

Vishnu Sharma

BUSINESS AND E-COMMERCE IN DRUPAL

Vishnu Sharma
Bachelor's Thesis
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Oulu University of Applied Sciences

PREFACE

This work was done during spring 2011. The thesis is based on Business and Technical parts. The aim of this thesis is to start a small scale e-commerce business and to build a web application in Drupal. My very special thanks to the supervisors of my thesis, Pirttiahho Lauri and Sami Niemelä from Raahe School of Engineering and Business, who were always very helpful, provided me with excellent support and overall led me quickly and efficiently to the finish the work.

I would also like to thank Kalske Project, for their willingness and support to share their experience and knowledge of the business idea. I would also like to thank Kaija Posio for language checking of this work.

And finally I am thankful to my family and friends that supported me, kept my thinking positive and altogether made my stay in Raahe, Finland, really special.

TIIVISTELMÄ

Oulun seudun ammattikorkeakoulu
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Tekijä: Vishnu Sharma
Opinnäytetyön nimi: Business and E-commerce in Drupal
Työn ohjaaja: Sami Niemelä, Lauri Pirttiaho
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Tämän opinnäytetyön tavoitteena on esitellä Drupalin julkaisujärjestelmän käyttöä pienillä ja keskisuurilla web-selaimilla. Tässä opinnäytetyössä Drupalia on käytetty Hmcraft-verkkokaupan sivuston ohjelman luomiseen.

Tämä opinnäytetyö havainnollistaa kuinka Hmcraft perustetaan, sen yritys-, tuote- ja mainosstrategian. Työ erittelee verkkokaupan hyödyt ja haitat sekä Hmcraft:in tulevaisuuden suunnitelmat.

Drupal on sisällönhallintajärjestelmä, jota voidaan käyttää yksinkertaisten web-sivujen tai monimutkaisten online sivustojen luomisessa. Järjestelmällä on aktiivinen, tuhansista jäsenistä ympäri maailmaa koostuva yhteisö, joka jatkuvasti kehittää ja tarjoaa teknistä tukea muille käyttäjille. Me tulemme käyttämään Drupalin sisällönhallintajärjestelmää (CMS) sekä Drupalin Ubercart verkkokaupan mallia, jonka kautta voimme lisätä tuotteita, luoda raportteja ja käsitellä luottokorttimaksuja. Me esittelemme myös meidän omat teemat, ja yhdistymme Drupalin mallin kautta suomalaiseen pankkimaksu palveluun.

Avainsanat: Sisällönhallintajärjestelmä, Open Source

ABSTRACT

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Supervisor: Sami Niemelä, Lauri Pirttiaho

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The aim of this Bachelor's thesis was to introduce the usage of an open source content management system Drupal in building small or medium scale web applications. In this thesis Drupal was used to build an application for an e-commerce site for Hmcraft.

This Thesis depicts how Hmcraft will be established, their business strategy, product strategy and the marketing strategy. The thesis identifies the advantages and disadvantages of e-commerce business and the future plans of the Hmcraft.

Drupal is a content management system that can be used to create simple web pages or complex multi-site online systems. It has an active community of several thousand members all around the world constantly developing and providing technical support for other users. We will be using Drupal's Content management system (CMS) and Ubercart e-commerce modules for Drupal to allow us add products, generate reports, and process credit card payments. We will roll out our own themes, and we will integrate the Drupal model to a Finnish bank payment service.

Keywords: Content management system, Open source

TABLE OF CONTENTS

PREFACE	1
Table of Contents	4
SYMBOLS AND ABBREVIATIONS	7
1 INTRODUCTION	8
1.1 Structure of Thesis	8
1.2 General Thesis Plans	9
2 BUSINESS Strategy	11
2.1 Online Advertising	12
2.2 The Advantage of Online Advertising	12
2.3 The Disadvantage of Online Advertising	13
2.4 The Types of Online Advertising	14
2.5 Profitability and the Cost Structure	15
2.6 Marketing Strategy	15
2.7 The Layers of the Value Contribution	18
2.8 Business Plan Profitability Analysis	18
2.9 General Setup Plans	22
2.10 A Framework for E-commerce	23
3 THE WORK ENVIRONMENT	24
3.1 Site Design	24

4 REQUIREMENTS FOR HMCRAFT	27
4.1 Basic Requirements	27
5 IMPLEMENTATION	30
5.1 Drupal Installation	30
5.2 Site Configurations	34
5.3 Content Management	35
5.4 Drupal Model	37
5.5 Drupal Terminologies	37
5.6 Create Content	41
5.7 Drupal Catalogue Block	45
5.8 Drupal Catalog Product Grid	46
5.9 Cart_view_form	47
5.10 Block Menu Primary Link	48
5.11 Node product tpl	49
5.12 Home Screen	50
6 TESTING	Error! Bookmark not defined.
6.1 UI testing	Error! Bookmark not defined.
6.2 User profile	Error! Bookmark not defined.
6.3 Email address.	Error! Bookmark not defined.
6.4 Purchase procedure	Error! Bookmark not defined.
6.5 Admin/ test specifications	Error! Bookmark not defined.
6.6 Browser Testing	Error! Bookmark not defined.

7 THE POSSIBILITIES OF FURTHER DEVELOPMENT	54
8 CONCLUSION	55
9 LIST OF REFERENCES	56

SYMBOLS AND ABBREVIATIONS

API	Application Programming Interface
CMS	Content Management System
CSS	Cascading Style Sheet
CCK	Constant Construction Kit
SCM	Supply Chain Management

1 INTRODUCTION

This bachelor's thesis is about the small scale private company willing to start an e-commerce business, a Nepal based handicrafts and Nepalese garments products. I am planning to start a private company named "hmcrafft" in the long run. Because it will be easier to manage as an online store I decided to create an e-commerce site for this project. I have used Drupal open source for developing the web application, and for the demo purposes was deployed to www.hmcrafft.com. In the long run it will be in a .fi domain. For the hmcrafft.com we have used Ubercart e-commerce models for Drupal to allow us to manage the store, add products, and generate reports and credit card payments. We will integrate our own theme for a Finnish bank payment service as a Drupal management.

In the first meeting with my tutoring teacher about the new thesis topics I had already written a fair amount of code which I presented to the teacher. We discussed about security issues and the possibilities of further development and my teacher recommended that I would consider using an inbuilt content management system (CMS) from the bank, instead of writing the whole software by myself. At first I felt reluctant to the idea but considering the security issues I couldn't disregard what has arisen in our meeting.

I began studying the usage of Drupal and how to write modules for it to extend the functionality, but after some while it became evident that there was very little need to do any actual coding since hundreds of modules were already written. As I learned more about Drupal I wanted to study even more of its possibilities.

1.1 Structure of Thesis

My thesis mainly consists mainly of four parts, Introduction, Business Strategies, Requirement and Implementation. Introduction is more about the idea of the thesis works. Business strategies is about the entire chain how the products can be brought to the customer, the advantage and disadvantage of e-commerce business, the profitability analysis, and the marketing strategies. In the requirement we have installed all the modules that we used for building the web application,

what are the requirements for the hmcrafter, what are the roles for the users are discussed where as in the implementation we have configured all the modules into drupal systems.

1.2 General Thesis Plans

Introduction 09-09-2010 1 weeks Done

- Checked the thesis instruction from Asio
- Wrote introduction about thesis idea, abstract and TIIVISTELMÄ
- Changes made after feedback from Language instructor

Business Strategies 20-09-2010 2 weeks Done

- Made an appointment with thesis supervisor
- Learn about business strategies
- Checked from internet the thesis idea from Lukas Nevosad
- Wrote about general idea about business plan
- Read about supply chain Management
- wrote about general Chain Management of Business

Product Strategies 15-10-2010 1 weeks Done

- Made appointment with the thesis supervisor. Discussed about the topics to be included in the thesis
- Learn about product and the types to include in the sites.
- Wrote about general product Strategies
- Changes made after feedback from Languages Instructor.

Marketing Strategies 07-11-2010 2 weeks Done

- Made appointment to the thesis supervisor. Discussed about the topics to include in the marketing part
- Done research for the marketing, visited tori and checked karmashop.fi to get basic idea.
- Read materials from web browsers about marketing issue
- Wrote about marketing strategies
- Changes made after the feedback from Thesis supervisor.

Profitability Analysis	23-11-2010	2 weeks	Done
<ul style="list-style-type: none"> - Read about the taxation, vat, custom duty - Contacted the custom office and asked about the custom duty in handicraft - Contacted finnish open market and the housing agent to get idea about store room - Made analysis calculation for 3 years - Changes made according to the supervisors feedback. 			
Work Environment	10-12-2010	4 weeks	Done
<ul style="list-style-type: none"> - Learn about Drupal - Tested couple of small project at local host. - Learn mysql 			
Installation & Configuration	10-01-2011	4 weeks	Done
<ul style="list-style-type: none"> - Installation of drupals, database,xamp -configured modules and themes - Configured permissions - Registered a private domain and installed the work on it. 			
Testing	07-02-2011	1 weeks	Done
<ul style="list-style-type: none"> UI testing, User testing, Order testing, conformation testing, email testing, admin/test specification 			
Others	15-02-2011	2 weeks	Done
<ul style="list-style-type: none"> - References, List of images, format for the thesis setup pages and the titles. 			

2 BUSINESS STRATEGY

With the start of the internet Hmcraft had setup an e-commerce site in today's world. The internet has helps for the development of business worldwide in many ways. For the small scale private business like an Hmcraft, the e-commerce businesses can be very affective to move on to larger scale at minimal cost but with maximum efficiency. E-business has achieved extraordinary levels of success as a form of business and is much more reliable for customer as well as for the administrator.

Online sales model is about selling the goods through the websites charging the customer for the product and the delivery to their place. For this Hmcraft will pay 0.10% for using API from the bank for every transaction. The long term plan is to create a chain of traditional Nepalese garment store in different cities of Finland. The biggest advantages we have to sell a high quality, handmade product through computer at a cheaper price than the competitors. The reputation of Nepalese quality, growing interest in foreign culture and globalization would help our business to do well.

E-Business Strategy for hmcraft would generally include the following topics.

- (a) Product Management
- (b) Customer Management

(a) Product Management

The products are ordered via the suppliers in Nepal, products need to pass the quality testing before being shipped out to Finland via DHL/CargoShip. Once the product arrives they are catalogued and uploaded to the site. The prices are then fixed and the details of the products are also specified in the e-commerce site.

(b) Customer Management

Hmcraft will make a direct relationship between customer's and the company. Customer's can leave a message on a feedback of the sites and can also make a direct call to the company during office hours (08-16) for the products and the service.

2.1 Online Advertising

Online Advertising is the process of advertising the products by the use of internet and World Wide Web. Online Advertising can be a most effective means for marketing the products, for the small scale private company, online marketing plays a significant role for advertising products in the internet. Online advertising is not only faster but also cheaper compared to the traditional marketing. Hmcraft will be looking forward to advertise its products and new arrival through social network sites for e.g. Twitter, Face book. To bring traffic into the sites, an attractive outlook of products will be designed. This will not only bring traffic but can also change the user to be a customer. (Online Advertising, Date of retrieval, 12-01-2011)

2.2 The Advantage of Online Advertising

The Internet is one of the greatest inventions of all times. Through websites and email we are able to operate a business, network, advertise and keep in touch with our customers. It is less costly then TV, radio or printed ads, and can also sell the products through internet marketing. (Web Marketing, Date of retrieval, 12-01-2011)

Online advertising has following three advantages Accessibility, Greater Flexibility, Global Marketing.

2.2.1 Accessibility

The most important advantage of online marketing is that user with internet connection can access the website of the company's anytime, 24 hours a day. Company can easily spread information about the products, new arrival through internet and can reach target users effectively. Interested customers who are interested about the company or the products can find about the company and the products by searching in Google. Company can target thousands of customers at once for the marketing of new products or services with email. Online advertising is more reliable comparing billboard advertising. For example if we see billboard while driving, very possible we might forget about it later but when we are using computer and see some advertisement that we are interested we click it immediately and can purchase immediately. (Accessibility, Date of retrieval, 12-01-2011)

2.2.2 Greater Flexibility

Online marketing is a flexible means for advertising products in web. It required less manpower than in a physical store, cheap rent in compared to physical store. Products can be updated anytime from anywhere. Online Advertising is less expensive than traditional advertising. Simple techniques of capturing customers email address, company can send email message and newsletters promoting products and services at almost zero cost with maximum flexibility. Unlike a paper catalogue whose products and price are fixed until the next printing, where as online catalogue can be adjusted daily or even hourly, adapting product availability, price and promotions to match changing market conditions. Customers can easily access the products through internet and can have a maximum time to think about the products before they ordered for the delivery. With one click the products can be ready to deliver to the customers address. (Greater Flexibility, Date of retrieval, 12-01-2011)

2.2.3 Global Marketing

Oxford university press defines Global Marketing as “marketing” on a worldwide scale reconciling or taking commercial advantage of global operational differences, similarities and opportunities in order to meet global objectives. The web is exactly what it is – World Wide. There is no restriction but have a 27/7 online shop carters for the customers from all over the world. Since millions of people use internet to search products and services the opportunities for expanding customer are unlimited. Internet is a global medium which allows customers to buy a product with one click between different parts of globe. (Global Marketing, Date of retrieval, 12-1-2011)

2.3 The Disadvantage of Online Advertising

Although online advertising has taken a big step forward from traditional advertising and addresses many issues advertisers had to deal with, it still has some shortcomings.

