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Developing an e-commerce Website for Spicetown Oy, using Drupal.

Inegbedion, O.U.

2015 Leppävaara

Laurea University of Applied Sciences
Leppävaara

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Inegbedion, O.U.
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This project is aimed at creating a website to be used for e-commerce by Spicetown Oy, a wholesaler of African and Asian food products based in Helsinki. Spicetown Oy is a traditional brick-and-mortar business in the process of transitioning into a business model combining traditional business carried out on physical premises with running an online shop. The main aim of this project is to design and build a website with an online store for Spicetown Oy. The website is implemented using Drupal, a Content Management System, to make it possible for the website to be managed and administered by people with basic technical ability. This thesis report documents the theoretical and practical steps taken to research and build the online shopping website.

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1 Introduction

The e-commerce industry has been growing steadily and in Finland this growth was nearly 9% in 2013 as Finnish consumers spent 10.5 billion euros to purchase goods and services online. These are figures released by TNS Gallup based on a consumer survey and can be seen in Figure 1. This development coupled with the rapid advancement of internet technologies and other digital communication devices is leading many small and medium scale enterprises to integrate e-commerce platforms into their business systems as a means of reaching more potential customers. 'Bricks and Clicks', which is a type of business model that combines traditional business carried out on physical premises and internet trading (The free dictionary 2014), will become the retailing norm of the future, with every retailer expected to have a hybrid business model by 2025 (PR Newswire 2012 cited in The free library 2014). A website is the easiest way for businesses to advertise their products and services, increase their reach and visibility to potential customers and since it can be accessed at virtually anytime, customers can make purchases any time they want.

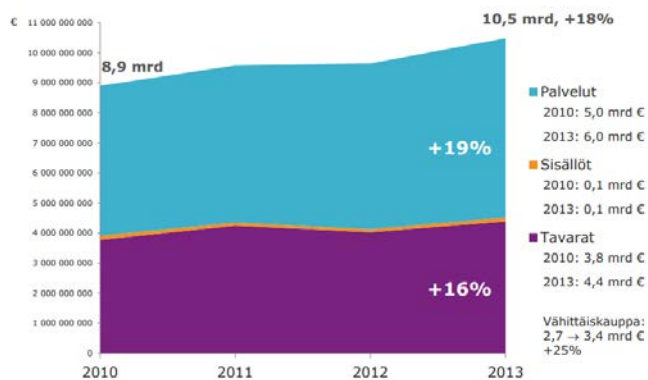


Figure 1: The growth of Ecommerce in Finland (TNS Gallup, 2014)

1.1 Background

Spicetown Oy as a wholesaler and retailer wants to reach more customers and increase its sales and revenue and find new avenues for growth. This project is based on finding solutions to these concerns raised by Spicetown Oy and it is an alliance between this author and the stakeholders of Spicetown Oy (proprietors, staff and customers). The task of this author is to harness the ideas and requirements of these stakeholders by means of interviews and questionnaires and translate them into a dynamic website designed to meet the needs and aspirations of Spicetown Oy and its stakeholders.

1.2 Client

Spicetown Oy which is located in Mekaanikonkatu, Helsinki is one of the largest wholesalers of foreign food, mainly African and Asian, in Finland. It owns two retail stores in the Greater Helsinki area, one in Hakaniemi and the other in Leppävaara. Its clients are mostly other retailers of foreign food located in different areas of Finland. Spicetown Oy is aiming to add an online store to their already existing retail stores.

1.3 Objectives, Scope and limitations

The main aim of this project is to design and build a website with an online store for Spicetown Oy. Spicetown Oy as a wholesaler intends to market its goods and services to current and potential retail customers in the Finish hinterland. A website that allows customers to purchase and review products without time constraints and at their own convenience will allow Spicetown Oy to achieve its aim of targeting new customers currently living within and without the metropolitan area who can order products and services which will be delivered to them. The proposed website will also serve as a catalogue to current and prospective suppliers to help them identify precisely the products they are asked to supply.

Another objective of this project is to design and implement a website using a content management system (CMS) which can be manipulated and updated regularly by employees of Spicetown Oy having little or no technical skills.

1.3.1 Scope

The scope of this project is as follows:

- I. Extract and analyse relevant information and customer requirements from Spicetown Oy and its stakeholders as inputs to be used in the design of the website.
- II. Benchmark existing websites of similar businesses based in Finland
- III. Design and implement a website using content manage system in this case Drupal.
- IV. Educate employees of Spicetown on the use and deployment of completed website.

1.3.2 Limitations

One of the limitations faced during the course of this project is the time constraints faced during the scheduling of meetings and interviews with stakeholders of Spicetown Oy. Most meetings had to be rescheduled due to the busy nature of the interviewees.

Another limitation faced is the lack of sufficient data from the websites used in the benchmarking.

The limitations endured and cited above were insufficient to prevent the execution and conclusion of this project to meet the desired expectations of the clients of this project.

1.4 Thesis Structure

This thesis report consists of different chapters. The first chapter introduces the project, the reasons for the project, the project client and the objectives, scope and limitations of the project. The second chapter looks at the research approach and methodology and the knowledge base and theoretical background of the project. The third chapter deals with the implementation of the project and depicts the progression of the project of the project through three key phases and the reasons why this project is utilising the Drupal software. The fourth chapter will examine the modules used in creating the website and the functionality of the website. The fifth chapter will be the concluding chapter of the thesis and it consists of the evaluation of the project, suggestion for future development and the conclusion.

2 Research Approach and Methodology

The constructive research approach will be used during the course of this thesis. "The constructive research approach is a research procedure for producing innovative constructions, intended to solve problems faced in the real world." (Lukka n.d.). This main reason for using this approach is because this project is based on designing and implementing a website to be used as a business strategy to achieve certain business goals. (Oyegoke 2011, para.4) states that a "Constructive research [is] aimed at producing novel solutions to both practical and theoretical problems. Solutions are often suggested through managerial problem-solving techniques through the construction of models, diagrams and plans." The peculiarities of this thesis project justify the use of this research approach since the main features of a constructive research approach demand that it:

- focuses on real-world problems felt relevant to be solved in practice,
- produces an innovative construction meant to solve the initial real-world problem,
- includes an attempt for implementing the developed construction and thereby a test for its practical applicability,
- implies a very close involvement and co-operation between the researcher and practitioners in a team-like manner, in which experiential learning is expected to take place,
- and is explicitly linked to prior theoretical knowledge, and pays particular attention to reflecting the empirical findings back to theory (Lukka 2000, cited in Lukka n.d.).

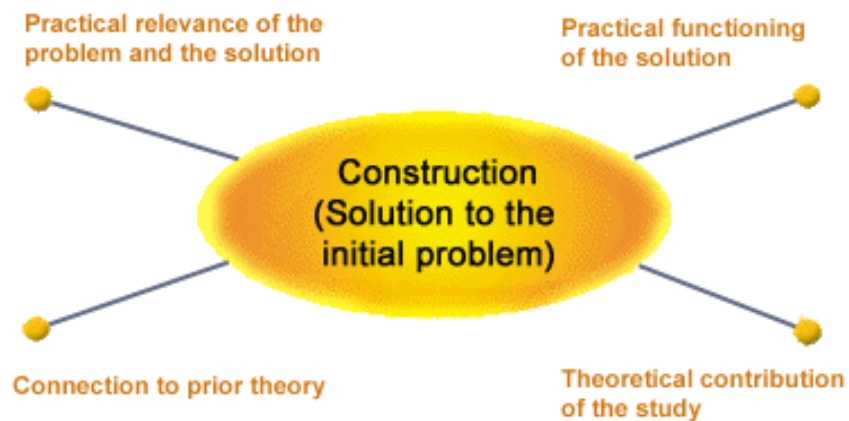


Figure 2: The fundamental elements of the constructive research approach (Lukka n.d.)

2.1 Research Methodology

The methodology used in this research is a combination of various tools used to gather data. Due to the nature of this project different techniques have been employed to extract data, ranging from qualitative (interviews), quantitative (questionnaires), benchmarking and the reliance on relevant texts for theoretical knowledge. Using mixed methods is appropriate in this case study and it is also advantageous because “they provide opportunities for triangulation of data” (Patton 2012, cited in Crouch & Pearce 2012, 129). The various methods that have been used in this project are as follows:

- I. Interviews with the proprietor and employees of Spicetown Oy.
- II. Survey conducted by means of questionnaires sent to selected customers of Spicetown Oy.
- III. The benchmarking of similar websites (www.kairali-foods.com, www.dfh.fi). “A benchmark is a standard of performance” (Hope & Player 2012, 87). The idea of benchmarking is to enable firms to measure their performance with the prevailing best practices in the industry or sector; it involves the detailed analysis of the activities and practices of companies deemed to be the best at performing those activities or practices (Hope & Player 2012). To have an idea of the current practices and general convention surrounding the design and feel of similar online retail websites in Finland, selected components of these websites are compared and contrasted with the current standards of web design.

