User Experience Design (UX design) for an E-commerce website: a case of Shop The Planet

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User Experience is how a person feels while using a product, system, or service. All users have experiences when using a product or service, whether it is physical medium, a software application or a website. User Experience design is the art and science of making that experience effective and satisfying.

The aim of this thesis project is to develop the front-end design for ShopThePlanet, a business-to-consumer e-commerce website. The design is developed in corporation with a backend developer and the owner Mr. Francis Lynch who provided the blueprints for the site. ShopThePlanet is under the company called Alpha Omega Marketing Oy (TBC). The owner of Alpha Omega Marketing Oy is Mr. Francis Lynch.

This project is based on theoretical research for best practices about how a website should be designed focusing on the discipline of user experience design. This project was collaboration between the NEON SID-labs at Laurea University of Applied Sciences and a company named Alpha Omega Marketing OY (TBC) to develop their e-commerce venture web site Shop The Planet.

Key words, User Experience Design (UX design), Business-to-consumer, ShopThePlanet
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1 Introduction

The role of educational institutions and working life partnership greatly helps student development and working life training. Many studies suggest that integrating theoretical and practical knowledge is significant for developing competences. Workplace training is part of the curriculum when studying at Laurea University of Applied Sciences (Virtanen 2008). I have found interest in developing my skills around web technologies and especially using user experience design processes. My interests led to the selection of this thesis topic on a working life case and user experience using web technologies. "User experience simply refers to the way a product, software application or a website behaves and is used in the real world. A positive user experience is one in which the goals of both the user and the company are met. Usability is one attribute of a successful user experience, but usability alone does not make an experience positive for the user.” (Garrett 2011)

User experience design consists mainly of business goals, customer goals, user interface and back-end process. These goals are designed into the service or a product in order to have a positive user experience. (User Experience Design Fundamentals 2013) A web site is a self-service product. The website must be designed in such a way that the user is able to navigate it without any special assistance. (Garrett 2011)

1.1 Project Background

This project was a collaboration between the NEON SID-labs at Laurea University of Applied Sciences and a company named Alpha Omega Marketing OY (TBC). NEON SID-labs provides excellent opportunities forming cooperation with working life partners and company (Laitinen-Väänänen and Vanhanen-Nuutinen 2013). Students are challenged to acquire new skills using self-regulated learning (SRL) model. The real life cases are provided as learning object and partnership with company provides project to implement learning outcomes. On this project I was responsible for the front-end infrastructure. The website is designed to have a wide selection of online shops around the globe, and "to continually advance the website and take advantage of modern techniques to provide the ultimate user experience". (Lynch 2012. Personal communication)

1.2 The Company

ShopTheplanet will be the first website completed under the company name Alpha Omega Marketing OY (TBC). Alpha Omega Marketing will be owned 100% by Mr Francis Lynch, and advisory board will be set up to assist in the initial growth of the company. Investment will be sought to further develop the company after initial company growth. (Lynch 2012)
1.2.1 Business model

The Website is based on an affiliate model where ShopThePlanet will be paid commission (When the users purchase from the online store).

Figure 1: ShopThePlanet Business model

1.2.2 Internationalization

The idea behind ShopThePlanet is to take a competitive advantage by representing online shops across geographical boundaries that many competitors still use. The main audience target will be UK but also other markets will be presented such as US, Finland, Sweden, Germany and many other countries. True internationalization will occur when multiple languages are added to the website and market directly to the countries in their native languages. (Lynch 2012)

1.3 Purpose of the Project

The purpose of the project is to design and develop an interactive business-to-customer website using modern techniques to provide the ultimate user experience. The aim of this website is to have a wide selection of online shops around the world, to provide the user with an exceptional platform where they can easily find shops most relevant to their needs. Satisfied customers will bring more customers to the affiliate online stores and more commission for ShopThePlanet. The aim of this thesis project will focus on the front-end or client side of shopThePlanet to provide an easy to use design for different customers. (Lynch 2012)
1.4 Thesis Problem

The project focuses on fixing the following challenges:

Shop details content: The site must provide all the information a user may need in order to ascertain if they wish to visit the shop. This should include description, user comments, ratings, screen shots/pictures, video content.