2.3.1 Difficult to attract customers

This is very common. There is lots of information in the internet. It's sometimes hard to tell the difference between quality products and the low-quality products. The list of companies is endless and for the small and medium business houses it's hard to get expected popularity which may

affect the sales. People fears about trusting the e-business For example, those spam mails with the subject heading "YOU WON THE LOTTERY" also affects to trust for the online products.

2.3.2 Genuineness of the transaction

People tend to be cautions because of the too many scams in the internet. Hackers are always trying to steal personal information, we sometimes hear about the news about debit card and credit card had been stolen. In online trading it is very difficult to consider the genuineness of the transaction.

2.3.3 Isolation

Sometimes internet seems very impersonal place. In many cases, there is no alternative to direct communication. This will be possible only in respect of sales made through sales personal. Customers cannot gain firsthand experience of a physical product before he/she buys it. For example, customer cannot try a t-shirt before buying online. Hmcraft combat this shortfall by employing return policies and in –stock pickups. (Disadvantage of Online Advertising, Date of retrieved 12-1-2011)

2.4 The Types of Online Advertising

There are various ways for advertising a company or a product. Depending on the size of the company and the resources one can decide the best and efficient types of advertising of the company. Advertising usually refers to target for reaching both new and existing customers. Being a small scare private company, Hmcraft will at first focus on the relatively cheap way of marketing.

Many means of advertising were used on the internet since its beginning and can be categorized them into following categories. The types of strategies for Hmcraft are (Types of Online Advertising, Date of retrieved, 12-01-2011)

Advertising via E-mail

Advertising via the Web

Ad Models outside the Box

Social Network (For e.g. Facebook)

Advertising through Local magazine about the sites

Search Engine Marketing

Viral Marketing

2.5 Profitability and the Cost Structure

Today's market trend is a global business. Therefore, identifying the current Finnish Market trend and the fashion statement, standard products for Finnish market in particular will be selected in Nepal. In addition, we believe not only in following the market trends, but also creating the market. Hence our product will not only be new option for the current market but innovative, fresh and completely new branch for the people.

Furthermore, my understanding of Finnish society which I have learned during my years in Finland and the sense of Nepalese Handicraft & Garments will be helping to establish this unique store. The skills I have gained during my studies in Finland, in the field of Information Technology will also support my needs when establishing this e-commerce site.

2.6 Marketing Strategy

On the basis of the e-commerce business marketing strategy, we Hmcraft will start up with the basic principles of marketing such as Social network, Local newspaper, online advertising, brochures, distributing visiting cards, and tori (Finnish open market). The product will be chosen in Nepal and will be delivered according to orders. The goods will be delivered by means of a cargo ship which will arrive in the stock within 2-3 weeks (Time to market), since we have build an ALERT in our e-commerce site that an alert will appear as a message if the stock is getting empty. There won't be any situation that we will be running out of the product in stock, which will help to run the business smoothly. After we are ready with the e-commerce sites, we will start our marketing strategy in Facebook. We will make an advertisement and send the links to our network, which will be visible among all the users in the network. We will make a discount offer for the first customers in the first week, which we believe it will also get into the eyes of the users in the network, which will bring some traffic in the e-commerce sites. We will advertise our products and the sites in the local newspaper so that more people will be familiar with the products and the sites, we will distribute visiting card of Hmcraft to promote our products and to

make it familiar in the Finnish market. We will also build one temporary store in tori, so we can get the direct feedback about the products.

Since this is a completely new product to start as an e-commerce, we don't have many competitors, which is a major advantage. But bringing a new product into the market is always a big challenge. Since from my own experience, as I have seen in Finnish people, a curiosity to learn and experience the new things will definitely help us to gain popularity in the Finnish market. Being online-distributors, the products will be cheaper comparing the physical store, easily accessible, and with just one click people can have the product through our ecommerce sites. This will also help to become familiar with the different culture and their life style along with the business.

Our long run strategy will be to establish a physical place and to make the product to consumers, so there won't be any problems. We will try to make the Hmcraft as a dealer in the Finnish market that people can get the products through local retailers. The marketing plans for Hmcraft are as follows

2.6.1 Executive Summary

After we start the online service of Hmcraft, we will advertise through social networks, newspapers, study abroad magazines, summer markets (tori), and peer influence methods, local travel agencies and Nepalese restaurants.

2.6.2 The Challenge

The products will be selected in Nepal. Our products basically will be handicraft items, made of wool and hemp. The cheap labour market in third world countries will be a big advantage for us, and we believe within the time the volume of sales will increase magnificently.

2.6.3 Situation Analysis

As a company, we will analyse our goals. If we are achieving our goals, we will focus on different things such as culture how it is affecting our product, the strengths of our products as well as the weakness. We will do analyses from different point of view. We will more concentrate more on

customer's base for particular product. We will analysis market position, strengths, and weaknesses. The SWOT analysis of the business environment can be performed by organizing the internal attributes such as strength and weakness. The external environment presents opportunities and threats.

2.6.4 Marketing Segmentation

Our product will be handmade and made of wool, wood, hemp, garment. We will focus on our sales volumes, so we can know about the market situation and which product has been sold out and in what ratio. This will help us to know what customers want. Since these product are unique, we will campaign how customers can uses where they can buy them and Also, we will check if the price is right.

2.6.5 Alternative Marketing Strategies

As we focus on the direct product selling, we will consider how the product has been sold and in what ratio, this helps us to know if a certain product needs to be discontinued or if a product needs to be rebranded.

2.6.6 The Selected Marketing Strategy

We had strategies in Product, Price, Distribution, and Promotion

In Product we will consider advantages and how they will be leveraged. Product decision will include a brand name, quality, warranty, and packaging. Price strategy, expected volume and decision of a list price, discounts, bundling, payment terms.

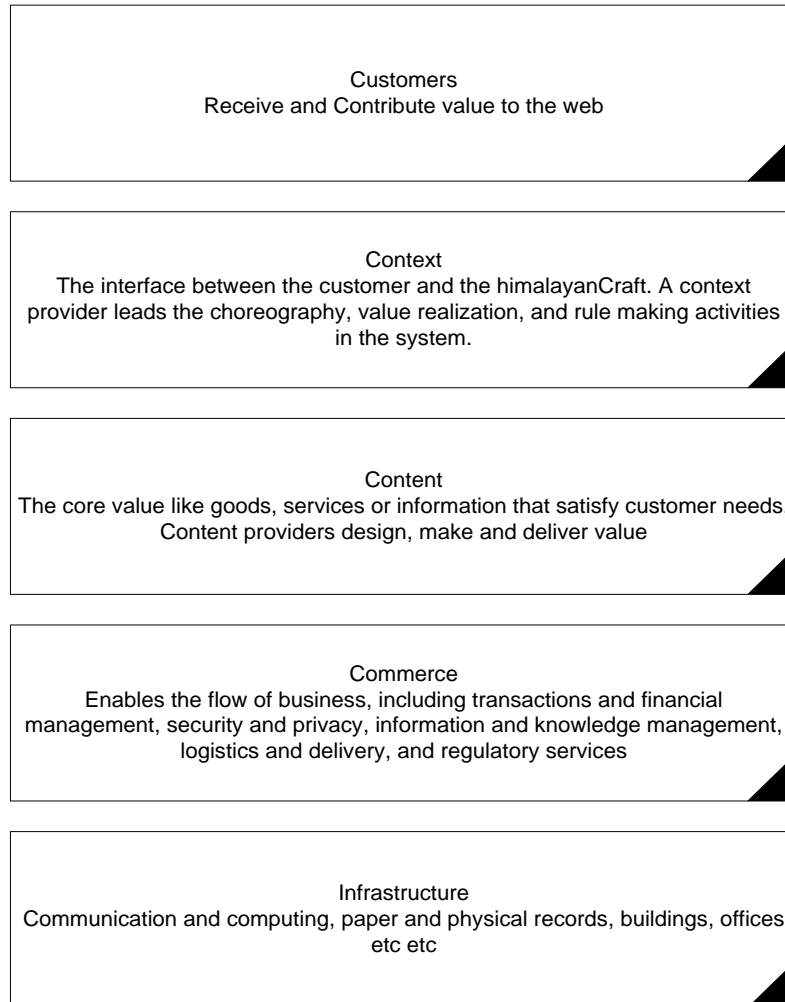
(a) Distribution

At the beginning we Hmcraft will be the only distributor, with the increase of sales volume, the sales will be carried out through different channels such as direct, retail, distributor and intermediates.

(b) Promotion

We will promote our product through advertising and through the media. We will keep a direct public contact with our customers. We will arrange different seasonal promotional programs. (Marketing Plan, Date of retrieval 15-09-2010)

2.7 The Layers of the Value Contribution



(Figure 1 *Layer of a value contribution*)

(TAPSCOTT, page no 214)

2.8 Business Plan Profitability Analysis

Three year profitability analysis estimation for “hmcrafft”, the volume of products will be increased or decreased with volumes of sales. Profit is directly proportional to the volumes of sales, which means more sales more profit. The roughly estimation profitability analysis 2011-2014 is shown below.

2.8.1 Business Plan Profitability Analysis 2011-2012

BUSINESS PLAN - PROFITABILITY ANALYSIS (2011-2012)							
Product	Quantity	Price	VAT 23%	Total Cost Price	Sales Price	Total Sales Price	
Jackets	50	11	632,5	1182,5	55	2750	
Sweaters	40	8	368	688	40	1600	
Trousers	40	6	230	470	25	1000	
Carpets	30	25	448,5	1198,5	65	1950	
Shirts	30	6	131,1	311,1	19	570	
Mufflers	30	5	138	288	20	600	
Socks	40	4	101,2	261,2	11	440	
scarfs	20	4	50,6	130,6	11	220	
Skirts	30	10	179,4	479,4	26	780	
Hats	50	5	230	480	20	1000	
Gloves	20	5	55,2	155,2	12	240	
Bags	20	6	115	235	25	500	
Purse	20	2,5	110,4	160,4	24	480	
Recycled Produ	30	3	55,2	145,2	8	240	
Sandels	30	7	138	348	20	600	
Mask	30	12	248,4	608,4	36	1080	
FootWare	30	5	138	288	20	600	
Bed Cover	25	20	258,75	758,75	45	1125	
Incense stick	40	0,3	46	58	5	200	
Religious Produ	20	11	133,4	353,4	29	580	
Jewelery	250	2	575	1075	10	2500	
Total				9674,65		19055	
Total Sales Inc	19055		Total Purchase	9674,65			
Other Income			Rent	4800	400/month		
E-commerce=	5000		Transportation Shipping	2500			
Visit Nepal=	1000		Salaries	6000	partime salary		
			Marketing	2000			
Total Income	25055		Total Expenses	24974,65			
Total Profit for 2011-2012		80,35					

FIGURE 2 Screenshot of a Profitability Analysis View 2011-2011

The expenses like manpower for building web sites, and the domain registration and other expenses related to the e-commerce were not calculated. As a thesis building an e-commerce and hosting were a part of my thesis.

2.8.2 Business Plan Profitability Analysis 2012-2013

Product	Quantity	Price	VAT 23%	Total Cost Price	Sales Price	Total Sales Price	
Jackets	60	11	759	1419	55	3300	
Sweaters	50	8	460	860	40	2000	
Trousers	45	6	258,75	528,75	25	1125	
Carpets	45	25	672,75	1797,75	65	2925	
Shirts	30	6	131,1	311,1	19	570	
Mufflers	30	5	138	288	20	600	
Socks	60	4	151,8	391,8	11	660	
scarfs	30	4	75,9	195,9	11	330	
Skirts	30	10	179,4	479,4	26	780	
Hats	50	5	230	480	20	1000	
Gloves	40	5	110,4	310,4	12	480	
Bags	25	6	143,75	293,75	25	625	
Purse	20	2,5	110,4	160,4	24	480	
Recycled Produ	35	3	64,4	169,4	8	280	
Sandels	35	7	161	406	20	700	
Mask	30	12	248,4	608,4	36	1080	
FootWare	30	5	138	288	20	600	
Bed Cover	25	20	258,75	758,75	45	1125	
Incense stick	40	0,3	46	58	5	200	
Religious Produ	25	11	166,75	441,75	29	725	
Jewelery	300	2	690	1290	10	3000	
Total				11536,55		22585	
Total Sales Inc	22585		Total Purchase	11536,55			
Other Income			Rent	4800	400/month		
E-commerce=	5000						
Visit Nepal=	1000		Transportation Shipping	3000			
Profit from 2011	80,35		Salaries	6000	partime salary		
			Marketing	2000			
Total Income	28665,35		Total Expenses	27336,55			
Total Profit for 2011-2012	1328,80						

FIGURE 3 Screenshot of a Profitability Analysis 2011-2012

2.8.3 Business Plan Profitability Analysis 2013-2014

Product	Quantity	Price	VAT 23%	Total Cost Price	Sales Price	Total Sales Price
Jackets	70	11	885,5	1655,5	55	3850
Sweaters	50	8	460	860	40	2000
Trousers	45	6	258,75	528,75	25	1125
Carpets	70	25	1046,5	2796,5	65	4550
Shirts	35	6	152,95	362,95	19	665
Mufflers	35	5	161	336	20	700
Socks	70	4	177,1	457,1	11	770
scarfs	45	4	113,85	293,85	11	495
Skirts	30	10	179,4	479,4	26	780
Hats	50	5	230	480	20	1000
Gloves	45	5	124,2	349,2	12	540
Bags	25	6	143,75	293,75	25	625
Purse	30	2,5	165,6	240,6	24	720
Recycled Produ	40	3	73,6	193,6	8	320
Sandels	35	7	161	406	20	700
Mask	30	12	248,4	608,4	36	1080
FootWare	40	5	184	384	20	800
Bed Cover	30	20	310,5	910,5	45	1350
Incense stick	60	0,3	69	87	5	300
Religious Produ	30	11	200,1	530,1	29	870
Jewelery	350	2	805	1505	10	3500
Total				13758,20		26740
Total Sales Inc	26740		Total Purchase	13758,20		
Other Income			Rent	4800	400/month	
E-commerce=	5000					
Visit Nepal=	1000		Transportation Shipping	3000		
Profit from 2011	1328,8		Salaries	6000	partime salary	
			Marketing	2000		
Total Income	34068,8		Total Expenses	29558,20		
Total Profit for 2011-2012	4510,60					

FIGURE 4 Screenshot of a Profitability Analysis 2012-2013

In addition to the ecommerce sites, Hmcraft will be looking forward for the part time incomes like providing information about Nepal and advising visit Nepal as a travel advisor and also will be looking forward for getting some project in the field of IT, especially mobile project and the E-commerce sites.