- IV. The utilisation of Drupal development methods and web design techniques and the consultation of relevant texts written on Drupal in particular and web design in general.

2.2 Knowledge base/ Theoretical Background

This project will be implemented using a content management system (CMS), “which is a software package that provides tools for authoring, publishing and managing content on a website” (Tomlinson 2010, 1). There are different types of content managing systems like Joomla, WordPress, Drupal, etc. The choice of content managing system in this project is Drupal.

Drupal is “a free and open source CMS written in PHP and distributed under the GNU General Public License.” (Tomlinson 2010, 2), written by Dries Buytaert, a Dutch student, as a message board, Drupal became an open source project in 2001 and “It is used as a back-end framework for at least 2.1% of all Web sites worldwide ranging from personal blogs to corporate, political, and government sites including WhiteHouse.gov and data.gov.uk. It is also used for knowledge management and business collaboration” (Wikipedia 2014). This software combined with the prevailing literature written on Drupal and web design in general will comprise the knowledge base for this project.

3 Implementation

This project applies theoretical research and customer requirements as key inputs in the physical implementation of this project and it is executed in three phases.

3.1 Phase One - Customer requirements

The goal of this phase is to get an idea of what the customers want as a final deliverable. The main stakeholders in this project are the owners of Spicetown Oy and their employees as a group and the customers of Spicetown Oy. To properly define the design goals for this project, it is essential to know the wishes and desires of the project’s stakeholders (Spicetown Oy and their customers).

The main features of the proposed website as requested by the major stakeholder (Spicetown Oy) during interviews and consultations were:

- I. Simplicity: Clarity in design and straightforward navigation and accessibility to main features.
- II. Fixed number of pages: The customer required only three pages namely;

- A home page featuring product display and product categories.
 - An 'About Us' page with brief information about the company and,
 - A 'Contact' page for feedback and location of the company.
- III. Mandatory features: Certain features were non-negotiable and were a must-have for the website. These features were;
- A product display showing prices of displayed products.
 - An order placing system (shopping cart), for customers to purchase products online.
 - An avenue for customer feedback (product review and comments).

Other customer requirements as gleaned from questionnaires sent to selected customers (30 in total) of Spicetown Oy of varying backgrounds (Asian and African) and of different ages and sexes, yielded the following data;

- All the respondents have used a website and had regular access to the internet.
- All the respondents could easily navigate a website in English meaning there was no urgent need for translation into other languages.
- Most of the respondents (About 85%) have shopped online but none had purchased food items online.
- All the respondents were willing to purchase food items online from shops within Finland if they are constrained by time and distance.
- All the respondents thought it was helpful to be able to give feedback and reviews on products online.
- Most of them (60%) were active on social media and indicated that it was a vital source of getting and disseminating information for them.
- Most of them (About 70%) were active browsers on mobile phones.

3.2 Phase Two - Benchmarking

The main idea in this phase is to find out how other similar businesses operating in Finland have designed their websites and compare and contrast the strength and weaknesses of these websites with the prevailing industry standards. The goal here is to learn from these similar projects and find ways, if any, to improve on them.

“Benchmarking is an improvement process in which organizations measures its strategic operations or internal process performance against that of the best-in-class organizations within or outside its industry; and uses that information to improve its own performance” (Sower 2011, 195). The selected websites to be benchmarked are www.kairali-foods.com and www.dfh.fi.

3.2.1 Benchmarking www.dfh.fi and www.kairali-foods.com.

The differences between the two websites (www.kairali-foods.com and www.dfh.fi) are noticeable almost immediately to the casual visitor; www.dfh.fi welcomes visitors with colourful and detailed home page and it is crammed with a lot of information in both English and other Asian languages. It includes tabs for language translation (6 languages, including English and Finnish), search tab, a shopping cart tab, secondary menu tabs for product categories on the left side of the page, a slide show advertising products, some featured products with grids showing products and their prices, a footer with additional tabs and social media icons, etc.



Figure 3: Home page of www.dfh.fi.

www.kairali-foods.com welcomes visitors with a welcome screen showing the contact details (including map icon), Facebook icon and opening hours of the shop. To view the home page, visitors have to click a ‘start shopping’ tab. The home page includes a search bar, a secondary menu tab showing product categories, other menu tabs (including shopping cart and login), a grid of featured products, a footer with additional tabs, etc.

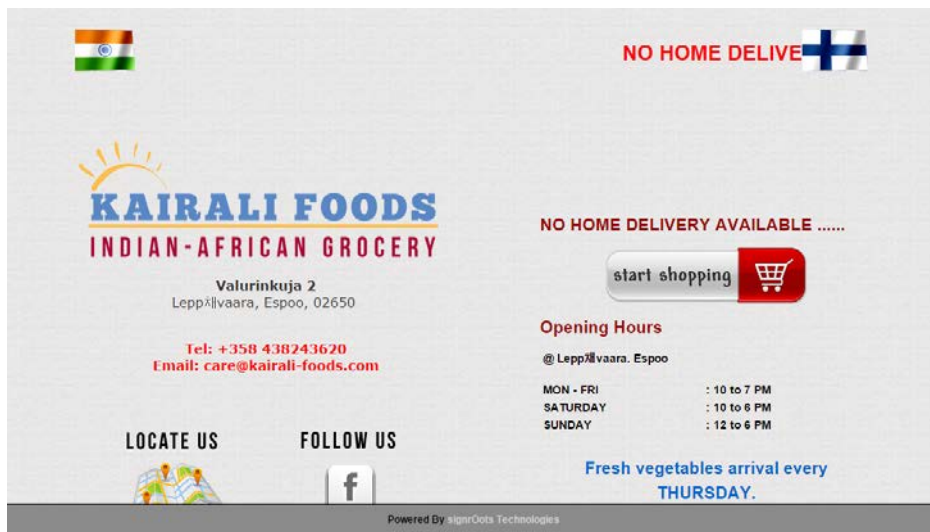


Figure 4: Welcome page of www.kairali-foods.com

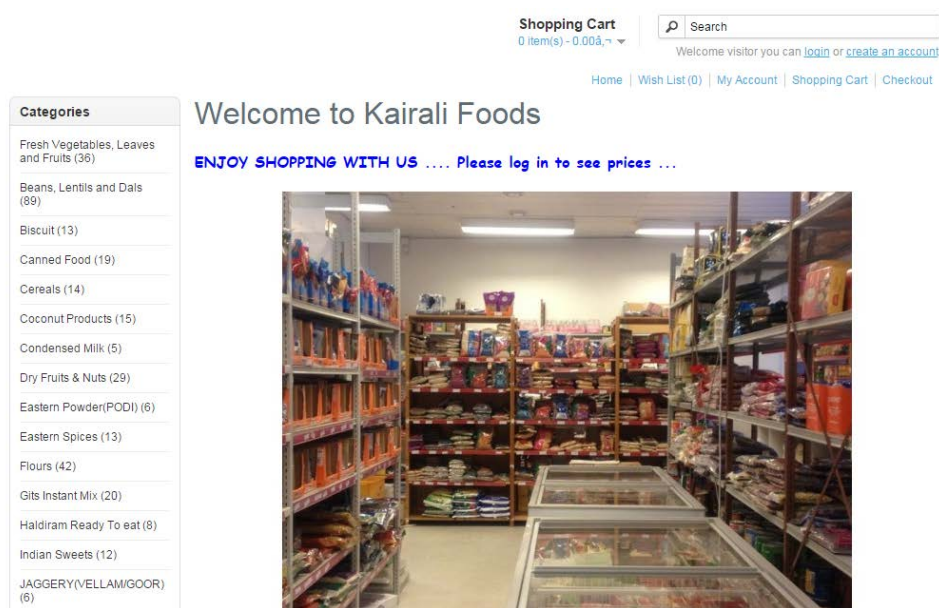


Figure 5: Home page of www.kairali-foods.com

In benchmarking both sites an online benchmarking tool (www.sitebeam.net) was used in order to get a more detailed and informed analyses of some selected components both websites when compared with current best practices and a summary of the results are tabulated below:

Component	www.dfh.fi	www.kairali-foods.com
Overall score for the website	3.6/10	5.8/10
Accessibility (How accessible the website is to mobile and disabled users)	7.5/10	7.7/10
Content (The quality and volume of content in this website)	8.1	5.6
Marketing (How well this website is marketed online)	4.8	4.8
Technology (How well designed and built the website is)	5.4	6.2

Table 1: Benchmarking results

A detailed report of the benchmarking report of both websites is included in the appendix section of this report.