Social media: Social media elements need to allow users to recommend both the site and individual shops represented on the website. This includes use of the Facebook commenting system. (Lynch 2012)

1.5 ShopThePlanet Objectives

ShopThePlanet wants to provide the user with an exceptional platform where they can easily find best available online stores according to their preferences, interests and location. ShopThePlanet will promote all shops without geographical boundaries, the website will provide additional benefits for the users including coupons, vouchers and competitions.

1.6 Research approach

This project in this thesis focus on action research method into best practices on how a website should be designed focusing on the discipline of user experience design.

Action research can be label as learning by doing, where the researcher in this case students from service innovation lab (SID) collaborate with a client Alpha Omega Marketing Oy (TBC) to solve a problem. Students and the client worked on designing an e-commerce website names ShopThePlanet, to provide its users with the best user friendly website and all the necessary information regarding the main purpose of the website.

This research method is used in real situations where there is an active interaction between the students (researchers) and the client. The main problem was to design shop details content with necessary information and functions that will able the users to visit a wide variety of online shops and be able to share their experiences with their friends.

With action research method it is important for the researcher to not focus only on the completion of the project disregard the reasons for doing it. (Dawson 2009)
2 Theoretical background

Every designer has a different approach to web design, but they usually the common elements for designing a website consists of UX design, wire framing, visual design and front end technology.

2.1 User experience (UX) Design

User experience design is the combined result of multiple activities. This can be conducted by an individual or a team of individuals each of whom have different set of skills and disciplines. Some aspects that play into User experience design are user research, interaction design, visual design, information architecture, front-end development, writing and user testing. User experience design essentially explores feasible solutions to design problems, it ensures products met or exceed user expectations, increasing adoption, use and loyalty. (User Experience Design Fundamentals 2013)

According to Hartson & Pyla, User experience definition:
Is the totality of the effect or effects felt by a user as a result of interaction with, and the context of, a system, device, or product, including the influence of usability, usefulness, and emotional impact during interaction, and savouring the memory after interaction (Hartson & Pyla 2012, 5)

User Experience occurs within interaction. It cannot be designed, only experienced. In Figure 3 it illustrate how user experience occurs actively in time within instance of interaction and the usability between the design and the user. (Hartson & Pyla 2012)

![Figure 3: UX within interaction and usage context](image)

A UX process lifecycle

There are four User experience activities namely, Analyze, Design, Implement and Evaluate. These activities can apply to whether you are working with service design, hardware design or web design. In Figure 4 is evaluation centred in the sense that each activity in the lifecycle are evaluated by inspection, testing, analysing and the customers and the users input are involved. (Hartson & Pyla 2012)

Analyse

This is the understanding stage, where customer requirements are extracted and analysed. This stage helps to shape the interaction design process. Contextual Inquiry and Contextual analysis collectively also known as “user research” are among the many possible sub-activities that support analysis. (Hartson & Pyla 2012)
Contextual inquiry is a product user experience lifecycle activity to collect detailed descriptions of customer data for the aim of understanding sensory, mental and physical actions made by users and underlying reasons. Asking or Interviewing alone is not enough when collecting data in contextual inquiry, it is essential to observe the actual work context, problems and the workarounds created by users when the intended system support does not support real needs. The goal of contextual inquiry is to improve work practice and construct or improve system designs to support it. Contextual inquiry includes both interviews of customers and users and observations of learned skills, decision making and physical actions occurring in real-world context. (Hartson & Pyla 2012)

Contextual analysis is the organized analysis of the contextual user work activity data gathered in contextual inquiry, for the purpose of understanding the work context for a new product or service being designed. The insight of raw activity data is accomplished through building a diagram giving a big picture or overview of work (flow model) and combination of work activity notes. (Hartson & Pyla 2012)