2.9 General Setup Plans

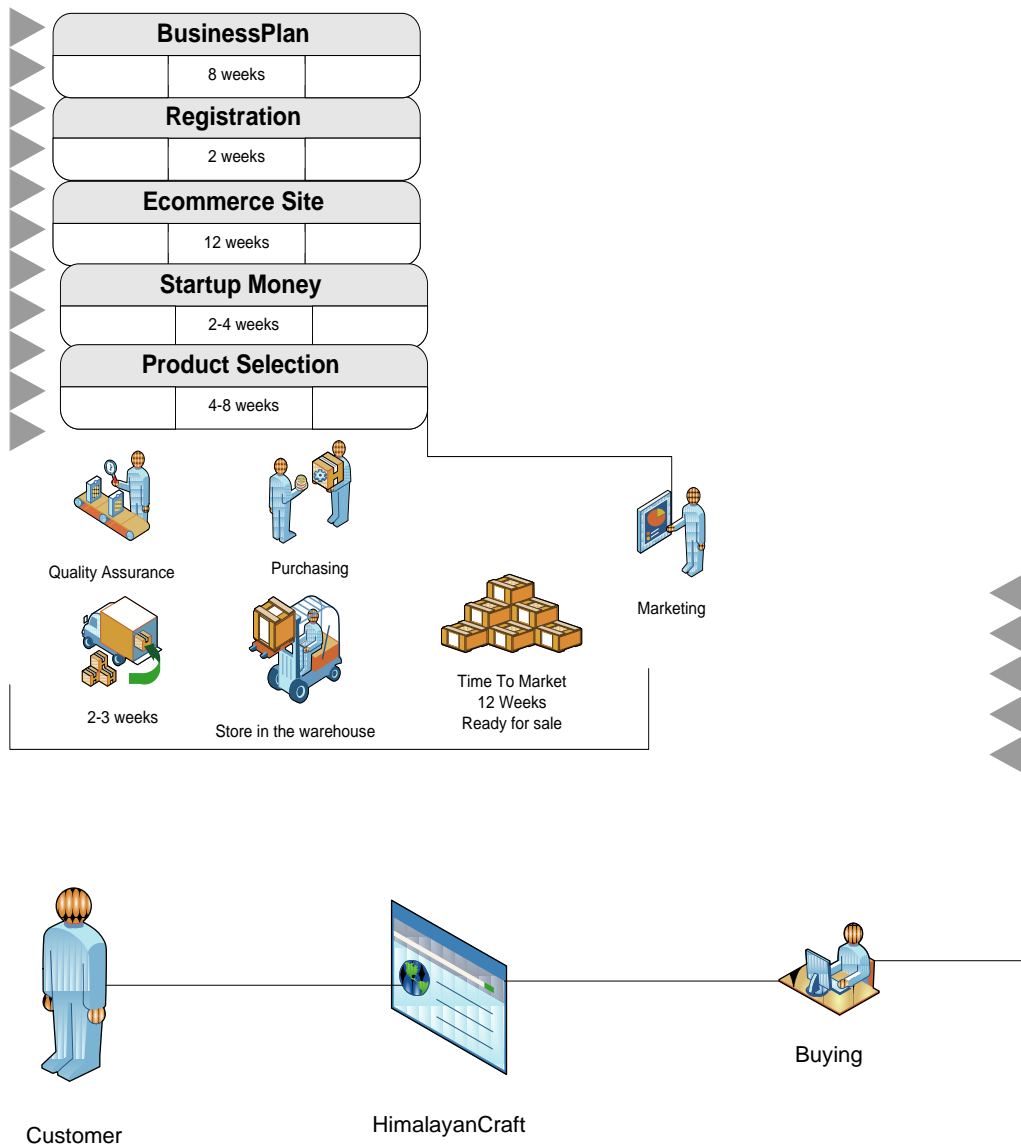


FIGURE 5 General business setup drawn in Microsoft Visio

The general setup, when we have done the business plan and an e-commerce site, we will be active for the registration process in March. During the first week of March we will apply for the registration and for the startup grant for starting a new business. Once the registration process has been finished, after receiving the license for the business registration, we will focus on the product selection process, which will be done in Nepal during April. After testing the quality of

products, the products will be bought and will be brought to Finland in a frame of 4 weeks time. By end of April we will have product in Finland. Uploading products in the ecommerce sites and tagging the price will be done in Finland after calculating all the expenses with VAT and the products will be in e-commerce sites for sale.

2.10 A Framework for E-commerce

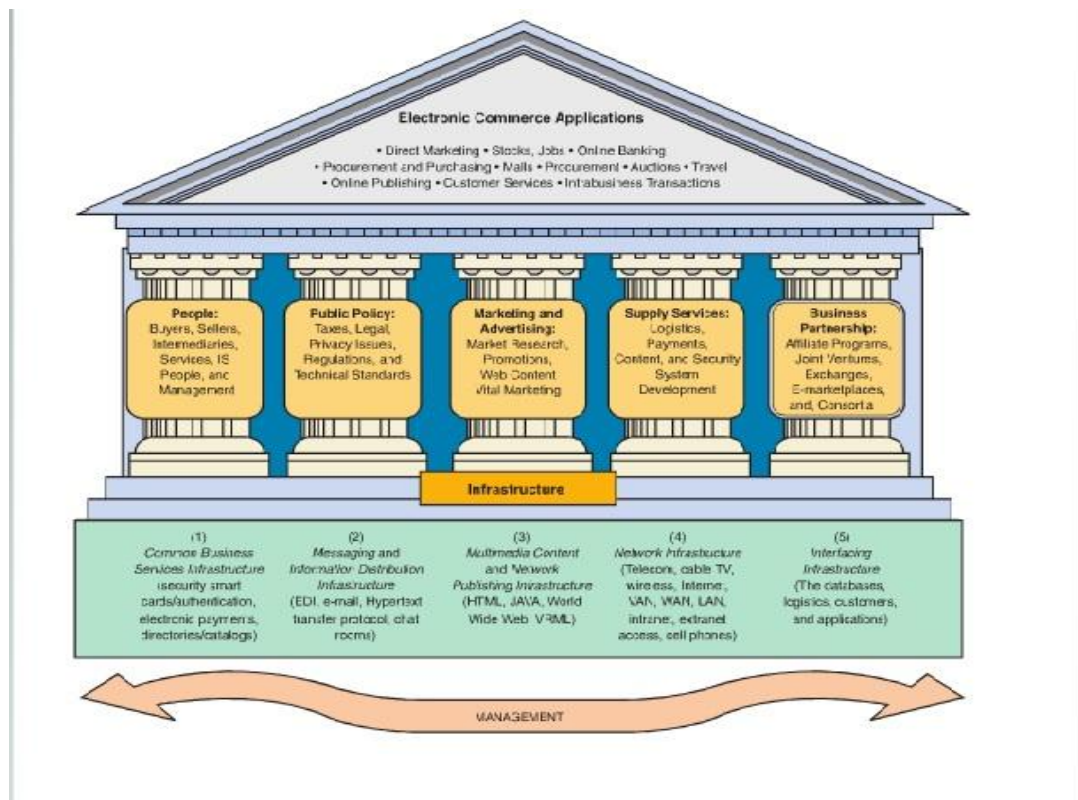


FIGURE 6 Screenshot for a framework for e-commerce
(Framework for Ecommerce, Date of retrieval 20-09-2010)

3 THE WORK ENVIRONMENT

The majority of this thesis was written and coded at home

The used Software was

PHP editor: Netbeans IDE: 6.9.1

File archieve manager: 15-Zip

FTP client program: FileZilla

Web browsers: Firefox, Google Chrome, Internet explorer.

Web browser extensions: Firebug for Firefox, A helper add-on for closer inspection of page structure directly via browser.

Image manipulation software: Photoshop, image ready

Database: Mysql

Drupal

The Version 6.19 of Drupal was used

3.1 Site Design

Site design is divided into three Process Analysis, Design, and Development. The process involves analyzing the business goal, designing a web site and deploying it into World Wide Web. (IBM Design User Experience, date of retrieval 15-04-2011).

3.1.1 Analysis

I had a business idea about an e-commerce business, importing goods from Nepal and selling them in Finland through e-commerce site. The most effective way for this kind of business was to build an e-commerce site which allows user to view the products, select the products, add products to the cart and make order for the delivery. The primary requirement for this was to build a user friendly web, and for that I studied about web platform. There are many tools available, but i choose to use Drupal for building e-commerce because of its easy content management system. Drupal is built in modules and the community around it provides it with modules for any useful feature that is needed. I found that Drupal has an e-commerce module name "Ubercart" that already fits the bill for what I need in an e-commerce site.

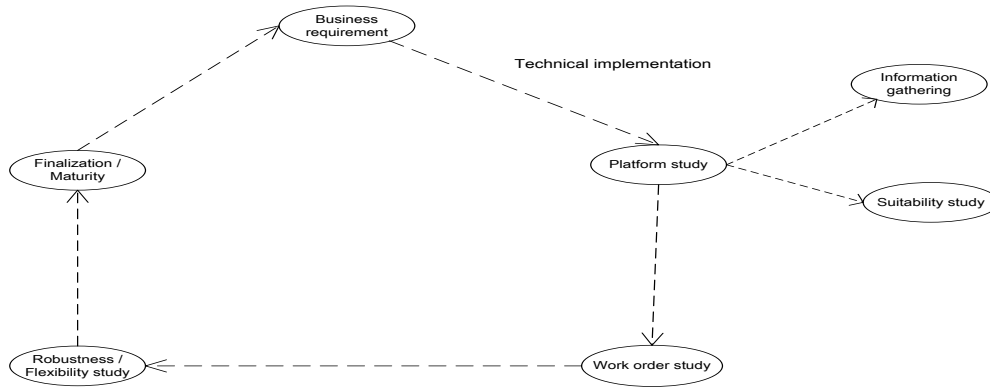


FIGURE 7 Site Analyses Process

The site can be extended in future, and it is robust enough to handle different categories of products, if future business requirement changes.

3.1.2 Design

The Application design is broken into three major parts



FIGURE 8 Site Design Process

a) User Interface

User Interface defines how information is presented to user, and how he/she can navigate himself/herself on the site and perform basic tasks without much hassle.

b) Engine

Most of the content management are done by the Drupal Management System. Drupal and ubercart have their own database. All the customers, products, report are stored in the database. Since this is an demo version we havent enable SSL and https into our servers, so to enable SSL and https we have to purchase certificates from verisign or similar certificates issuing companies.

c) Content Management

Content Management defines how business owner can add/edit or modify and delete content from the site according to new business requirement. How user interface should adapt to the changes that has occurred to the underlying data.

3.1.3 Development

The technical requirements are broken into small technical tasks block's, the whole site is made from different blocks. Drupal does it's templating and themeing with blocks. We built different blocks for example, products blocks, header blocks, catalogue block, menu block and all are integrated into Drupal Content Management Systems and are Implemented into the site. All the blocks are tested and are analysed for the further enhancement.

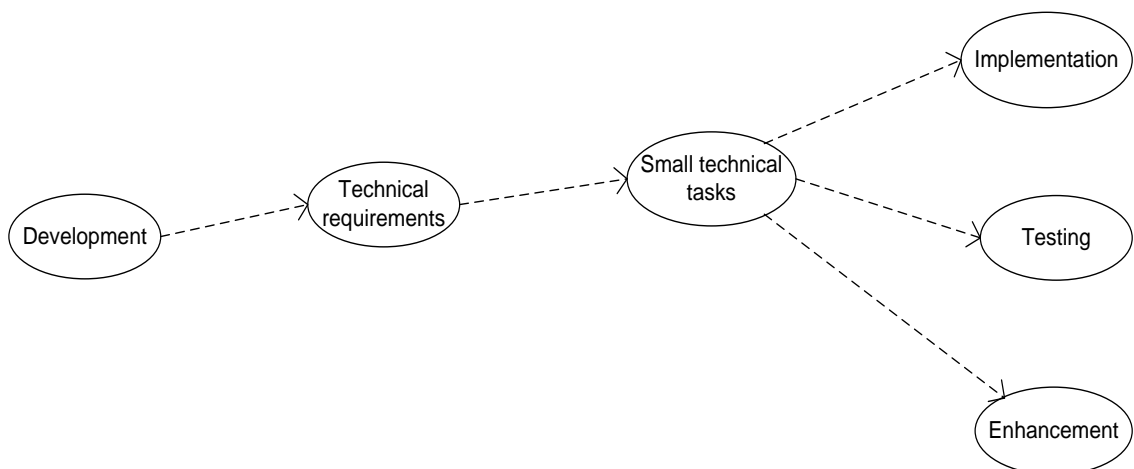


FIGURE 9 Site Development Process

4 REQUIREMENTS FOR HMCRAFT

The main idea of Hmcrafter was to have an easily maintainable customer database containing customer related content, a product database containing product related content, an order database containing order related content, a reports containing reports database content, and a configuration containing configuration database content.