There are some deductions that can be readily made from the entire benchmarking report which can serve as a guide for the design and implementation of a successful commercial website. A broad outline of some of these elements are as follows:

- I. **Technology:** The use of current or constantly evolving technology in the design and implementation of successful commercial cannot be overemphasised. The use of content management systems (CMS) in website deployment, some of which are open source and have a diverse community of people (e.g. Drupal) constantly testing, enhancing and fixing bugs, allows the web designer to create more stable, current, flexible and innovative websites because more perspectives are rendered in the design and architecture of most open source CMS. (Shreves & Dunwoodie 2011)
- II. **Social media marketing:** The rise of online social networking services like Facebook and Twitter have made such services essential marketing vehicles for targeting niche audiences and reaching a wider range of people.
- III. **Qualitative Content:** The quality of the structure and content of a website lends to its appeal to users. The proper use of colour, legible and lucid writing, content structure, clear labels and urls, etc. are very essential when designing a website.

- IV. Accessibility: The popularity of various types of mobile devices, from cell phones to tablet computers, ensures that most web designs allow for accessibility or compatibility with these devices since most of them have web browsers and can access the internet.

3.3 Phase Three - Design Steps and Processes

In this phase of the project all the mined data and information gathered in the previous stages are combined with a few design principles to first, formulate a blueprint or mock-up of the proposed website and then later transfer these ideas to an actualisation of the website.

3.3.1 Design Principles and Elements

The theory of web design are ideas that have been proven to be effective and serve as general guides to designers, these theories can be broken into two general ideas: principles and elements.

- Principles refer to the arrangement of objects on a web page and they give an aesthetic appeal (e.g. position and direction) to the overall design.
- Elements are used to build the pages and they add shape and focus and allow user to differentiate individual elements on a page (e.g. menu tab from a search box). (Dawson 2011)

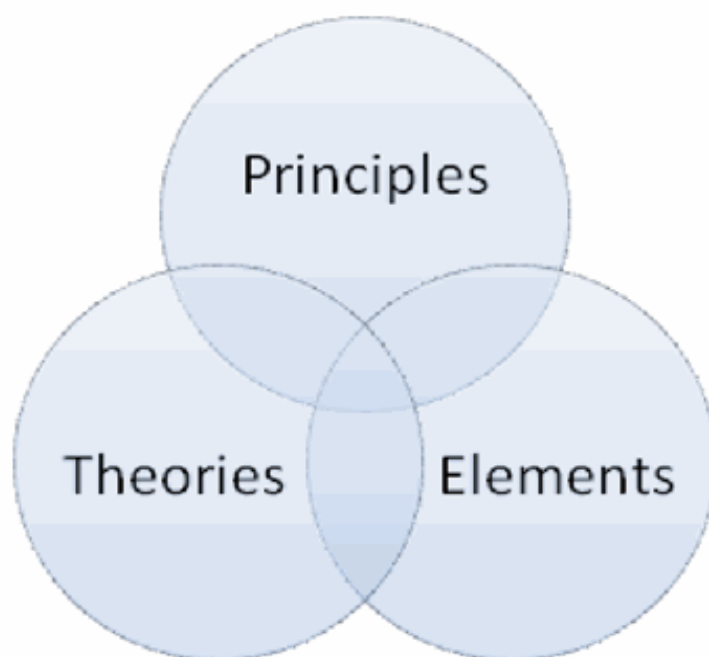


Figure 6: The trilogy of interface designing. (Dawson 2011)

Some of the theories applied in the design of the user interface are as follows;

- I. The rule of thirds: This is the division of an image or web page into nine equal parts and the placement of the important features of the page along the intersectional points. The use of the rule of thirds in web design is to efficiently maximise the use of the available space because it (compositional rule of thirds) expands or contracts according to available space and results in flexible layouts that are balanced in adjustment to a page's scale. (Dawson 2011)

Logo		
Navigation	Content	Sidebar
	Copyright	

Figure 7: An illustration of the 'Rule of thirds'. (Dawson 2011)

- II. Occam's razor: This idea when applied allows for simplicity in design. The theory behind this idea is that the simplest option often turns out to be the best when selecting

from a range of competing options of equal merit. This in turn reduces the complexity in the overall design of the web page. (Dawson 2011)

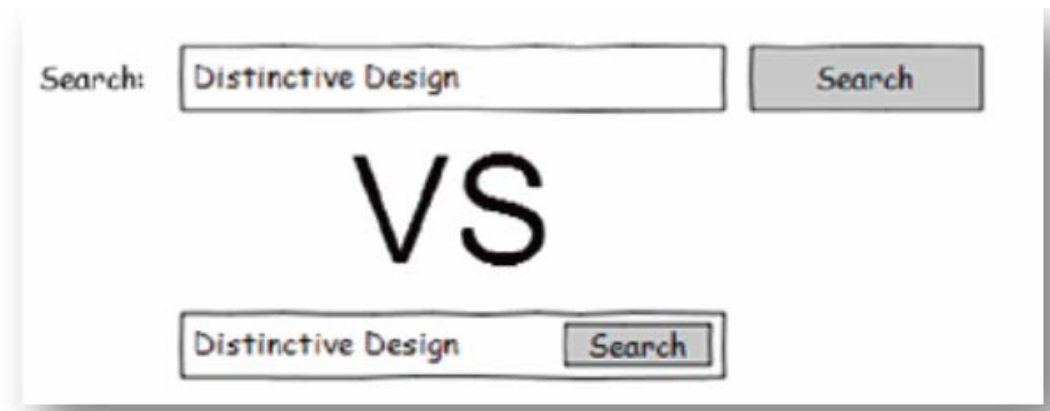


Figure 8: The use of Occam's razor in simplifying web design. (Dawson 2011)

3.3.2 Wireframes

The next step in the design process is to design a non-working prototype of the proposed website. Many websites prototypes are wireframes or mock-ups. During the course of this project some wireframes, which are visual representations of the structure of a web page (The free dictionary 2014), will be used to depict sketches of what the user interface of the website will resemble at the realisation of the project. These wireframes will provide a means of testing design ideas and show how to lay out content on a page. (Dawson 2011)

The final version of the wireframes were arrived at after much deliberation by the main stakeholders and the revision of several previous drafts. Many ideas were found to be unfeasible and therefore excluded from the final drafts.

The wireframes will represent the user interface of the three pages of the website (Home, About Us and Contact Us pages).

3.3.2.1 Contents of the Wireframes

Each wireframe will have a header and footer depicted at the top and bottom of each page respectively.

- The header contains; the company logo, a shopping cart symbol, a search bar, a horizontal menu bar containing links for the three pages and links to the sign up and login pages.

- The footer which contains; links to the three main pages, social media links and a copyright symbol.
- A vertical menu bar with links to product category pages will be consistent in all three pages.

The contents of each page are as follows:

The Home page also contains; a product slide show for popular products, three galleries showing images of products and their prices.