Design

Data collected from contextual analysis is extracted and build “design-informing models”, which can be used to bridge the gap toward design. Design-informing models are design-oriented constructs, such as task descriptions or user personas that convert raw data into legible components as design ideas, as elements to consider or take into account in the design. (Hartson & Pyla 2012)
Design thinking paradigm is an approach to creating an experience that consist of emotional impact, principles of art, and social- and value-oriented interaction. Designers are involved to create a new intellectual and satisfying user experience, followed by a team of engineers taking the design concept and provide functionality and make the concept a reality. Design consist of three perspectives used to guide thinking, scoping, discussing and doing design:

- **Ecological Perspective**: is about how the system or the product works in its external environment. It is about how the system or a product interact with its environment in the process.
- **Interaction Perspective**: Is about how users operate the system or product.
- **Emotional Perspective**: Is about social and cultural implications as well as the joy of use. (Hartson & Pyla 2012)

User persona is a design too widely used, personas are fictional characters often developed as a way of representing a particular group based on their shared interests. (Stickdorn & Schneider 2013) Personas act as stand-ins for real users. Even though a persona is a fictional character it should feel real. For the persona to feel real there should be known the basic information about the persona, for example, name, age, education etc. A benefit of using this tool is that the design team can focus on the user goals and needs.

After extracting requirements and the design team conceptualize design alternatives this stage all the requirements and envisioned models are put together. “Conceptual design is the theme, notion or idea with the purpose of communicating a design vision about a system or a product. It is the part of the system design that brings the designer's mental models to life.” (Hartson & Pyla 2012, 336) In some cases design perspectives are emphasised in the storyboards, in this stage usually the key stakeholders are involved.

Prototype

The prototype provides an initial version of a product or service before committing resources to build the desired final product. Prototypes are to be constructed much faster and less expensive, in order to evaluate and refine easily in case there is a problem and changes are needed in the design. (Hartson & Pyla 2012)

The prototype can change greatly in terms of tone and complexity, but the common element will be the volume to test the system or product designed in the real world environment, with proposals and refinements being constantly incorporated. Prototypes are used with the focus on user experience meaning the prototype can also produce concrete evidence on which solutions can be founded. Prototypes can be made in different ways depending on the nature of
the project, in this case when developing a website wireframes (see section 2.2 Website wireframe) and storyboards. (Stickdorn & Schneider 2013)

A Storyboard is a series of drawings or pictures that create a specific chain of events. Storyboard can be made in various ways. The most widely used is the comic-strip format, in which the designer will create some ideas that tell the story of the situation being examined. Storyboards allow stories about user experience to be brought into the design process. Even if it is still a prototype, storyboards can be used to spark meaningful analysis, inspire discussions about potential problems and areas of opportunity. (Stickdorn & Schneider 2013)

Evaluate

This stage is to refine an interaction design. The team will ensure that the user experience targets or goals are met in order to be sure, if the system or product designed to its best potential is to evaluate it with real users. User experience evaluation is about improving the design and not about judging the users, designers and developers. (Hartson & Pyla 2012)

Figure 5: User Experience Evaluation

User Experience evaluation is a combination of formative and informal summative evaluation.

- Formative evaluation: is about collecting non numeric and descriptive data usually describing a user experience problem or issue observed or experienced during usage.
- Informal summative evaluation: is about numeric data, such as user performance metrics or opinion ratings. It is useful for assessing the level of quality due to a design. (Hartson & Pyla 2012)
2.2 Website wireframe

Building websites and applications is a highly visual process, before jumping to the visual design it is important to establish the bones of your design. Wireframe brings clarity to the process of designing a website, which allows us to focus on the actual elements of the page (such as the logo, headings, navigation etc.) (Kahn 2012)

Images for the website, colour scheme, font choices, and images are not a necessity at this stage of the web development. Wireframes focus on what information needs to appear on which before thinking about how the page should look, this is beneficial when showing the wireframes for the site to the client before the main design to ensure the site has all the functions and information required. (Duckett 2011)