Database Configuration, When we install Drupal, drupal creates its own database with installation, and ubercart install its own database. We did not require any custom data to be stored apart from what ubercart already stores and handle. Therefore, we did not do any database designs

4.1 Basic Requirements

The primary requirement for the Hmcrafter was to set the permission and roles to every user who browses the sites and also make reports about users, products, and customers

4.1.1 Administrator privilege

Administrator is able to add the product, upload images for each product, and set the product prices and attributes. Create catalogue and able to categories to different catalogue. View orders and process the orders received through the website. Search existing products and keep an update status of the products.

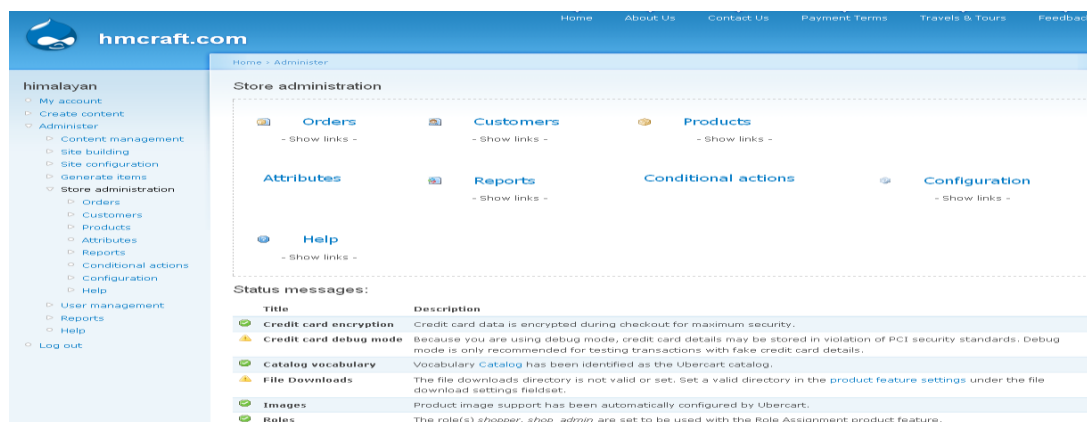


FIGURE 10 Screenshot for an Administrator privilege setting

User with an administrator privilege can view the order of the products, edit orders, and delete orders. Every new order are assigned with an automatic incremented order ID, along with customer name, total amount of the products, purchased date and the status of the order. Administrator can change the order status to payment received, or order cancelled or delayed for the delivery by sending an email notification on update.

User with administrative privilege can view the list of the customers in the table who have placed orders. Administrative privilege allows viewing the customer details which shows the number of items purchased and the order ID, Date, Billing Name, Shipping name.

Administrative rights allows to view the products listed in the system, allow to add new products to the system and edit the existing products field such as price, name, description. User with Administrative rights can delete the post from the feedback form, and can block the registered users.

4.1.2 Reports

It will generate various reports for store customers, how many customers are stored, reports for store product, how many products have been in store, sales reports (what product is the best selling products) view most loyal customers and is also able to view orders and their status.

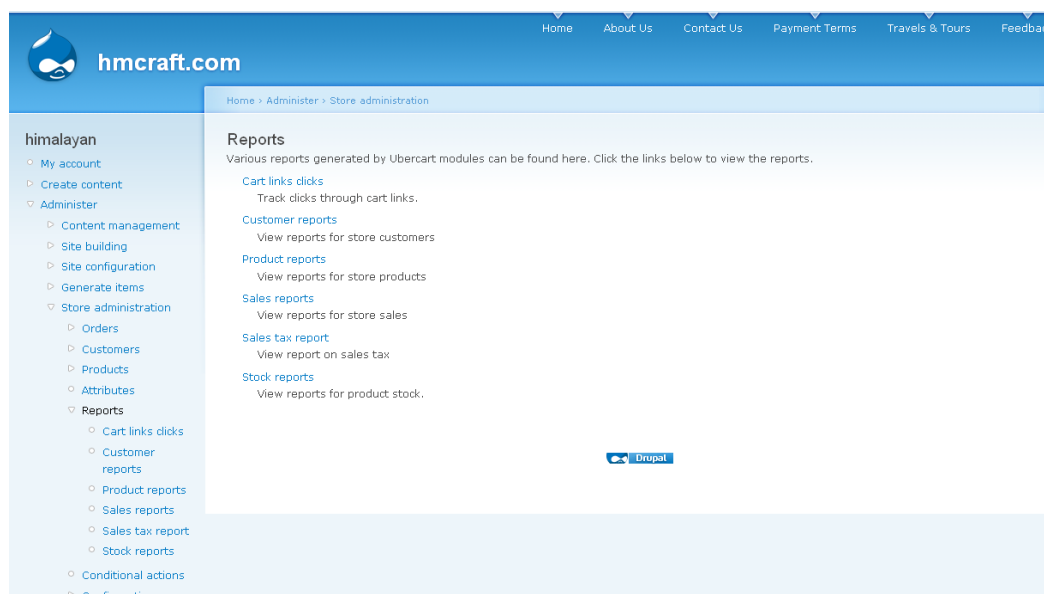


FIGURE 11 Screenshot for a Report

The customer Reports for the Hmcraft shows the customer name, orders of the product, products, total amount, and the average products the customer buy. The Product reports shows the product name, number of item sold, revenue and the gross of the product. This makes the administrative work much easier. Administrator can trace the highly demanded products and the least sold products. Sales Report shows the average sales of the products for the months, and also shows statistics for the payment received, in checkout, Product cancelled, completed.

4.1.3 Register User

Register user is able to view the product, browse the product, and view the attributes and the price of the products. Register user can checkout purchase products, including paying for the product via bank/MasterCard. Register user also can be able to view own order history.

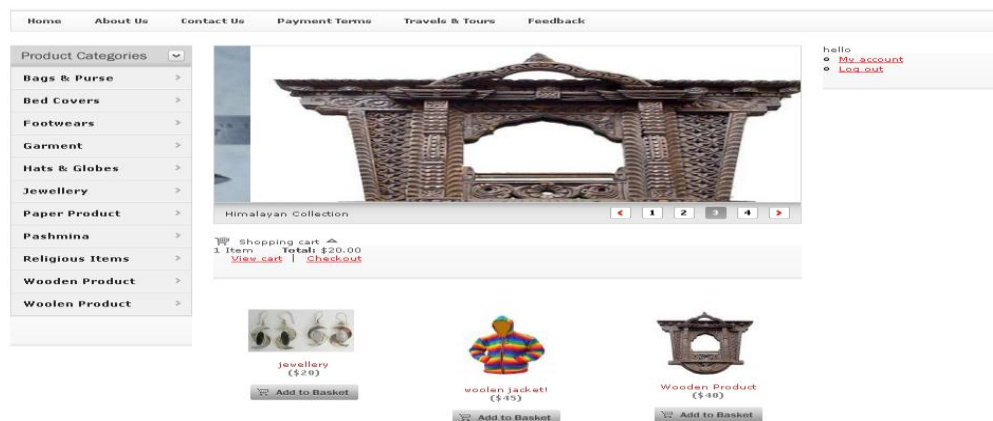


FIGURE 12 Screenshot for a Register user

In the above example, hello user name has been created and is assigned to the register user. Register user have his/her own account. Register user can view his own account where shows History when the registration has made. Register user can change the password and the time zone, can browse the products, add them to the cart and can make a checkout. While Register user can always view his previous products in the cart or can view the history what products he/she bought. Register User can comment on the feedback form about the sites or about the products. The entire register user can add comments to the old entries and can add new comments in the feedback form.

4.1.4 Anonymous User

Anonymous user is able to browse the products, view the price and the attributes of the product. To add a product to the cart to further process, he must have a register account or make a new account for the payment of the product.

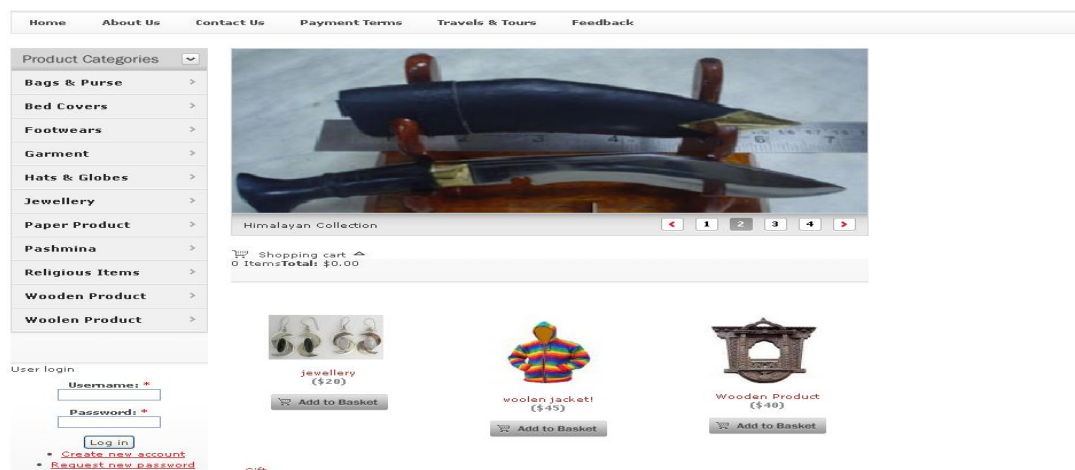


FIGURE 13 Screenshot for a Anonymous user

Anonymous Users doesn't have any account. He can simply just browse the products and the pages. Anonymous user can't write in the feedback and the UI for the Anonymous users is a lil bit different. Like in the above picture, the Login Screen Appears in the right side below the Product Categories.

5 IMPLEMENTATION

In the implementation part, we generalize overall the site structure. From the installation of drupal, drupal theme, modules, terminologies, content that we used, roles, permission for the users and

5.1 Drupal Installation

Using the web browser, navigate to (<http://Drupal.org/project/Drupal>) from where the Drupal is downloaded and saved in the targeted folder. Once the installation package has been uploaded

in the web server, the web based installation program is used to create appropriate database tables. Drupal can be installed via a web interface which makes the updating of a Drupal powered site easy.

5.1.1 User roles

By default Drupal comes with two user roles. The first roles are authenticated user, which means any user who has logged into the site. The second role is an anonymous user. This means every visitor on the site that has not logged in. Different access rights can be found for each role. After the installation of a Ubercart module, there is an extra default role as a shopper user, which means any user that has registered his account.

In addition to the basic roles, another role shop_admin, a new role had been created. This role has full rights and it can enable privileges to users that belong to this role. Users are managed at Administer>User management>Roles. New roles are added by typing a new role name in an empty box at the end of the list.

Roles

Roles allow you to fine tune the security and administration of Drupal. A role defines a group of users that have certain privileges as defined in [user permissions](#). Examples of roles include: anonymous user, authenticated user, moderator, administrator and so on. In this area you will define the *role names* of the various roles. To delete a role choose "edit".

By default, Drupal comes with two user roles:

- Anonymous user: this role is used for users that don't have a user account or that are not authenticated.
- Authenticated user: this role is automatically granted to all logged in users.

Name	Operations	
anonymous user	locked	edit permissions
authenticated user	locked	edit permissions
shopper	edit role	edit permissions
shop_admin	edit role	edit permissions
	<input type="button" value="Add role"/>	

FIGURE 14 Screenshot for Roles of the users. (User Roles, LocalHost)

5.1.2 Permission

Permission is very basic module which enhances the Drupal permissions page to support collapsing and expanding permission rows. It makes easier to manage individual permissions by removing the visual clutter of hundreds of check boxes. Permission let control what user can do on site. Each user role has its own set of permissions. For example you could give user classified as “Administrators” permissions to “administer nodes” but deny this power to ordinary, “authenticated users”. Permissions can be used to privileged users.

5.1.3 Products Lists

Administrator can view the product list, can add, update, and delete the products where as other users can only browse and can add the products to the cart. All the products that are added to the sites appear inside Product List. This Menu is accessible for the administrator or the user who have the administrative privilege. The edit link allows the administrator to change the product or description and price of the product.