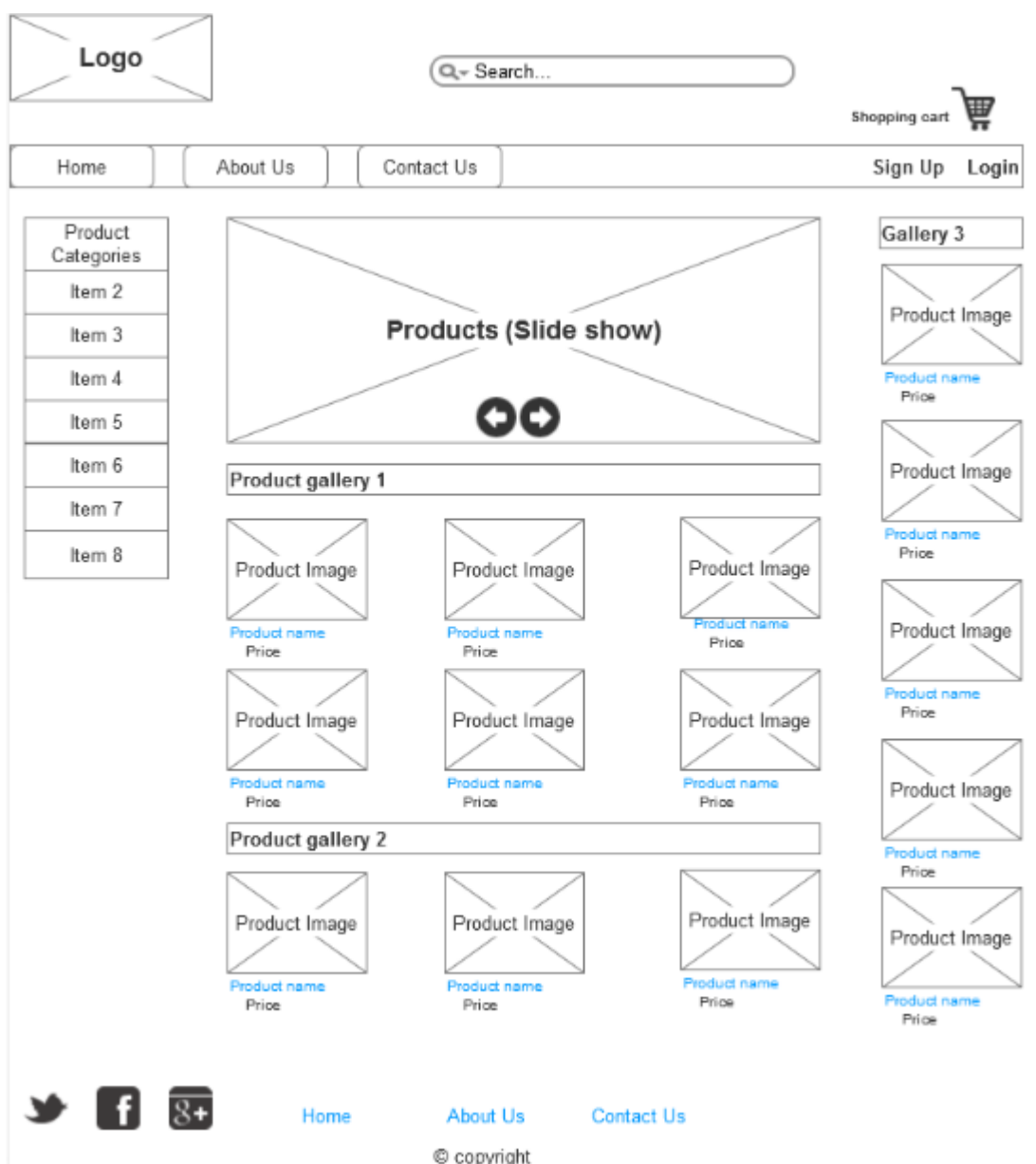


Figure 9: Wireframe of the Home page

The application of the aforementioned design principles can be clearly seen in the design of the wireframe of the Home page; The 'Rule of thirds' principle is reflected in the placement of the logo in the top left corner, the 'product' navigation bar on the left side bar, the product galleries in the main content section, the placement of 'gallery 3' in the right side bar of the page and the menu links and 'copyright' in the middle section of the footer. The simple 'search bar' is a reflection of the Occam's razor principle.

The About Us page also contains; a slide show containing images from the shop and a brief information about the company.

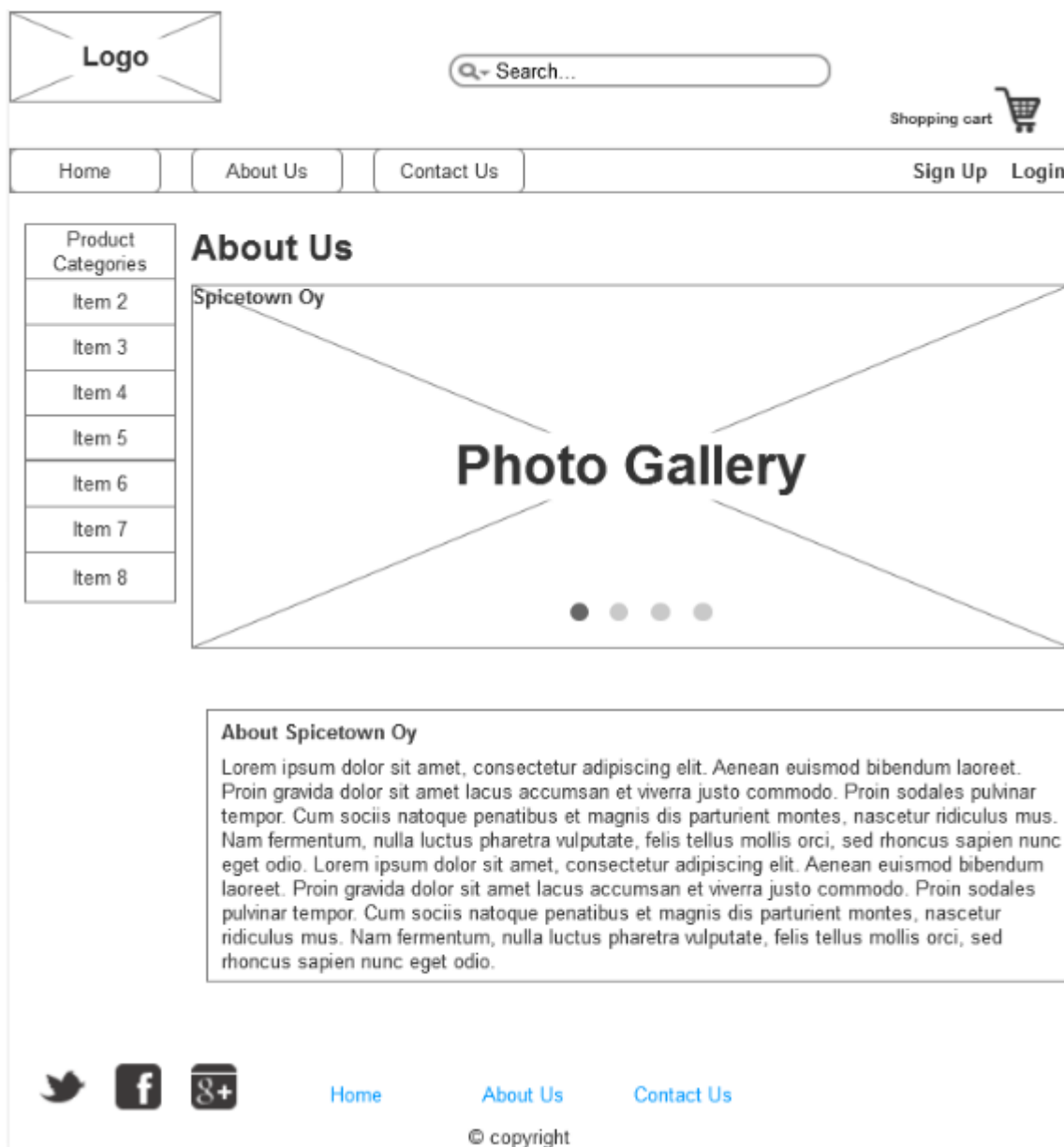


Figure 10: Wireframe of the 'About Us' page.

The Contact Us page contains: information about location and opening hours of the shop, a map for directions and a contact form.

