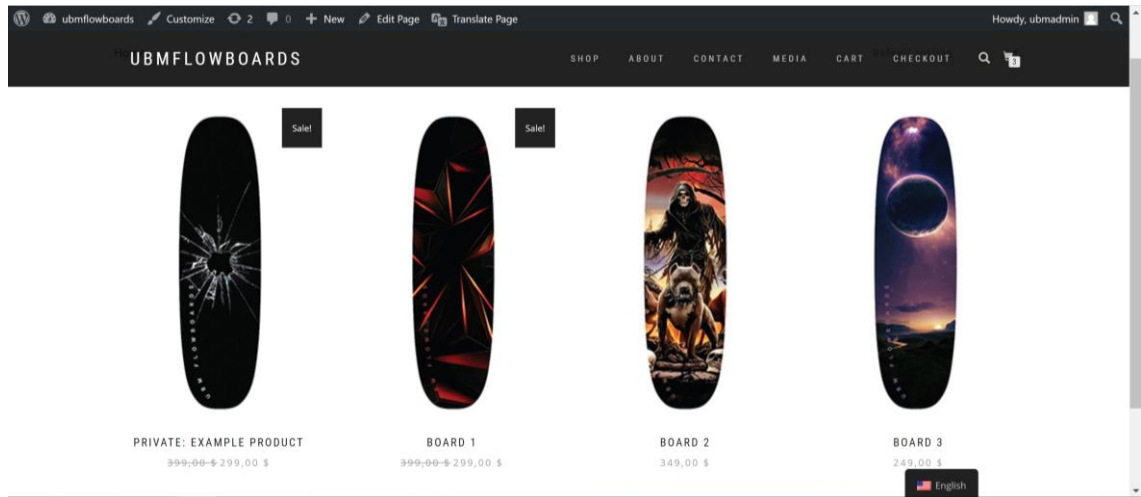


Figure 10. Product catalogue. The image shows the front page of the site, displaying a product catalogue.

8.1. Translating content

TranslatePress – multilingual is a free WordPress plugin that offers an easy and convenient way to create bilingual sites. There is also an additional plugin for creating multilingual sites available for the premium version of the plugin. The plugin is fully compatible with WooCommerce, and enables users to translate any text content manually on the site directly from the front-end. Like many other translation plugins that rely on translations from google translate, TranslatePress also offers a google translate integration. However, this type of translation is usually inaccurate and often poor in quality. (Wordpress.org, 2019)

Once the plugin is installed and set up, a new “Translate Page” option will be added to the top tool bar on the front-end of the site. Once the plugin is setup correctly, the interface makes it easy to translate anything on the page. (Wordpress.org, 2019)

The TranslatePress plugin was chosen for this project due to its ease of use, as well as because the free version offers all the necessary functions for this project. The plugin was installed and set up so that the default language is English. Visitors of the site will have the option to switch the language to Korean, once the content has been created and translated. (Wordpress.org, 2019)

To translate a page the user needs to log into the WordPress Dashboard, and go to the front-end of the site. In the upper left side of the Dashboard, there is a link with the name of the site. Clicking this link will change the view to the front end of the site.

The “Translate Page” option, in the tool bar at the top, opens the TranslatePress editor interface. (Figure 11)



Figure 11. Translate page menu. The images highlights the translate page option, in the front end tool bar.

In the editor interface, the user can select any text element on the page, by clicking the blue pencil icon next to it. Once an element is selected, it can be translated at the left side of the interface. The default language is displayed in the gray box. The translation is written in the box underneath (in this case the one which says “To Korean”).

Once the translation is written, it can be saved by clicking the blue “Save translation” button on the top left side of the interface. This will instantly save the translation to the site. (Figure 12)



Figure 12. Adding translation. The image highlights the steps for adding and saving translation to site.

Once saved, the language can be switched from the language switcher displayed on the site (the example content was translated using google translate). To translate the whole site, every element needs to be translated separately. (Figure 13)

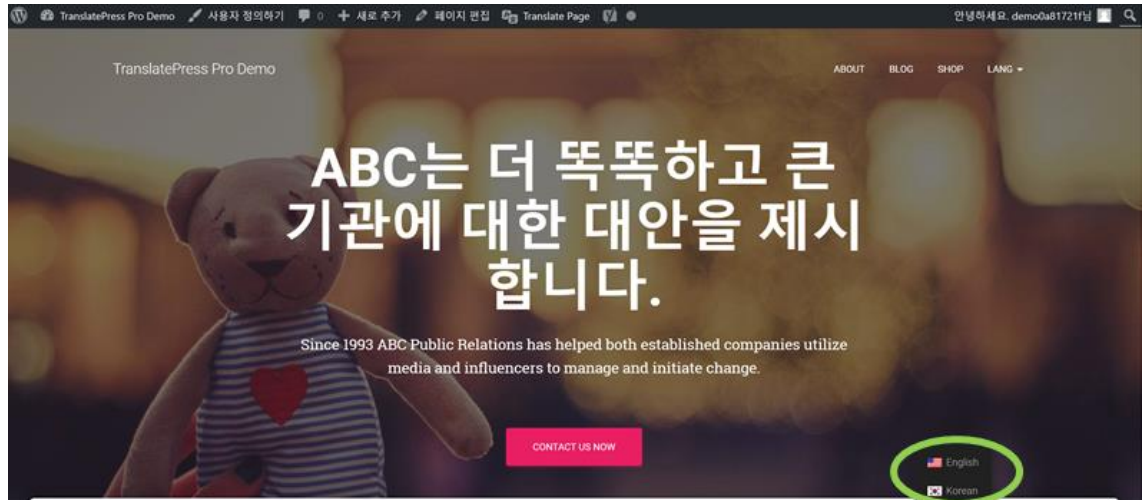


Figure 13. Language switcher. The image highlights the language switcher on the front end of the site.

9. CONCLUSION

The scope for the thesis included creating the basic layout and functionality for an E-commerce site, and providing the commissioner with instructions on how to add content. The goals set for the thesis were eventually met, even though the needs and goals from the commissioner's side were unclearly defined.

The site frame was created with WordPress and WooCommerce, which is a good general purpose option. It should be mentioned that the approach in this thesis is just one alternative for this kind of project.

In addition to this report, the result of this project is a simple E-commerce site with sample content that can be migrated to a hosting server and configured. No actual content has been provided yet, except for some random images.

There were some challenges with the communication during the development process due to language barrier and cultural differences. It is not uncommon that needs and goals are not clearly determined, and this gives the web designer an opportunity to introduce ideas and suggestions. In this case, however, most messages and suggestions did not receive any replies or comments. The project was also lagging behind schedule at times due to the poor level of communication.

It was agreed in the beginning of this project that the author would guide the commissioner through the process of setting up the site and configuring it, once a hosting service and domain name has been purchased. This will most likely not happen in the near future since the site is still missing most of the actual content. The payment gateways also require accounts to be opened in order to be configured.

Setting up the site is a fairly straight forward process, if the chosen hosting service provides a one-click installation for WordPress. The site can be transferred manually, or utilizing a migration plugin such as Duplicator.

In order for the post thesis co-operation to work, there needs to be a significant improvement in the communication between all parts involved in the project.

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