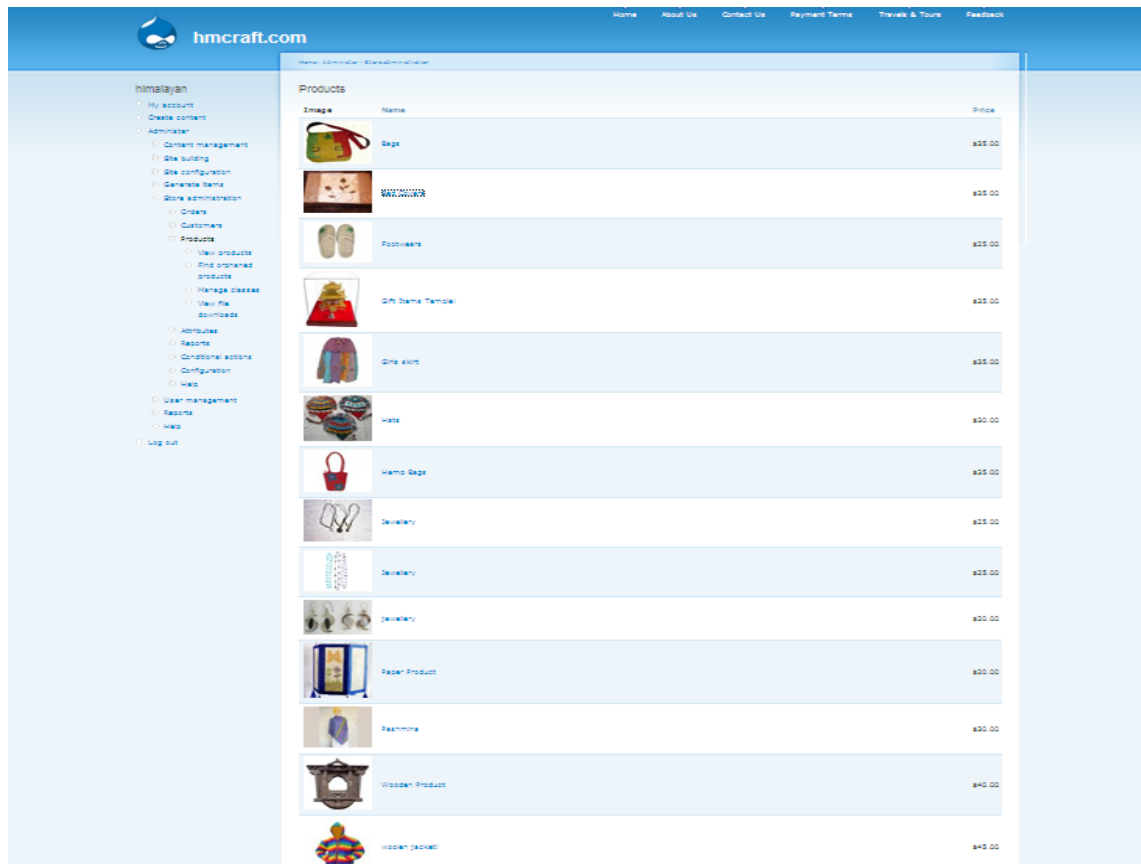


FIGURE 16 Screenshot for Product Lists.

5.1.4 Checkout Process

When the customer orders the products, a verification email is send to the customers with the confirmation of the products. All the products that had been ordered are listed in the orders page, administrator can view the orders and send the final conformation with the order numbers to the customers.

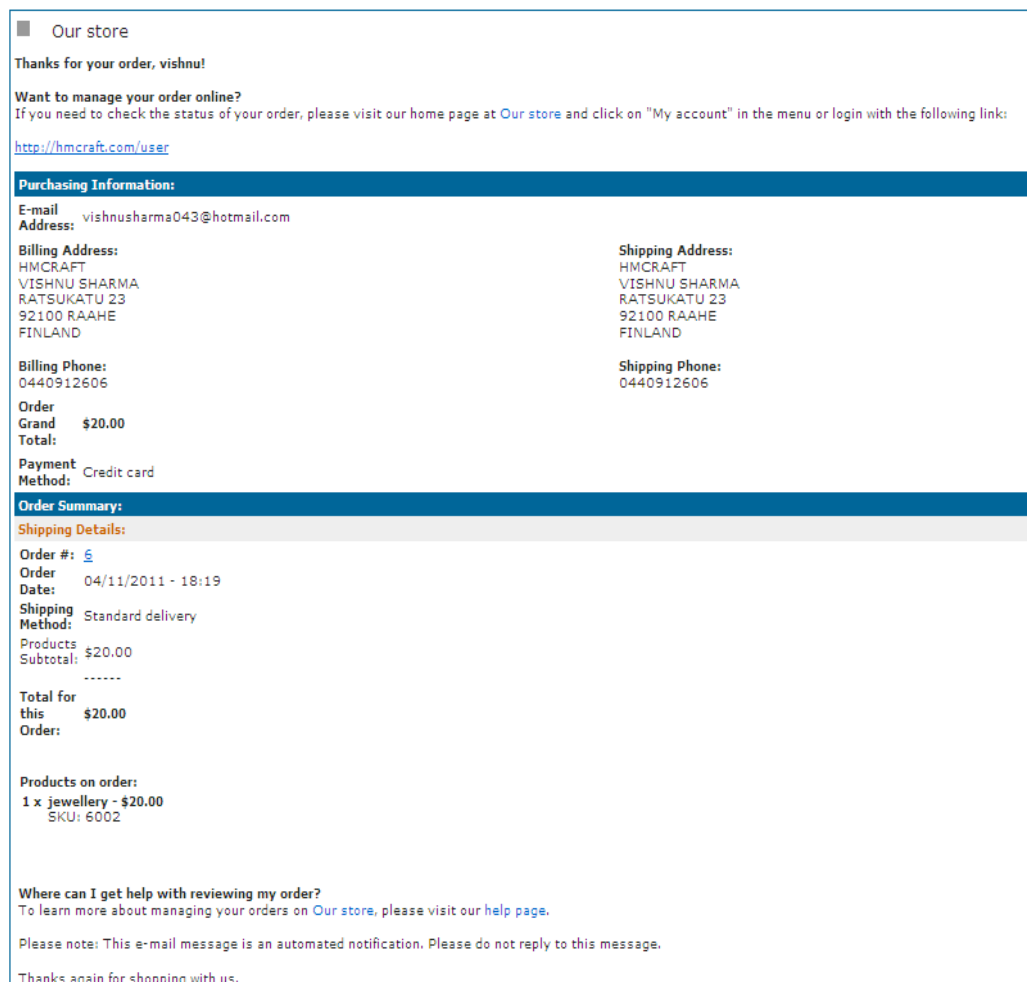


FIGURE 17 Screenshot for Orders Conformation.

5.1.5 List Orders

Administrator can view the list of the orders the customers made. Orders are viewed by status. Actions include the Order ID, Customer name, Total price for the products, Purchased day and the Status of the payment. For example the invoice made from Customer Vishnu Sharma for the purchase of jewellery is shown below.

himalayan

- My account
- Create content
- Administer
 - Content management
 - Site building
 - Site configuration
 - Generate items
 - Store administration
 - Orders
 - View orders
 - Create order
 - Search orders
 - Customers
 - Products
 - Attributes
 - Reports
 - Conditional actions
 - Configuration
 - Help
 - User management
 - Reports
 - Help
- Log out

Home About Us Contact Us Payment Terms Travels & Tours Feedback

hmcrafter.com

Home > Administer > Store administration > Orders

Order 6 [View](#) [Edit](#) [Invoice](#) [Payments](#) [Packages](#) [Shipments](#) [Log](#)

Ship to:
HMCRAFT
VISHNU SHARMA
RATSUKATU 23
92100 RAAHE
FINLAND
0440912606

Bill to:
HMCRAFT
VISHNU SHARMA
RATSUKATU 23
92100 RAAHE
FINLAND
0440912606

Customer info:
Customer number: 11
Primary e-mail:
vishnusharma043@hotmail.com

Payment:
Balance: \$0.00 (View)
Method: Credit card
View card details.
[Process card](#)

Products:

Qty	Product	SKU	Cost	Price	Total
1x	jewellery	6002	\$0.00	\$20.00	\$20.00

Subtotal: \$20.00
Total: \$20.00

Order comments:

Date	User	Notified	Status	Comment
This order has no comments associated with it.				

Admin comments:

Date	User	Comment
04/11/2011 6:23:22 PM	-	Credit card charged: \$20.00
04/11/2011 6:23:23 PM	-	Order created through website.

Update order:

[Add an order comment](#)

[Add an admin comment](#)

Order status: Payment received Send e-mail notification on update. [Update](#)

FIGURE 18 Screenshot for List Orders.

5.2 Site Configurations

Drupal is a very easy platform that provides many option to change the pages of sites, how user interact with it, and the kind of products, pages you want to display. Hmcraft has used two different themes one for administer and one for normal users. Himas theme is used for the normal users where as Garland is used for administer. After installation and enabling the modules, most of them appear in Administer>site configuration menu where the functionality of the modules can be configured. In this chapter the module setting are configured for Hmcraft CRM systems. (Drupal Site Configuration, Date of retrieval 18-01-2011)

5.3 Content Management

Content Management, or CM, is the set of processes and technologies that support the collection, managing, and publishing of information in any form or medium. There are two fundamental elements to content management. Storing stuff in a content repository and supporting the workflow of a group of people engaged in putting into that repository. For example, an instance of digital content is created by one or more authors. Over a time that content may be edited. One or more individuals may provide some editorial over a sight thereby approving the content for publication. Publishing may take many forms. Publishing maybe the act of pushing content out to others, simply granting digital access rights to certain content to a particular person, or a group of people. Later that content may be superseded by another form of content and thus retired or removed from use.

Content management is an inherently collaborative process. It often consists of the following basic roles and responsibilities:

5.3.1 Comment

Comment module allows the visitors to comment on the sites. Default comment setting set to Read/Write to allow comments or disabled to prevent comments. Comment permissions are assigned to user roles and are used to determine whether anonymous users are allowed to comments. Hmcraft allows registered users to comment on the feedback page so will be up to date with the feedbacks from the customers.

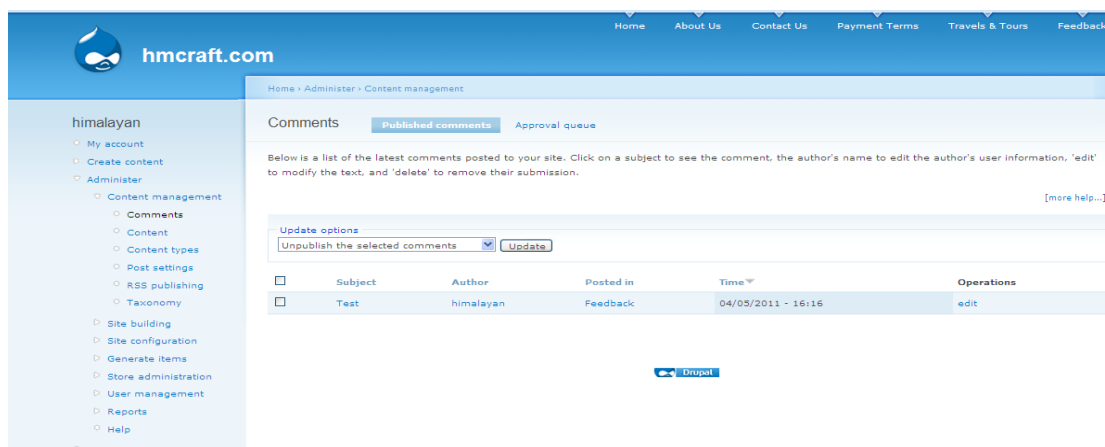


FIGURE 21 Screenshot for Comments.

5.3.2 Content

Any piece of information or data on a site pages, products, articles, block, and feedback are contents. Administer are allowed to review and manage the site content. Reviewing sites, editing sites, adding products, deleting sites can be done in this section. The node module manages content on sites and stores all posts as a “node”.

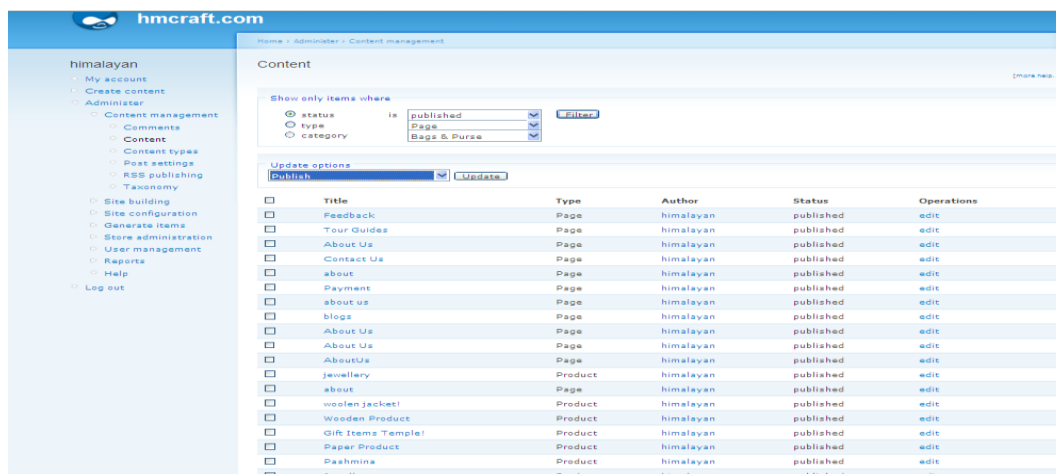


FIGURE 22 Screenshot for Content

5.3.3 Content Types

By Default Drupal install two content types called “page” and “story”. Publisher is responsible for releasing the content for use. Administer can create his own content types such as Forum, poll, Blog entry. To create a new content type, clicks add a new content type, for identification name, type and description of the content types are needed.