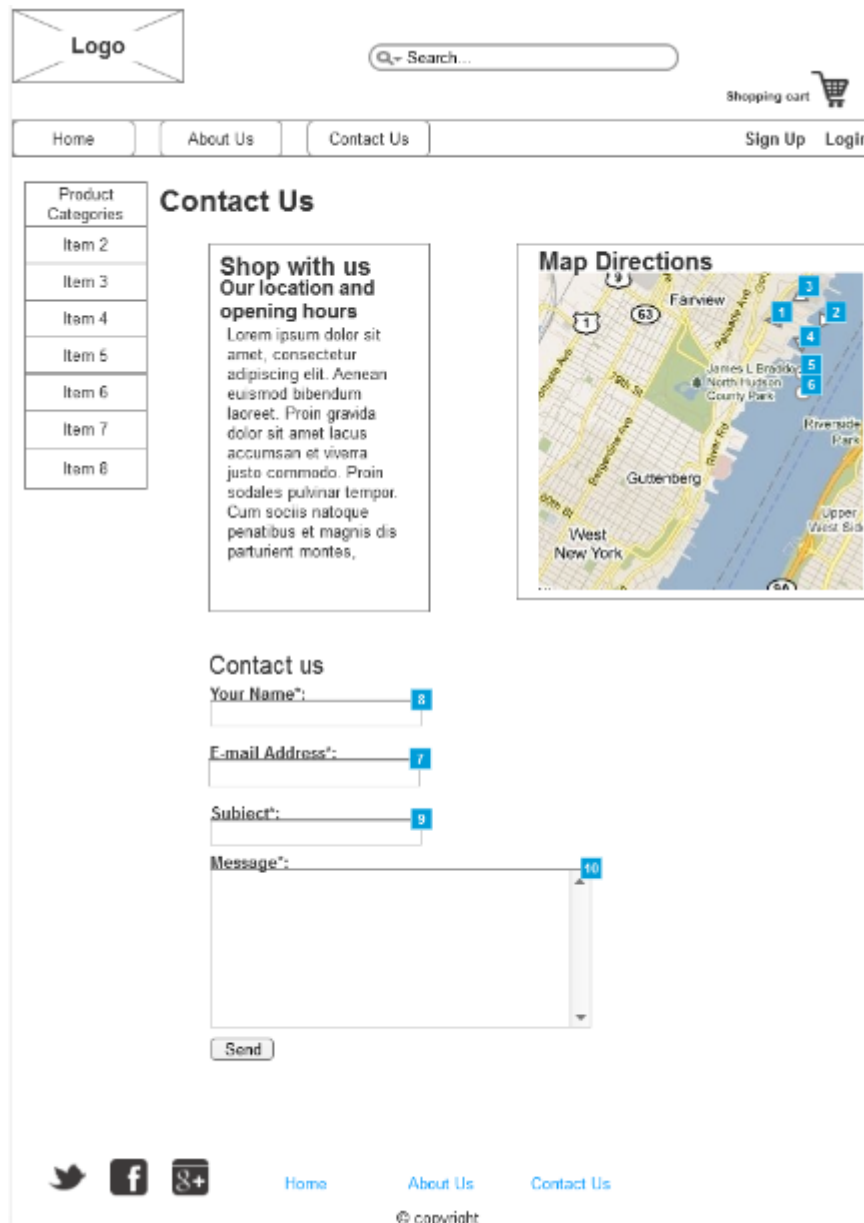


Figure 11: Wireframe of 'Contact Us' page.

3.3.3 Website Simulation and Testing

The next step, after getting positive feedback from the project's clients on the wireframes, in the design process is the simulation and testing of the proposed website by setting up a local development site. The main reasons for the simulation and testing are:

- To get a feel for how the actual website will work and look like;
- Enables the testing of new features and customisations with minimum risk to the live site;

- It is usually easier and faster to work on a local version of a site and then move it to the live version when development is complete;
- It usually streamlines development efforts and testing;
- A local installation can easily be created on many of the available operating systems (Windows, Mac, Linux, etc.);
- It can be used as back-up if major issues arise on the live website. (Shreves & Dunwoodie 2011)

3.3.3.1 Technical Requirements for Setting up a Local Installation Site

The technical requirements for setting up a local Drupal site are basic mainly because Drupal's system is tolerant of variations in server settings and can be deployed on many of the available operating systems (Windows, Mac, Linux, etc.). (Shreves & Dunwoodie 2011)

There are three main components that must be available before the installation of Drupal; a server (usually a laptop or desktop) with an operating system installed, a webserver and a database. For the purpose of this project the following components were used to set up a local installation site:

- A laptop with Windows installed on it.
- XAMPP, an acronym for a software package containing Apache, MySQL, PHP and Python. The critical ingredients included in XAMPP that are mandatory for a Drupal installation are;
 - Apache: The web server software package,
 - MySQL: The relational database for content storage,
 - PHP and Pearl: The primary programming language used to create Drupal,
 - And phpMyAdmin: used for creating and managing databases, data, etc. stored in the MySQL database. (Tomlinson 2010)

The minimum technical system requirements for the server are tabulated below:

Specification	Minimum	Recommended
---------------	---------	-------------

Apache Web server	Version 1.3 or 2.x	--
MySQL Database	Version 5.0.15+ (with the PDO database extension)	--
PHP (settings below)	Version 5.5.5+	Version 5.3
PHP Configuration: Memory	32MB	64MB+
PHP Configuration: safe_mode	OFF	--
PHP Configuration: register_globals	OFF	--

Table 2: Software Requirements for Drupal 7.x (Shreves & Dunwoodie 2011)

3.3.4 The Case for Drupal

There are a plethora of content management systems which are readily available and can be tailored to suit the needs of most web designers; they all have their strengths and weaknesses and some are better suited for certain purposes. There are a few reasons why Drupal is the content management used for this project and some of them are listed below;

- Drupal is one of the top three most globally used Web content management systems,
- It has a community of people- IT developers and specialists, dedicated to constantly developing and enhancing the functionality of the core platform by creating or improving Drupal add-ons (contributed modules),
- It increasingly regarded as an appropriate medium for creating websites in the demanding corporate environments due to the commercial forces in the Drupal community (both customer and contributor) influencing the software,
- The Drupal community is large, diverse and has been dependable and functional since 2001. (Shreves & Dunwoodie 2011)
- It is easy to use and manipulate and can be very handy in creating websites from very simple ones to relatively complex ones.

4 Modules Used and the Functionality of the Website

The downloaded Drupal platform comes with a Drupal core that includes essential modules like, systems, menu, PHP filter, etc. These modules already included in the Drupal core and will not be further discussed in this report. The modules that will be listed here are the contributed modules that were deemed necessary in this online shopping website project.

Some of these important contributed modules are:

- Content Construction Kit (CCK): It allows the addition of custom fields to nodes using a web browser,
- Chaos tools suite (ctools): This is a library of application programming interfaces (APIs) and tools used to enhance the developer experience. It includes various tools like the Page Manager, plugins, exportables, object caching, etc.
- Views: This is a very important module and it is used to obtain information stored in the Drupal database for display in various forms on the website. It can be used to create slideshows, picture galleries, etc.
- Pathauto: This module is used to generate URLs that can be easily accessed by search engines.
- Webform: This module assists the site administrator or an authorised user to create, publish and manage forms. It can be used to create online forms from very basic forms to complex forms.
- Panels: This module is used to create the page layouts on a website. It comes with predesigned layout formats and a flexible layout that can be custom designed to suit the web developer's needs.
- Commerce: This aggregated module is a suite of tools and modules needed to design a web storefront. It provides most of the necessary structure or system required to operate an online shop and sell products. It allow the administrator to price products, display product, process orders and ship the items paid for to the right customers.

- **Social Media:** This module can be used as a marketing tool because it helps to integrate the website with various popular social media sites like Facebook, Twitter, Google+, etc. It allows the site administrator to centrally manage social media profiles and information and plug-in widgets like the share and follow icon.
- **Backup and Migrate:** Used to back up site files and data in the database. It helps to easily back up or restore the Drupal MySQL database, codes and web files as well as migrate website between environments.
- **Payment:** This module allows payments to be made using the available payment methods.

These are some of the important modules used to create and extend the functionality of the website.

4.1 Website Functionality

The functionality (the way in which visitors interact with the site) of this website is in line with the project's overarching theme of simplicity and efficiency. The ways in which the site's visitors can interact with the site are explained from the view of the site administrator, the authenticated user and the anonymous user and these views are explained below.

- **The anonymous user:** This refers to casual site visitors that have yet to be registered. These types of users have a limited interaction with the site but despite the site's restrictions, anonymous user can still perform the following actions;
 - Browse through product displays and categories,
 - Rate products on display,
 - Read and write comments where available or necessary,
 - Use the social media function to share on Facebook, tweet on Twitter, etc.,
 - Send messages or make inquiries with the contact form,
 - The anonymous user can also register for an account if they so desire and if the account is approved they become authenticated users.