Wire framing allows the designer to plan the layout and interaction of the interface without being distracted. This information architecture will determine how the user interacts with the interface. There are different tools used to design wireframes, most common are sketching wireframes on a paper, graphic applications like, Fireworks, Illustrator, Photoshop (960.gs grid system), InDesign and online wireframe tools such as The GIMP, Omnigraffle, Mockingbird, Gliffy, Balsamiq. These tools are the favourites due to their usability, flexibility and ability to make interactive prototypes, export as a Photoshop document (PSD) with editable layers. (Lim 2012)

2.3 Visual Design

Vision Design is the next step in User experience design once the designer has arranged all the necessary information architecture of the website. There are points needed to be taken into consideration at this stage of design when adding colours, images and fonts to your design. There is a cultural expectation when it comes to colours, for instance in real life the colour green means go and colour red means stop. In the digital world these expectations have carried over, users understand visual messages if their colours are coded in the expected way.
The purpose of any kind of visual design is to communicate. By organizing and prioritizing information on a web page helps to showcase its importance to the users. Below shows how visual design can be utilized to communicate the services of a company. (Duckett 2011)
Visual hierarchy

On the left shows a headline with large fonts explaining the service this company provides accompanied by a picture on the right which draw attention of the user. “Most web users do not read entire pages. Rather, they skim to find information. Contrast is used to create visual hierarchy that gets across the page key message and helps users find what they are looking for.”(Duckett, 467)
Contrast is an important aspect of visual design, the right level of contrast between text and background is essential as most people have different types of colour blindness or don’t read well on a computer screen due to various issues with their eye sight.

Grouping

There are several sections of information on this page. At the top there is the company’s logo and navigation. Below is details that introduces the company’s services. Further down are groups showcasing the services, the costs involved and the service user. (Duckett 2011)

Similarity

Headings and icons presented at the bottom left of the Figure 4 are similar. All the links in the body text are in blue which indicates the text can be clicked. (Duckett 2011)

2.4 Front end technology

Front end design refers to the visual layer of web sites and applications. Front end design typically includes layout, typography, images and other visual elements and their styling. Back end technology usually consist of different processes that happens on the server. The most frequently technologies in Front end design are as follows:

HTML5

HTML stands for Hypertext Markup Language. The standard language used for structuring content on the web. Hypertext refers to the ability to create links to other pages and other web resources. Markup means is used for creating pages of formatted text along with images and other resources embedded in the webpage. (Weinman.2012. HTML Essential Training)

CSS

CSS stands for Cascading Style Sheets. This is the language that is used to add presentation styling to Hypertext Markup Language (HTML) documents. Cascading Style Sheets (CSS) is a powerful and flexible way to add format to a webpage for presentation. (Williamson.2012. CSS Fundamentals)
JavaScript

JavaScript is a programming language, often it is referred to as a scripting language or a client-side language. JavaScript only works inside another application called the web browser, this scripting language is designed to manipulate web pages. (Allardice. 2011. JavaScript Essential Training)

Figure 8: Admin view of HTML code

Figure 5 shows the admin code view of HTML, the highlighted area is where the code provided by the client is placed. This code has a tracking source which shows if customers made their purchases through the shops represented on ShopThePlanet website.

3 Designing plan

ShopThePlanet project is divided into two main sections, the front end and the back end development. This thesis only focus on the front end development using User experience design discipline.

3.1 Strategy

In this stage knowing what the website needs to accomplish both for the company in this Case ShopThePlanet and for the users is essential. Before writing codes, designing the graphics, colours, uploading the site to the server, questions need be asked: what is the product or service objectives? And what does our customers get? Finding the identity of the brand is one of the crucial part of strategy. Brand Identity goes beyond logo design, colours, and typography, it’s important to find a way to bring out emotions from the customers that can make them consciously engaged and be interactive with a product or a service.
Research for user needs is an important strategic component. Finding user needs can be a complicated process since users can be very diverse, different users have different needs, characters, experience and knowledge, so it is important to break down these needs into smaller user segments with common characteristics, by conducting user researching and collecting user data then use this data to create personas to make the users more real.