5.3.4 Post setting

If the site is experiencing some problems with permission, you can use post setting to rebuild the permission cache. Disabling modules or configuration changes to permissions are the main cause for these kinds of problems. Rebuilding will remove all privileges to posts and replace them with permissions based on new settings. Not only rebuilding, it also provides a default maximum number of posts to display in the front page and to trimmed the post with the maximum number of characters with a preview post which allows previewing the page before submit ting.(Post setting, Date of retrieved, 20-01-2011)

5.3.5 Taxonomy

Taxonomy is a content relationship, In Drupal, the Taxonomy module is used to organize a website's content. It is a key piece of the site's information architecture. In Hmcraft Taxonomy is used as product categories. Each product belongs to either a categories or sub categories.

5.4 Drupal Model

Modules are plugins that extend Drupal's core functionality. You can enable modules by selecting the Enable check boxes and clicking the save configuration button. Once a module is enabled, a new permission may be available. The List of enabled optional core modules that were used with Hmcraft are colour, comment, Database logging, Help, update status.

For the Development Modules Hmcraft has enabled, Devel, Devel generate, Devel node access, Performance access, performance logging, image cache module.

For the other modules, Hmcraft has enabled Himas, Thickbox, Token actions, token starter, Attributes, catalogue, file download, shipping, tax reports, cart links, product kits, stock and test gateway.

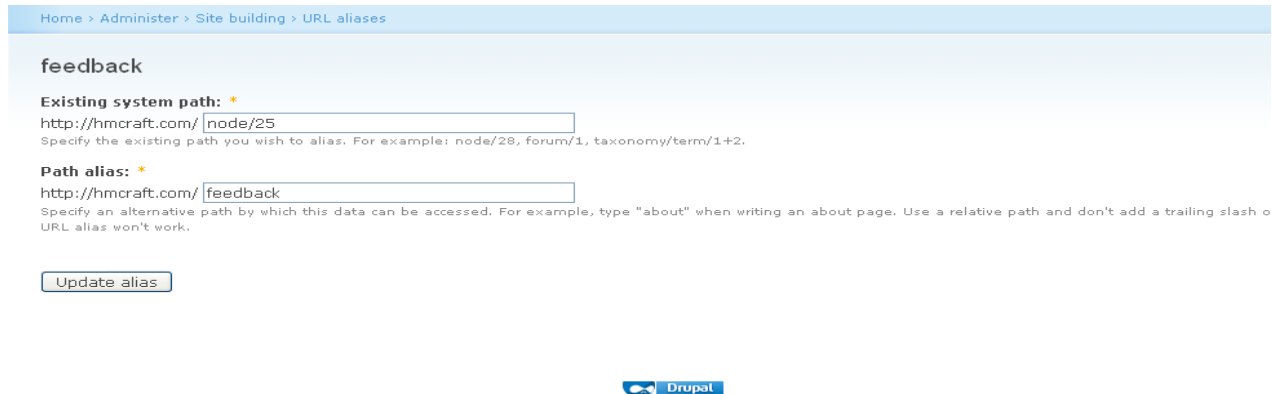
Content Construction Kit allows creation of new content types. Additional module provide supports for more data types to be used with CCR. The enabled modules for CCK are Content Copy, Content Permission, Field group, Image Field, Node Reference, Number, User Reference.(Drupal Modules, Date of retrieval 04-01-2010)

5.5 Drupal Terminologies

Being a complex system, community around Drupal has developed a vocabulary of its own. The most common Drupal related items are as follows

5.5.1 URL aliases

A URL is the address that defines the route to locate an object on an internet server. Generally, the syntax for an URL contains the scheme, host name, port, path and filename, for example <http://www.Drupal.org/node/937>.



The screenshot shows the Drupal administration interface for setting URL aliases. The breadcrumb trail at the top reads "Home > Administer > Site building > URL aliases". The page title is "feedback". There are two main input sections: "Existing system path: *" with a text input containing "http://hmcrafft.com/node/25" and a small help text below it: "Specify the existing path you wish to alias. For example: node/28, forum/1, taxonomy/term/1+2."; and "Path alias: *" with a text input containing "http://hmcrafft.com/feedback" and a small help text below it: "Specify an alternative path by which this data can be accessed. For example, type 'about' when writing an about page. Use a relative path and don't add a trailing slash or URL alias won't work.". At the bottom left of the form is a button labeled "Update alias". At the bottom center is the Drupal logo.

FIGURE 26 Screenshot for *URL aliases*

In the above figure, node has been assigned to every page and is replaced by path alias. In case of Hmcrafft, existing system path <http://hmcrafft.com/node/25> is replaced by <http://hmcrafft.com/feedback>

5.5.2 Blocks

Blocks are boxes of content of a web page. The block administration page provides a drag and drop interface for assigning a block to a region, and for controlling the order of blocks within regions. For the Hmcrafft, product catalogue block and user login block are configured for the first sidebar. Menu page are configured for the navigation bar. Shopping cart are configured for Content top.

Home About Us Contact Us Payment Terms Travels & Tours Feedback Navigation bar

Product Categories

- Bags & Purse
- Bed Covers
- Footwears
- Garment
- Hats & Globes
- Jewellery
- Paper Product
- Pashmina
- Religious Items
- Wooden Product
- Woolen Product

Highlighted content

Home > Administer > Site building >

Blocks

For easier theme development, the theme registry is being rebuilt on every page request. It is extremely important to [turn off this feature](#) on production websites.

List Add block

Himas Garland

This page provides a drag-and-drop interface for assigning a block to a region, and for controlling the order of blocks within regions. To change the region or order of a block, grab a drag-and-drop handle under the Block column and drag the block to a new location in the list. (Grab a handle by clicking and holding the mouse while hovering over a handle icon.) Since not all themes implement the same regions, or display regions in the same way, blocks are positioned on a per-theme basis. Remember that your changes will not be saved until you click the Save blocks button at the bottom of the page. Click the configure link next to each block to configure its specific title and visibility settings. Use the [add block page](#) to create a custom block.

Shopping cart 0 Items Total: \$0.00

configure

Content top

Block	Region	Operations
First sidebar		
+	Catalog	First sidebar configure
+	User login	First sidebar configure
Second sidebar		
+	Navigation	Second sidebar configure
Navigation bar		
+	Primary links	Navigation bar configure
Highlighted content		
No blocks in this region		
Content top		
+	Shopping cart	Content top configure
Content bottom		
No blocks in this region		
Header		
No blocks in this region		
Footer		
No blocks in this region		
Page closure		
+	Devel Node Access by User	Page closure configure
+	Devel Node Access	Page closure configure
Disabled		
+	Development	<none> configure
+	Powered by Drupal	<none> configure
+	Recent comments	<none> configure
+	Secondary links	<none> configure
+	Syndicate	<none> configure
+	Who's new	<none> configure
+	Who's online	<none> configure

Save blocks

Content bottom

himalayan

- My account
- Create content
- Administer
 - Content management
 - Site building
 - Blocks
 - ImageCache
 - Menus
 - Modules
 - Themes
 - URL aliases
 - Site configuration
 - Generate items
 - Store administration
 - User management
 - Reports
 - Help
- Log out

configure edit menu

Second sidebar

FIGURE 27 Screenshot for *Drupal Blocks Setting*.

5.5.3 Theme

A theme is a file or collection of files (PHP, INFO, CSS, JPG, GIF, PNG), which together determine the look and feel of a site. Drupal modules define themeable functions, which can be overridden by the theme file. Administrator can choose the theme for different users, for the users with administrative rights, a Garland theme is enabled where as for the Normal users the himas theme is installed and later made enabled in the drupal systems.

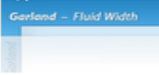
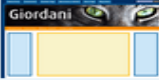







Screenshot	Name	Version	Enabled	Default	Operations
	Garland Tableless, recolorable, multi-column, fluid width theme (default).	6.20	<input checked="" type="checkbox"/>	<input type="radio"/>	configure
	Giordani Marinelli theme with left sidebar first.	6.x-2.96	<input type="checkbox"/>	<input type="radio"/>	
	Gnifetti Marinelli with both sidebars on the left.	6.x-2.96	<input type="checkbox"/>	<input type="radio"/>	
	Himas Another online store template.		<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	configure
	Marinelli A fresh 3-column layout for Drupal. Still usable over 4000px!	6.x-2.96	<input type="checkbox"/>	<input type="radio"/>	
	Marvin Boxy tabbed theme in all grays.	6.20	<input type="checkbox"/>	<input type="radio"/>	
	Minelli Tableless, recolorable, multi-column, fixed width theme.	6.20	<input type="checkbox"/>	<input type="radio"/>	
	Pushbutton Tabled, multi-column theme in blue and orange tones.	6.20	<input type="checkbox"/>	<input type="radio"/>	
	Zen Zen sub-themes are the ultimate starting themes for Drupal 6. Read the online docs or the included README-FIRST.txt on how to create a sub-theme.	6.x-2.0	<input type="checkbox"/>	<input type="radio"/>	

FIGURE 28 Screenshot for *Drupal Theme*.

5.5.4 Menu

In Drupal, the term menu refers both to the clickable navigational elements on a page, and to Drupal's internal system for handling requests. When a request is sent to Drupal, the menu system uses the provided URL to determine what functions to call. The new menu can be added through the primary links, adding a menu with proper path, Menu link title, Discription and saving the primary links. Enabling the new menu items from the primary links makes the new menus to appear in the sites.

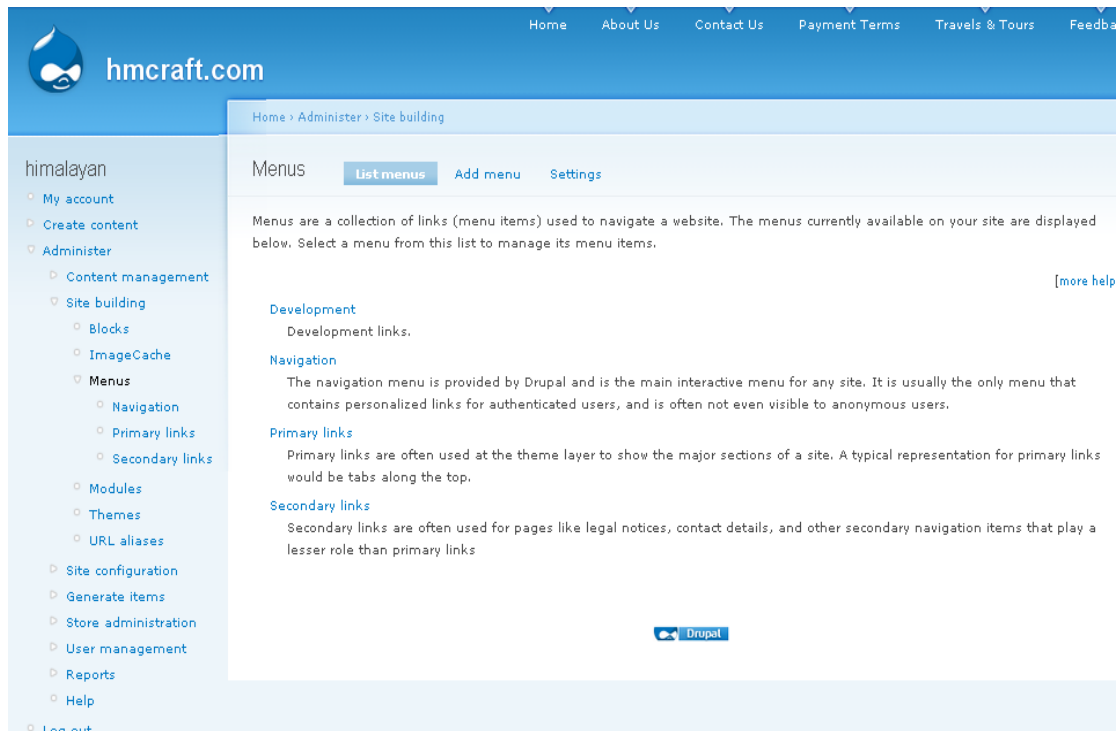


FIGURE 29 Screenshot for *Drupal Menu*

5.5 Create Content

By default, Drupal offers two different content types a page and a story, whereas a product and product kit come along with the installation of ubercart modules. Content in any material makes up the web page. As a user with administer content types permission, one can quickly define new content types and make them available to the sites. Simplicity is golden when it comes, implementing a CMS. The process of creating new content types involves defining a name for the content types, setting the default content item options, and then adding one or more field.