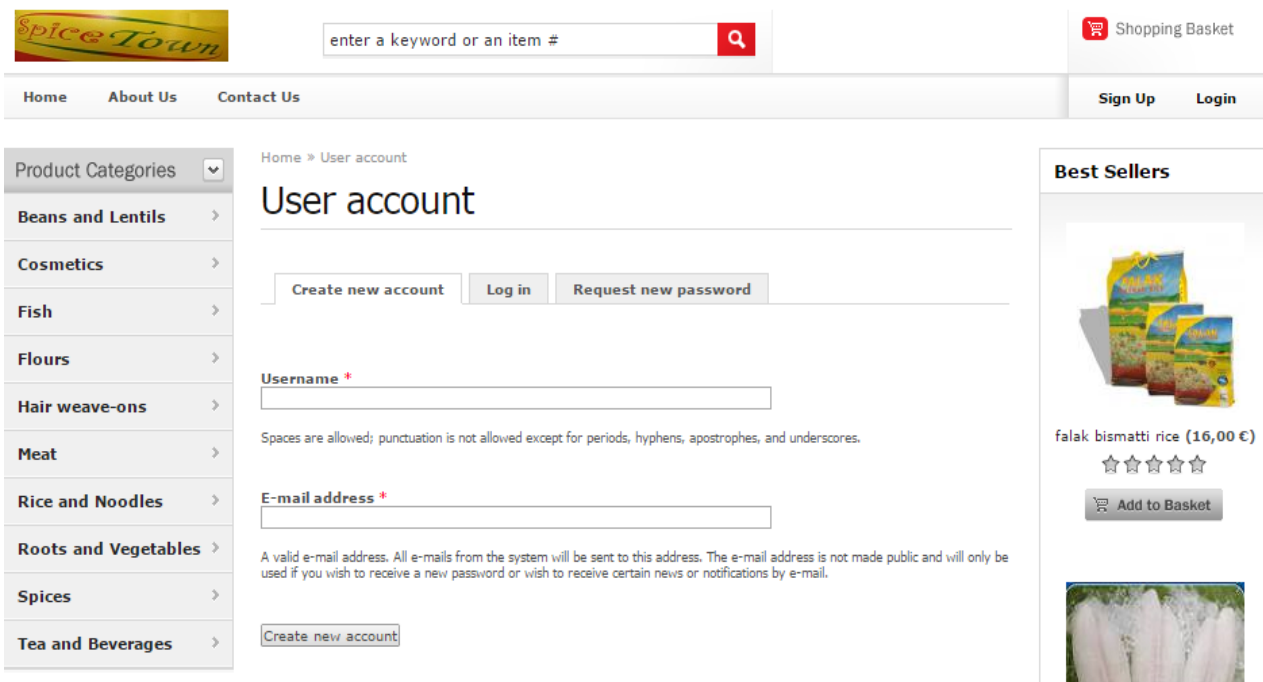


Figure 12: Sign up page for anonymous user.

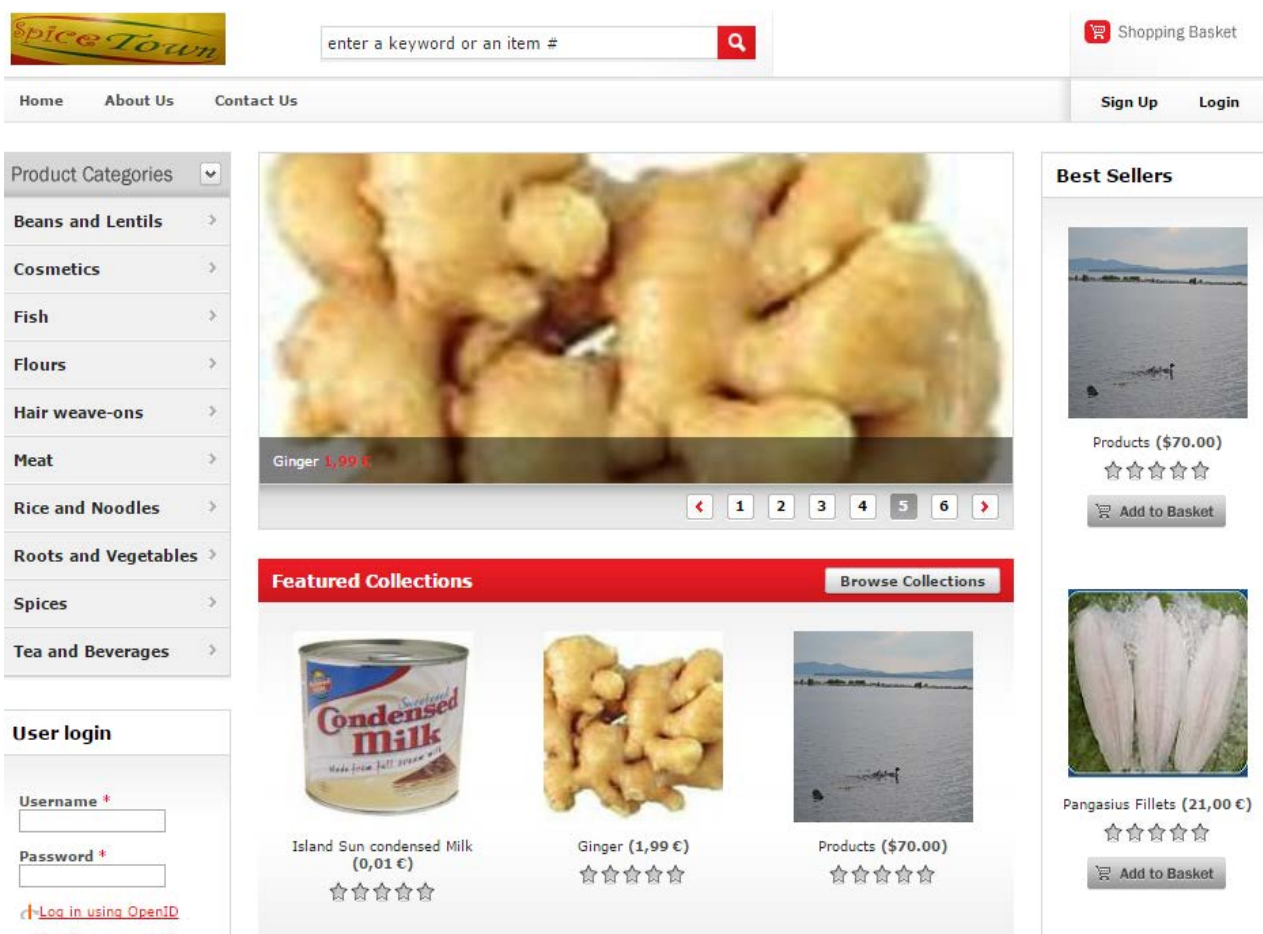


Figure 13: Homepage of anonymous user.

The screenshot displays a product page for 'Ginger'. On the left, there is a 'Product Categories' dropdown menu with options like 'Beans and Lentils', 'Cosmetics', 'Fish', 'Flours', 'Hair weave-ons', 'Meat', 'Rice and Noodles', 'Roots and Vegetables', 'Spices', and 'Tea and Beverages'. Below this is a 'User login' section with fields for 'Username *' and 'Password *', and links for 'Log in using OpenID', 'Create new account', and 'Request new password'. A 'Log in' button is also present. The main content area shows the product 'Ginger' with a large image, an 'In Stock' badge, and a price of '1,99 €'. There is an 'Add to Basket' button and a 'Customer Rating' section showing 5 stars. Below the product image is a 'Product Gallery' section with 'Prev' and 'Next' navigation buttons. At the bottom right, there is a 'Write a Comment' button. The page also includes social media sharing options like 'Tweet This', 'Digg This', 'Delicious', and 'Stumble it'.

Figure 14: Product view of anonymous user

- The authenticated user: This refers to a user that has been granted a user account on the website through registration. In addition to being able to perform all the actions that an anonymous user can, the authenticated user is granted certain privileges that the anonymous user does not have. Some these privileges are;
 - Maintaining a user account: Being granted an account comes with the right to customise the account; users are free to store personal information like name, billing address, etc., create and maintain social media profiles and add personal pictures if they so desire,
 - Edit or delete their own comments,
 - Create orders and view them online whenever they want,
 - Have the option of select their preferred method of payment from the two choices available (cash on delivery or through PayPal).
 - Have their orders delivered to their billing address,

- Send messages and make inquiries directly from their user account.
- Subscribe for newsletters if available.