Strategy also involves team roles. It is important for the team to know their tasks and responsibilities in a project.

3.2 Scope

Once the Strategy is clear, the scope stage deals with how to satisfy those strategic objectives. In order to achieve a valuable outcome, the project scope is defined. The scope gives a common language for the team working on the project, clear articulate information about what product or service the team is building as well as the project milestone is essential for success.
3.3 Structure

Once the requirements have been defined and priorities have been set, the next stage is to develop a conceptual structure of the service or a product. This stage deals with Interaction design and Information architecture disciplines. Interaction design deals with elements and activities that the users could interact with while Information architecture deals with logically arranging and presenting information on the site for better user experience (UX). For example arranging things that are alike on the website and come up with a description of what it is that makes them alike. This can be achieved through testing phases and will help in setting the language of the site based on what users search on the site.

![STP Wireframe](image)

Figure 10: STP Wireframe
3.4  Skeleton

The skeleton stage can be defined through interface design. Skeleton stage deals with arrangement of segments. Through Interface design these segments are arranged to allow user Interaction; from navigation design to Information design. This stage more concrete issues are presented in most cases through a website wireframe.

3.5  Surface

At this stage the focus would be on the sensory design. Looking at areas of the product or service the users will see first, the surface stage is when content and functionality are combined into a final designed where all stages of user experience design are fulfilled. In this stage is where colours, typography and design composite which is a visual image of a finished product demonstrates how all the components of the website work together.

4  ShopThePlanet

4.1  Site Map

![Figure 11: STP Site map](image-url)
This section shows the site map for ShopThePlanet website and each individual page designed. Web technologies, processes and tools used to design this website are presented in earlier chapters.

4.2 STP Home page

Home page needs to say clearly what the site does. In order to support the user needs, the home page is where users can find the most important content of the site. This content should point them to the next pages they should check out on the site. In this case the aim of this site is to present the customers a variety of online shops and hopefully they will purchase products from there.

Home page is a place where most recent content is shown. For ShopThePlanet mostly new shop entries will be shown and these shops will be updated frequently, so that the returning visitors will have fresh information every time they return to the site.

![STP Home page](image)

Figure 12: STP Home page 1

ShopThePlanet website consist of: Header, Vertical navigation menu, Main body, Advert section and a footer.
4.2.1 Header

The header consists of descriptive content, ShopThePlanet logo, horizontal navigation bar and search section.
4.2.2 Vertical navigation menu

The Website offers different shop categories for the uses. Depends on the user needs, they can choose multiple categories on the navigation menu and search for shops. The results will appear on the main body of the website.

4.2.3 Main body

The main body shows different shops and social media section that users can access according to their preference.

Figure 16: STP main body
4.2.4 Advert section

The advert section represents different advertisements that will be displayed on the website according to the agreement between the customer and ShopThePlanet.

Figure 17: Advert section
4.2.5 Footer

The Footer consist of copyright information for ShopThePlanet website, the website author, privacy policy, terms and conditions, site security details and links to main pages on the site.

![Footer Image](image)

Figure 18: STP Footer

5 Conclusion

I took part in this project so that I would gain interpersonal skills in group work and customer service environment. I wanted to gain experience, new skills, confidence in real working life and find out my professional skills so that I would be able to apply them in a society. By the end of the project:

- I have learned the basics of User Experience Design
- I have learned the basics of Hypertext Markup Language, Cascading Style Sheets and web designing.
- I did improve my research skills as I had to gain new knowledge and apply it to the project.

The objective of this thesis project was successfully completed which was to design an e-commerce website for ShopThePlanet. But since the website is no longer online, it can be assumed that the customer wasn’t satisfied enough to continue therefore this project cannot be considered a success since the customer didn’t use the website.

The project was conducted mainly by students, there was a lack of expertise to see all aspects and needs of the project were met to be successful. There was no clear designing plan and I believe if proper project management and user experience design guidelines were followed, may be this would have been a successful project.
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