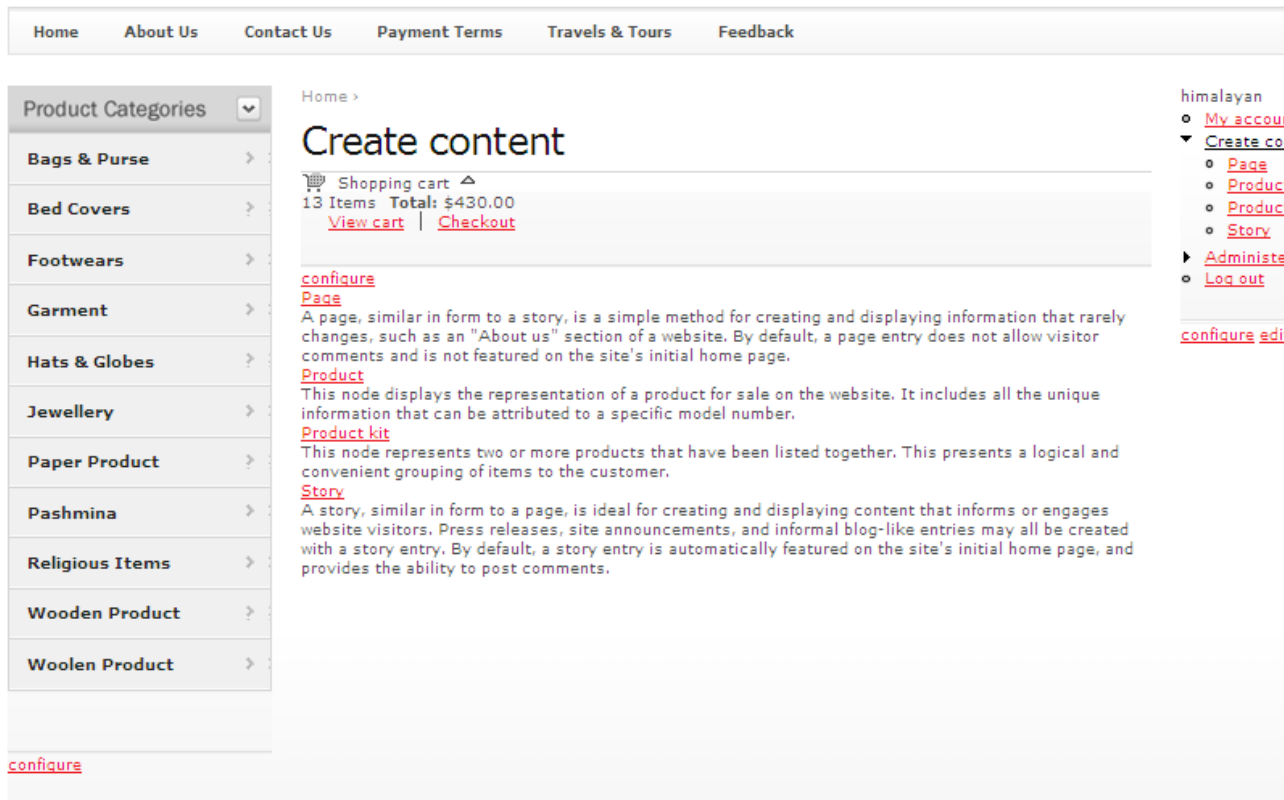


FIGURE 30 Screenshot for Create Content.

5.5.1 Page

A page is a simple method of crating and displaying information that rarely changes, such as an "About us" section of a website. By default, a page entry does not allow visitor comments and is not featured on the site's initial home page. The page type is meant to allow adding pages that can be found on the sites. About us, contact us, terms and payment, feedback pages are good candidates for the page type, although can spruce these up with bit dynamic content and HTML. For creating a page Title, Body and URL path should be configured. For example, " Create Us" as a title of a page has been set with the body contents "Testing" and URL path settings "hmcrafft/about us.

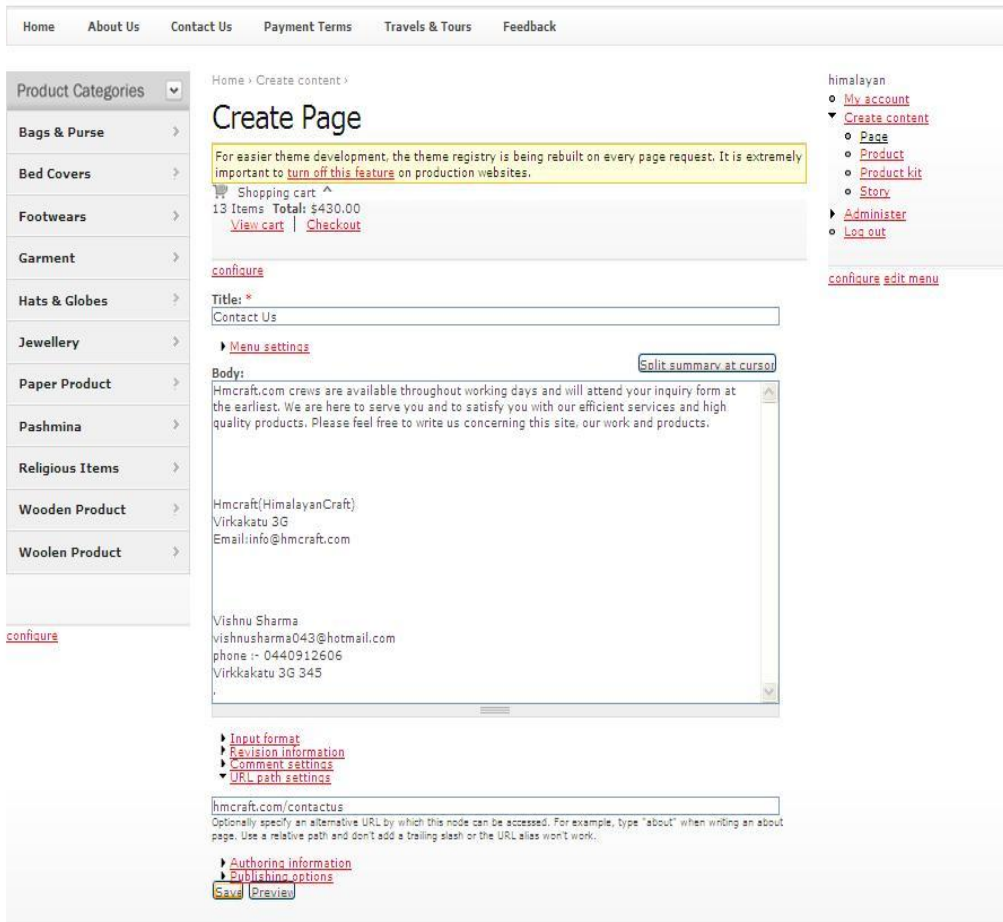


FIGURE 31 Screenshot for Create Page.

5.5.2 Product

This node displays the representation of a product for sale on the website. It includes all the unique information that can be attributed to a specific model number. Configuring all the description, name, catalogue, images of products, the unique key of each products, Price, Cost, Selling Price, Weight Unit of measurements in inches, all product information will be added in the site so the customers can get the details of each products.

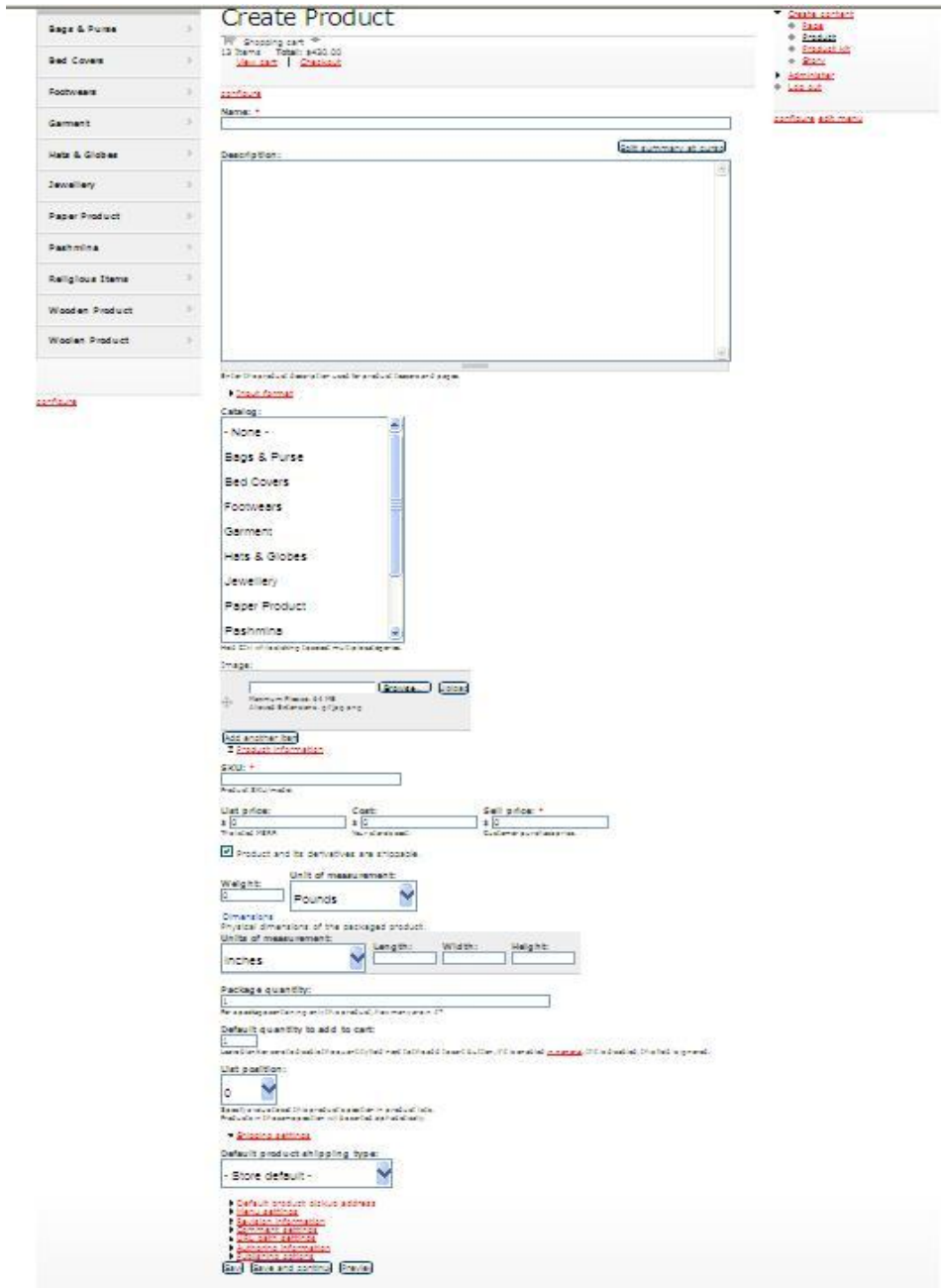


FIGURE 32 Screenshot for Product.

5.5.3 Product kit

This node represents two or more products that have been listed together. This presents a logical and convenient grouping of items to the customer. Product kit provides an addition option for the customers. Product Kit is used normally in a case for example, if the customer buys a computer he can get those additional things that comes along with the computer for example charger.

5.5.4 Story

A story does post author information, timestamps, or comment by default and is set to automatically promote all post to the front page. Stories are articles in their simplest form they have a title, a teaser and a body, but can be extended by other modules. The teaser is a part of the body too. Stories may be used as a personal blog or for new articles.

When story is created in Drupal, it is stored in database as a node and is assigned a node ID. In Drupal, content is limited to objects that can receive comments created by users, and are assigned a node id. (Drupal Create Content, Date of retrieval 22-01-2011)

5.6 Drupal Catalogue Block

The catalogue menu block was themed. The default block.tpl.php was overridden by calling the uc_catalog_block() hook theme. Since we created and used our own template theme called 'himas', the hook function was named himas_uc_catalog_block() and placed in the template.php file.



FIGURE 34 Screenshot for a Catalogue block

5.7 Drupal Catalog Product Grid

The `catalog_product_grid()` block was themed. The default `theme_uc_product_grid()` was overridden by calling `himas_uc_catalog_product_grid()` hook. This theme hook also resides in `template.php`

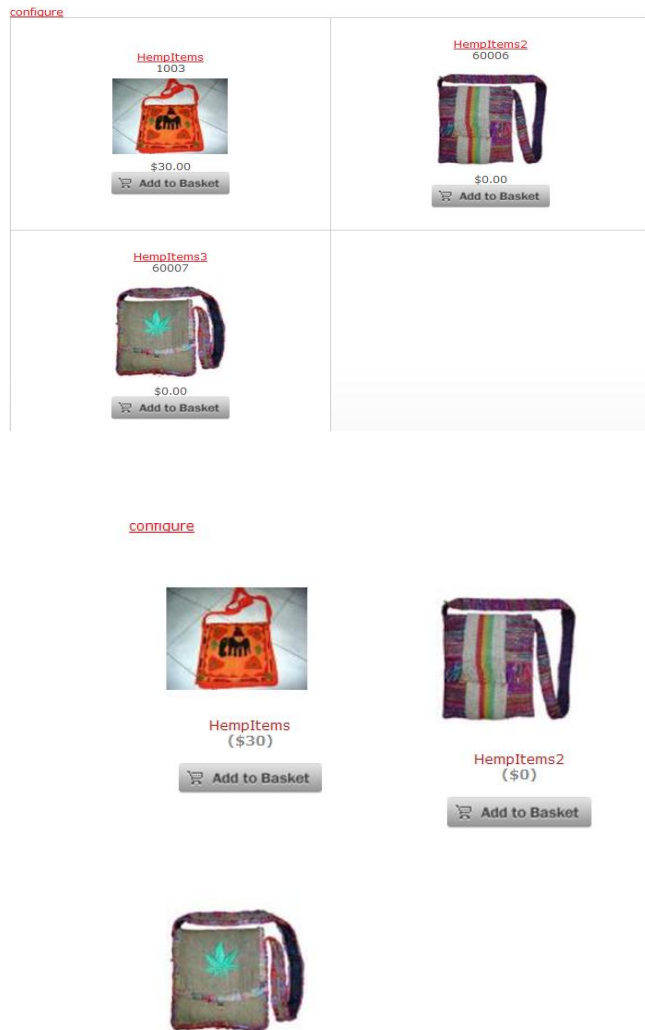




FIGURE 35 Screenshot for a Catalogue product grid

5.8 Cart_view_form

The cart_view_form block was themed. The default theme_uc_cart_view_form was overridden by calling himas_uc_cart_view_form hook. This theme hook also resides in template.php

[configure](#)

Remove	Products	Qty.	Total
<input type="checkbox"/>	 HempItems2	1	\$0.00
<input type="checkbox"/>	 HempItems3	6	\$0.00
<input type="checkbox"/>	 Bed Covers	2	\$70.00

[configure](#)




<input type="checkbox"/>	 HempItems2 Price: \$0	Quantity <input type="text" value="1"/>
<input type="checkbox"/>	 HempItems3 Price: \$0	Quantity <input type="text" value="6"/>
<input type="checkbox"/>	 Bed Covers Price: \$70	Quantity <input type="text" value="2"/>

FIGURE 36 Screenshot for a Cartview Product

5.9 Block Menu Primary Link

The primary link's block theme was overridden with a template file 'block-menu-primary-links.tpl.php'. For this theme override to work both 'block-menu-primary-links.tpl.php' and 'block.tpl.php' in the 'templates' folder of the himas theme. In Drupal 6.x, without adding block.tpl.php, the overriding won't work.