The screenshot displays the 'Spice Town' website's shopping cart interface. At the top, there is a search bar and a shopping basket icon indicating 3 items for 42,99 €. The navigation menu includes Home, About Us, and Contact Us. A sidebar on the left lists product categories such as Beans and Lentils, Cosmetics, Fish, Flours, Hair weave-ons, Meat, Rice and Noodles, Roots and Vegetables, Spices, and Tea and Beverages. The main content area is titled 'Shopping cart' and contains a table with the following items:

Product	Price	Quantity	Remove	Total
Pangasius Fillets	21,00 €	<input type="text" value="1"/>	<input type="button" value="Remove"/>	21,00 €
Tilapia Whole (800 kg)	20,00 €	<input type="text" value="1"/>	<input type="button" value="Remove"/>	20,00 €
Ginger	1,99 €	<input type="text" value="1"/>	<input type="button" value="Remove"/>	1,99 €

Below the table, the total amount is displayed as 'Total: 42,99 €'. There are 'Update cart' and 'Checkout' buttons. On the right side, a 'Best Sellers' section features a 'Tilapia Whole (800 kg)' for 20,00 €, with a star rating and an 'Add to Basket' button.

Figure 15: Shopping cart details of authenticated customer.

- The site administrator: This refers to the person(s) given authority to manage the contents of the site. The role of site administrator is a very important and sensitive one and as such should be entrusted to someone capable and trustworthy. The privileges of a site administrator are;
 - Create and manage content on all sections of the site; by uploading pictures, writing and editing written sections of the site, etc.,
 - Download and enable modules required for the functioning of the site,
 - Create accounts for authenticated users and granting rights and privileges to authenticated and anonymous users,

- Manage the social media profile of the site and choose which information to share via social media,
- Moderate users' comments and site behaviour by deleting their comments or accounts if deemed necessary,
- Manage customer orders and payments.
- Send newsletters to subscribed members.
- Regular site maintenance and backup; The site administrator's duties include the regular updating of the modules, the Drupal core if necessary and the backing up of the sites file for storage in a safe location in case they are needed in future.

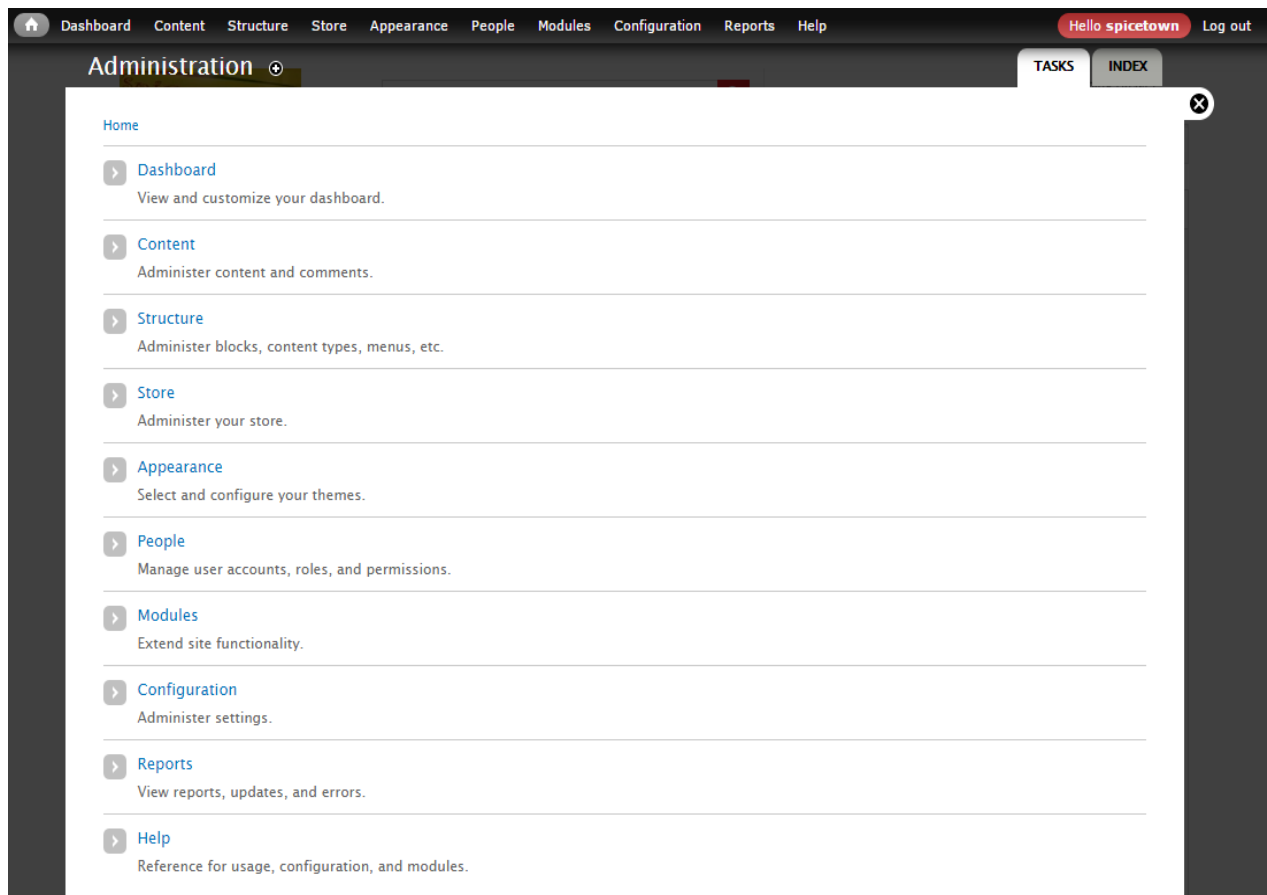


Figure 16: Page view of site administrator

5 Conclusions

After the final testing of the simulated website on the local development site, the website is finally migrated to the live hosting site. Some aspects of the website that were tested in the testing phase were;

- Using the site as an anonymous user to see how a first time visitor might experience the site.
- The creation of different types of user accounts to see how the roles and permissions granted are working correctly.
- Testing the website on different browsers (Firefox, Google Chrome, etc.) to ensure that the site works well on most of the popular browsers.
- Sending messages to and from the site to ensure that the emails are configured properly.

5.1 Hand over and Training

The successful launch of the website was concluded with the training of some of the employees of Spicetown Oy. The training did not require the preparation of extra documentation. It consisted of oral instructions and hands-on exercises conducted in a few hourly sessions and the areas covered in the training sessions required only basic knowledge of computer know-how and some of these areas were;

- General administration of the website: The trainees were given instructions on how to administer the site. They learnt; how to upload pictures to different sections of the site and how to correctly label them, how to update the written information on various parts of the site, how to give permissions to different categories of users, etc.,
- Setting up accounts and social media functions: They also learnt how to set up user accounts and delete them if need be, and how to configure the social media aspects of the site in order for them to function properly,
- Administering payments and orders: The training sessions included demonstrations on how to correctly process orders and online payments for commodities.

- Using the Backup and Migrate module: Instructions on how to use the Backup and Migrate module to regularly backup the sites and store the backup files safely in two different locations as a safety measure against unexpected mishaps like viruses, malware or database failure.
- Regular maintenance and updating: The final aspect of the training sessions dealt with regular updates and site maintenance; how to update modules whenever necessary and how to update the Drupal core whenever there is a new version.