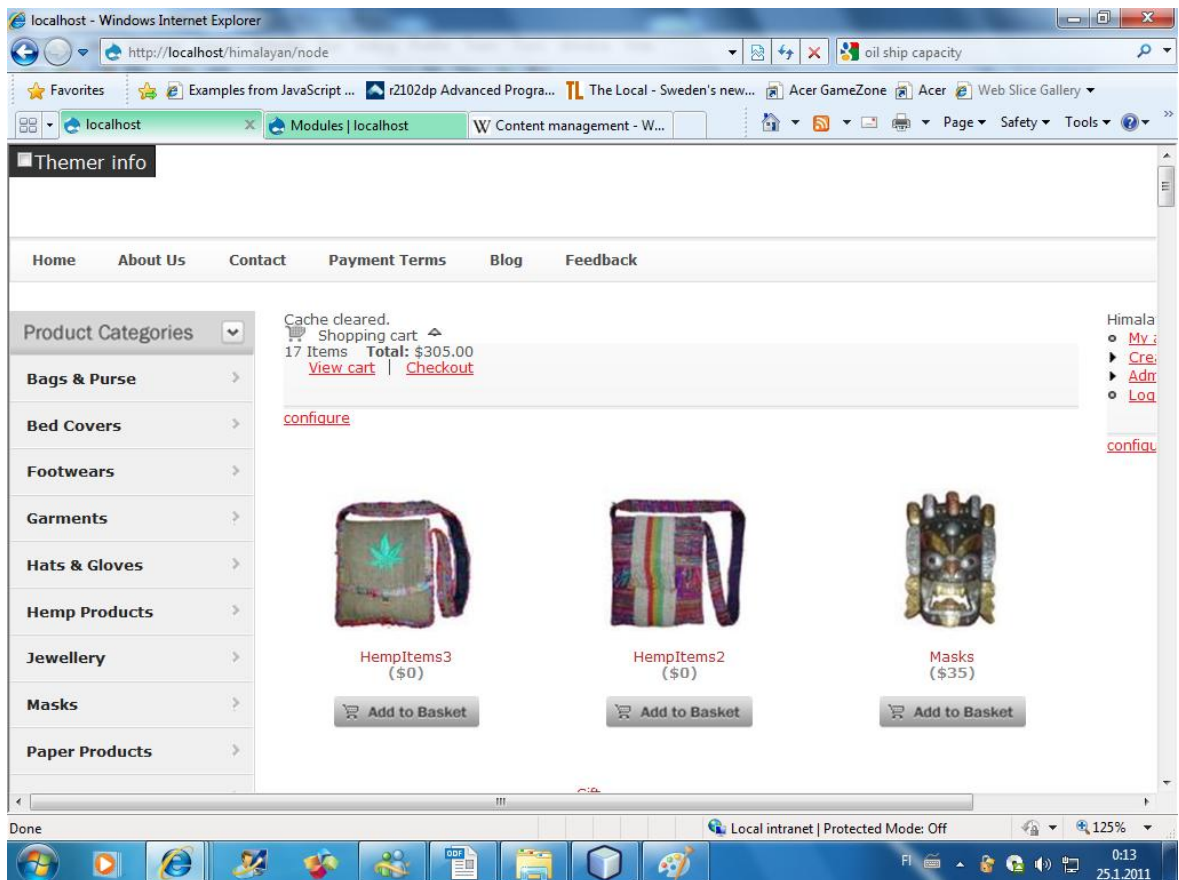


FIGURE 37 Screenshot for a Menu

5.10 Node product tpl

The product node was also themed. This was done by overriding the node.tpl.php template file with node-product.tpl.php. The both theme template files were placed in the templates folder.

The screenshot displays a product view with six items arranged in a 2x3 grid. Each item has a title, price, and an 'Add to Basket' button. The items are:

- HempItems3** (\$0)
- HempItems2** (\$0)
- Masks** (\$35)
- Hat & Globes** (\$15)
- Gift Item** (\$45)
- Paper Product** (\$12)

Below the grid is a list view showing the same items with their submission details and prices:

- HempItems3**: Submitted by [HimalayanCraft](#) on Thu, 12/23/2010 - 09:31. Price: \$0.00.
- HempItems2**: Submitted by [HimalayanCraft](#) on Thu, 12/23/2010 - 09:30. Price: \$0.00.
- Masks**: Submitted by [HimalayanCraft](#) on Thu, 12/23/2010 - 06:17. Price: \$35.00.

Each list item includes an 'Add to Basket' button and an 'Add new comment' link. A 'config' link is visible on the right side of the list view.

FIGURE 38 Screenshot for a Product view

5.11 Home Screen

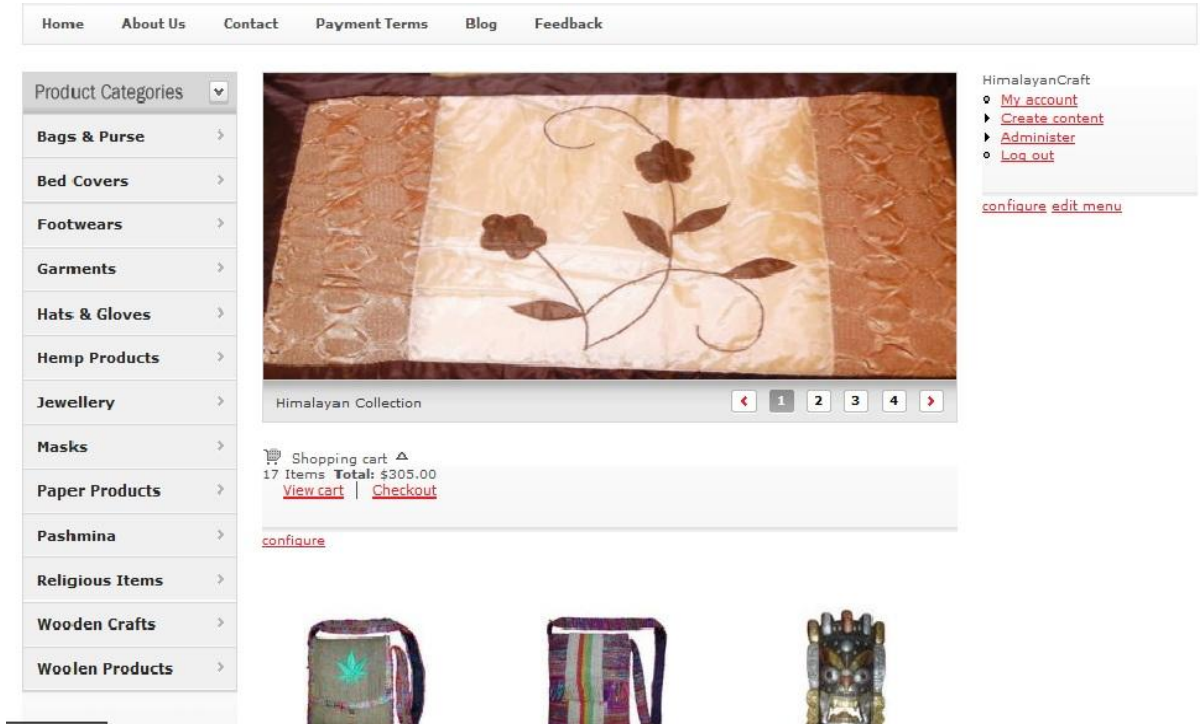


FIGURE 39 Screenshot for a Home screen

This is the home screen displaying Product Categories, Menus, Product and Himalayan collection frames, which holds four products images and displays them one after another in every 600 milliseconds in a loop. In the right side product catalogue block is integrated, users can view the catalogue where products and sub products are listed. Menu block is integrated in the first primary link. Account Login is integrated in the left side of the page, register user can view the account login block in the left site where as for an anomalous user, login block will appear just below of the product catalogue block. Node product is integrated in the middle. Ten products will be listed in every next page of the home screen with the hyperlink previous and next so user can view all the products with the next and previous page.

6 TESTING

This chapter describes the testing of the Hmcraft.

6.1 UI testing

I start testing the sites with UI testing, each products, products images, hyperlinks, menu, submenu, are tested in internet explorer, Mozilla, Google chrome.

6.1.1 Get Focus Effect on the Products

Rolling over the mouse on the Products Categories, list icon shows the available submenu items.

6.1.2 Sub Menu Testing

The Submenu products that are listed inside Product Categories are tested

6.1.3 Image

The product image are tested, the image are working as it has configured. The size of image gets bigger when the user clicks the products.

6.1.4 Hyperlink

All the pages are configured with the proper titles and the body. Customer can click the different pages and it works accordingly.

6.2 User profile

In User Profile testing new user registration, login form, feedback form, and email conformation are tested.

6.2.1 New user registration

User can create a new user account with the name and the valid

6.2.2 Conformation email

User can get an email for the conformation if the email address is valid.

6.2.3 Login Task

User can login with his own account, after clicking the validation email

6.2.4 Password

User can request for a new password and can change the password.

6.3 Purchase procedure

The billing information, credit card number, shipping calculation, payment method is tested in internet browser, Firefox and Google chrome.

6.3.1 Selecting / adding to basket

User can select the particular products, and add them to the basket. User can remove the particular products by clicking the checkbox and can update the cart.

6.3.2 Data entry of buyer

User can enter all information in the Text Field.

6.3.3 Invalid credit card input

A testing banking API of drupal is enabled. This required user name, address, billing address, street, card number. It checks using the standardized Drupals module.

6.3.4 Shipping calculation

Shipping Testing is enabled with a scale of -5.

6.3.5 Payment method selection

User can select the payment method by selection, visa, Master Card, American Express, Discover.

6.3.6 Order comment

User can leave the comment for the orders. For example in case for fast delivery service or similar situation

6.3.7 Purchase confirmation

User gets a conformation email for an order. This email is send through drupal system, where as administrator can send an extra email with the status of the products ordered.

6.4 Admin/ test specifications

In administrative specification testing, users with the administrative privilege are tested. Adding, viewing, deleting the products and the orders are tested.

6.4.1 Order – edit / delete

Administrator Can View the orders, Edit, and delete the orders. Inside the edit, administrator can change the product order states with conformation email to the user. And view transaction category wise.

6.4.2 View – user details

Administrator can view the details of the user with Purchase history and can edit them.

6.4.3 Sales report – complete

Administrator can view the sales reports. Can view the pending, processing, completed, cancelled status and change them. This has been tasted. Administrator can view sales calculation and taxation calculation.

6.5 Browser Testing

The site is tested in Internet Explorer 8.0, Firefox 3.5 and Google Chrome 10.0.648.

7 THE POSSIBILITIES OF FURTHER DEVELOPMENT

This thesis leaves some room for further development. The product is usable as it is and meets its requirement, but as the development process went on, some new ideas about implementing things differently occurred. All of these ideas could not be implemented due to pressing timetable, but further development for this system will continue.

Integrating the e-commerce Finnish banks APIs and allowing direct login to authorize payments
Integrate with PayPal and other payment options. Contribute the Finnish banks Integration code to ubercart community

The “Add to cart” functionality could be redone with more Ajax functionality. So that there is no need for a page refreshes just to add a product to cart it will be more reliable to use the sites.

8 CONCLUSION

From little or no experience, this thesis has exposed me to a lot of intricacies necessarily to develop an e-commerce business and e-commerce site. The main goal of this thesis work was to start a business and to build a web application, e-commerce sites.

From the e-commerce application side, I was exposed to a lot of technologies. Drupal was the first one. With Drupal, I got a firsthand experience of what open source coding feels like. I learned to use Drupal for its CMS (Content Management System) power. I learned how to administer Drupal, how to theme its content and how the internals work. I can attest that Drupal has a steep learning curve. It takes patience and hard work to understand how to think in Drupal. In my opinion, + Drupal is 10% of PHP coding and 90% of Drupal coding. Once you learn how to tame the Lion called Drupal, then you can leverage its power and full potential. Drupal is a powerful and full featured CMS platform.

To accomplish the e-commerce aspect of the application, I came across Ubercart. I decided not to redesign a wheel and roll out my own e-commerce applications, because Ubercart met my Needs. Ubercart is an open source e-commerce application that is built on Drupal (The best of both worlds in one solution)

In the very end, I learnt a lot. My PHP, HTML, CSS, JavaScript and jQuery skills have been developed / improved enormously; also, i have gained knowledge of business skills, about the markets, and general setting up a business and all. It's been a thrilling experience in every respect.

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