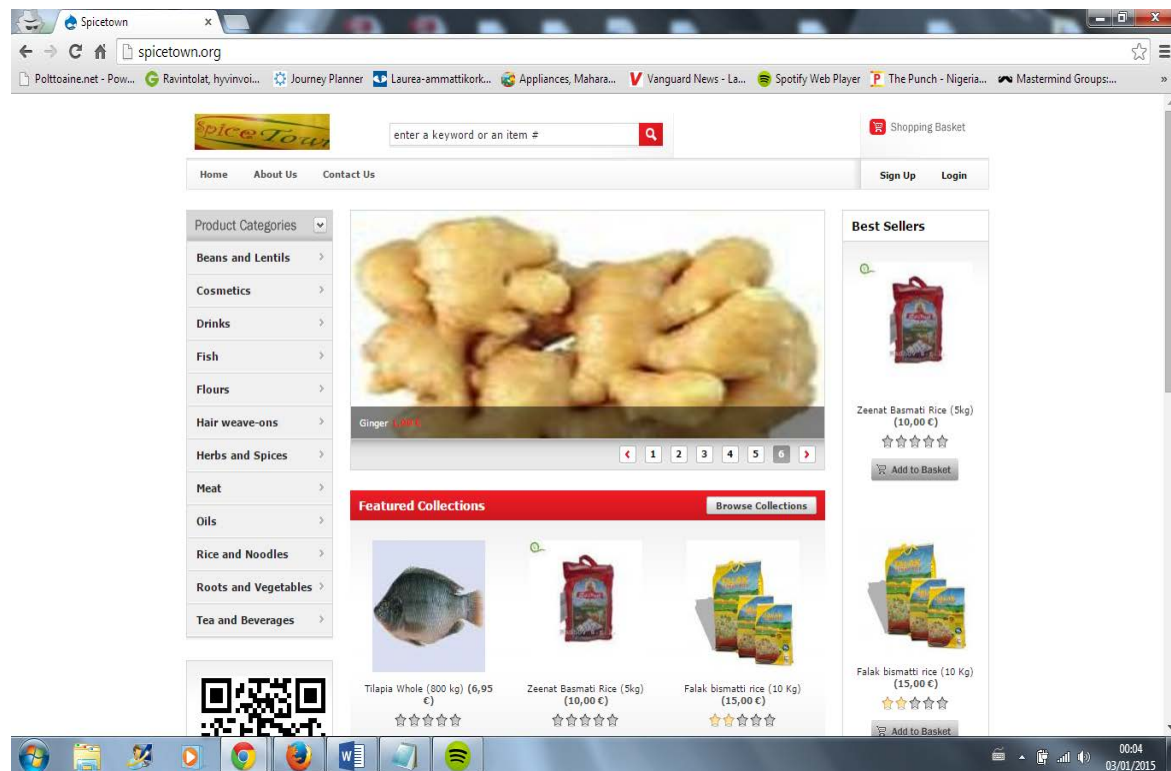


Figure 17: Homepage of actual website, www.spicetown.org

5.2 Project Evaluation

The main aim at the start of this project was to create an online shopping website for the Finnish company Spicetown Oy, which can be used as a marketing tool and as a means of transitioning from a regular brick and mortar business to having an online shop. The customer desired a simple and easy to manage website that can be administered with little or no technical expertise. The final deliverable was well received by the project's main clients. The main reasons for the success of this project can be found in the course of the entire project;

all the stakeholders in the project had valuable input during most of the project's stages, every requirement was discussed and the feasible ones were retained, even though the time frame for the project increased significantly due to the busy schedules of the main stakeholders, adequate accommodation was made to extend deadlines and reschedule meetings.

The lessons learnt during the course of this project have been instructive; from the further development of more technical skills in the area of web design with Drupal, the better management of time especially when it is work related, learning how to communicate more effectively in a professional environment, finding different approaches to problem solving, to collaborating with different people to execute a project. These lessons will prove very beneficial whenever similar situations arise in future endeavours.

5.3 Suggestions for future development

This project was based on the creation of a website for use as a marketing tool so an area for further research can be the impact of a website on the growth of a business, especially if the business in question had existed for a considerable time as a brick and mortar business.

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Appendices

Appendix 1: Customer survey questionnaire

Spicetown Oy Customer Survey

Dear esteemed Customer,

Spicetown Oy is inviting you to participate in a customer survey for a proposed website and would like you to take some time to answer a few questions. The questionnaire is quick and easy to fill out and your answers will be anonymous and confidential.

Please select your gender*

Male

Female

State your nationality**

Age*

Have you ever browsed the internet?

Yes

NO

Do you have regular access to the internet?

Yes

No

How often do you browse the internet with your mobile phone?

Very often

Rarely

Never

Can you navigate a website written in English?

Yes

No

How often do you shop at spicetown? *

Weekly

Few times a month

Few times a year

Rarely

How often do you shop online?

Very often

Rarely

Never

Have you ever purchased food items online?

Yes

No

Would you consider shopping online for food items if you were very busy or lived far away from the food shop? *

Yes

No

What is your view on online feedback and product review? Select all that apply. *

Important

Helpful

Useful

Not necessary

Waste of time

How active are you on social media sites (Facebook, Twitter, etc)? *

Very active

Active

Rarely active

Don't have a social media account

How many social media accounts do you own? *

Is there any specific feature you would want added to the website?

Thanks for taking your time to answer the questions.
Sincerely,

Spice Town Oy

Appendix 2: Detailed Benchmarking Report for www.dfh.fi and www.kairali-foods.com

Report for
dfh.fi



3.6

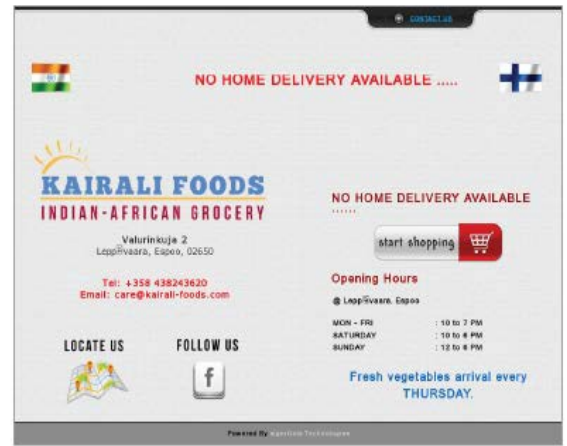
Overall
The overall score for this website.

7.5

Accessibility
How accessible the website is to mobile and disabled users.

Report for
kairali-foods.com

Sitebeam Trial
See www.sitebeam.net for upgrade options



5.8

Overall
The overall score for this website.

7.7

Accessibility
How accessible the website is to mobile and disabled users.

Report for
dfh.fi

8.1

Content

The quality and volume of content in this website.

4.8

Marketing

How well this website is marketed online.

5.4

Technology

How well designed and built the website is.

5 pages tested on 17th November 2014

This report was limited to 5 pages.

Key points

- ✘ Few incoming links**
Sites with more incoming links rank higher in search engines.
- ✘ Slow to load**
Slow pages put off users and lower search engine rankings.
- ✘ Open Graph is not used**
Making this website less likely to be shared on social networks.
- ✘ Very low Facebook following**
Facebook can be an excellent channel for communication and brand building.

Sitebeam trial report - limited to 10 webpages

Report for
kairali-foods.com

Sitebeam Trial
See www.sitebeam.net for upgrade options

5.6

Content

The quality and volume of content in this website.

4.8

Marketing

How well this website is marketed online.

6.2

Technology

How well designed and built the website is.

5 pages tested on 17th November 2014











This report was limited to 5 pages.

Key points

- ✘ Rarely visited**
Compared to other websites.
- ✘ Open Graph is not used**
Making this website less likely to be shared on social networks.
- ✘ Very low Facebook following**
Facebook can be an excellent channel for communication and brand building.
- ✘ A file is missing**
Suggests a technical problem, and may slow down the website.










Page 2

Report for
dfh.fi

-  **Not W3C compliant**
Compliant pages are generally more accessible and compatible with more browsers.
-  **Increasing in popularity**
Over the past 3 months.
-  **Using Magento**
This makes the website easier to keep up to date.
-  **Writing is very easy to understand**
Easy-to-understand text benefits users and search engines.
-  **Alternative text is used almost everywhere**
Alternative text tells blind users what your images contain.
-  **Search facility**
Search is important to help users find content in larger websites.
-  **Analytics is used**
Analytics allow for detailed analysis of visitor behaviour.
-  **Not particularly popular**
Compared to other websites.
-  **Barely shared socially**
Facebook and Twitter can contribute to traffic and brand awareness.
-  **Updated occasionally**
Regular updates promote higher search engine rankings.

Report for
kairali-foods.com

Sitebeam Trial
See www.sitebeam.net for upgrade options

-  **Increasing in popularity**
Over the past 3 months.
-  **Writing is very easy to understand**
Easy-to-understand text benefits users and search engines.
-  **Quick to load**
Slow pages put off users and lower search engine rankings.
-  **Reasonably well linked to**
Sites with more incoming links rank higher in search engines.
-  **Some Analytics is used**
Analytics allow for detailed analysis of visitor behaviour.
-  **Barely shared socially**
Facebook and Twitter can contribute to traffic and brand awareness.
-  **Alternative text is not always used**
Alternative text tells blind users what your images contain.
-  **Not fully W3C compliant**
Compliant pages are generally more accessible and compatible with more browsers.
-  **Potential typosquatter**
Typosquatters register similar domain names hoping to attract and sometimes deceive your visitors.